Supplemental Reading and Reference Material CP-6634 Drug Education & Rehabilitation

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REALITY CHECK!

Rotating your spot is recommended, but sometimes you may not have the veins, or the time to find one.

Think about these things:

- Do your best when your in a hurry, but if you're NOT in a hurry, why rush the shot?
- Save the "easy" spots for when you KNOW you don't have time. The veins in your hand look tempting, but if you're not in a hurry, then save them for when you need them. They are delicate and you can lose them fast.
- If you are panicking about your shot, that is when you could blow your vein! Steady! Take a deep breath. Try to remember what calm feels like.

STUFF YOU KNOW ALREADY

(but a reminder won't hurt!)

- Try to find a place to get off where there's lots of light. Plan ahead.
- Use a new needle every time you possibly can! A sharp point saves lots of wear and tear on veins.

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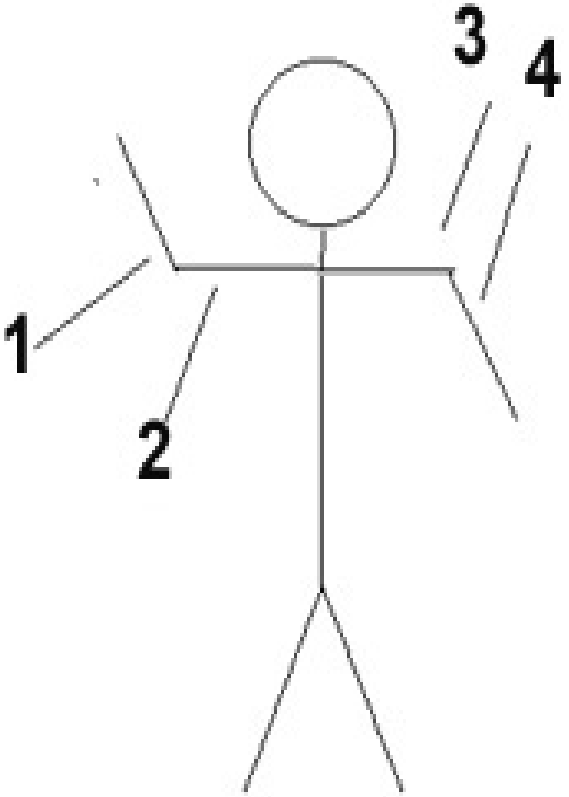
EVERYONE is entitled to take care of themselves, whether they use drugs or not. Learning to take care of yourself takes time and thought. Talk to your friends, find out what they know

TAKING CARE OF YOUR VEINS:

ROTATE YOUR SPOT!



WHAT DOES "ROTATE YOUR SPOT" MEAN ?!?!?!

When you stick a needle in your skin, it leaves a hole that needs to heal. ***The same is true with your veins.*** **You can keep your veins in good shape if you let a spot heal before you hit on it again.**

If you don't let your veins heal, you may get:

- **Collapsed veins (you lose the vein totally)**
- **Infections**
- **Leaky veins, wasted shots**
- **Abscesses from leaks and missed shots**
- **Sticking a needle through a hole that isn't healed can push a blood clot into your blood-stream. This clot could get stuck somewhere else in your body, including your brain. This is really dangerous.**

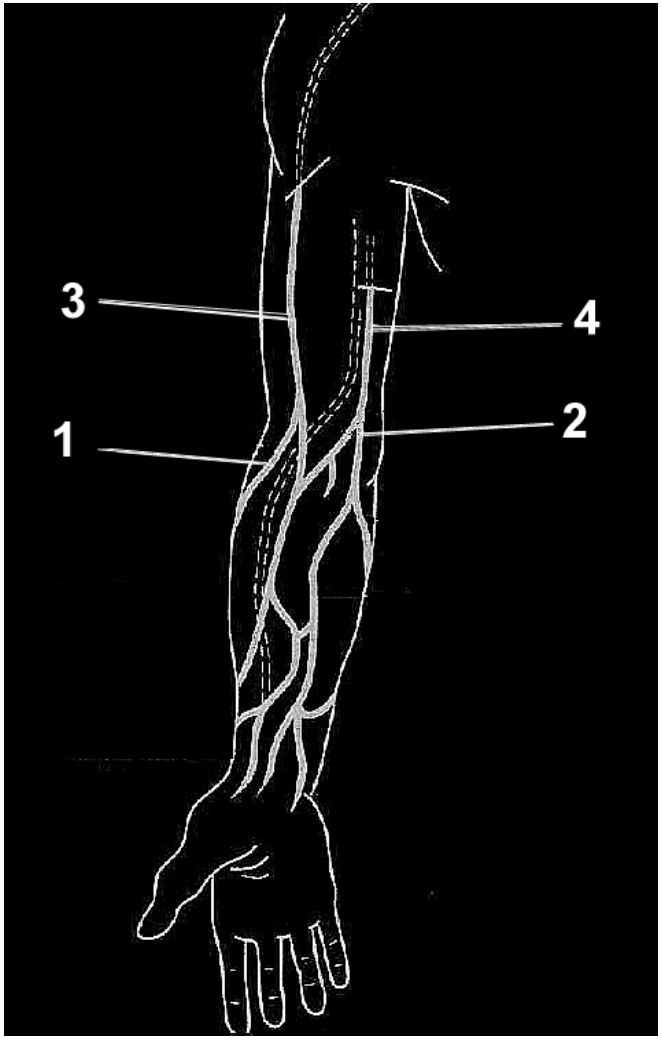
SO WHAT CAN YOU DO?: You can let one spot heal while you use another!

ROTATING YOUR SPOT: You let one spot heal while you use another.

HERE ARE SOME IMPORTANT TIPS. SOME OF THESE THINGS MAY BE A LUXURY, SOME MAY BE EASY. YOU ARE THE ONLY ONE WHO CAN DECIDE:

- Its best to alternate veins. A vein takes *at least* a couple days to heal. More time is better.
- If you use the same vein, shoot **DOWN-STREAM** from your last shot (that means closer to your heart. Look at the picture). Shooting downstream from your last hit means you won't be pushing any blood clots into your bloodstream.
- If you hit yourself, practice injecting with your other hand, in your other arm. It may be awkward, but it gives you more options.
- If you can, tie off (use a tourniquet). This makes finding a vein A LOT easier. But once the needle is in the vein, TAKE THE TIE OFF before you hit! Leaving the tie while you hit on puts too much pressure on the vein, and you could lose the vein!

EXAMPLE



The numbers go DOWNSTREAM (closer to the heart) with each shot
This is only an example: You have to figure out what works best with the veins you have.

FIND THAT VEIN!

- Tying off really helps! But take the tie off after the needle is in and before you shoot, or the pressure in your vein could ruin it.
- Gravity helps! Just standing up and letting your arms hang can bring veins out!
- Swinging your arms and making fists helps, too.

BODY HEAT brings veins to the surface:

- Getting off someplace warm will make finding a vein easier.
- Wearing a sweater or a coat while you prepare the shot can help. Don't take it off until you've got the shot cooked up!
- Wrapping your arm in cellophane or Saran Wrap can heat you up and bring veins to the surface.

If you can, TAKE YOUR TIME!
Sometimes your in a place where you can't stay. Sometimes you're in a hurry because you don't want to be seen. But SOMETIMES you can relax. Don't waste veins by rushing unless you have no choice.

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IF THE SHOT HURTS:
PULL OUT!!

Avoiding Arteries and Nerves When You ***Want a Vein***

People who mainline (inject into veins) have to be really careful about where they hit! AVOID HITTING ARTERIES AND NERVES! ***NEVER INJECT INTO THEM!!!*** Inject only into veins!

REALLY GOOD ADVICE

Anytime you hit something that feels like a vein, but it hurts, PULL OUT!

No matter how sick you are, no matter how bad you want to get off, you will only hurt yourself and waste your shot!.

Reasons the needle may hurt:

1. You hit an artery. Injecting here could kill you. PULL OUT!
2. You hit a nerve. Injecting here could hurt you bad. PULL OUT!
3. You aren't in a vein. This will totally waste your shot, and you could wind up with infections or an abscess. PULL OUT!

If you want that shot, don't waste it. If the hit is hurting, pull the needle out and start again. You are saving your shot, and *you are saving your life*.

HOW YOU KNOW YOU HIT A VEIN:

When you think you've hit a vein, ALWAYS pull back the plunger a little. **If dark red blood comes into the syringe, then you hit a vein.** *Vein blood never comes into the syringe on its own, you have to pull the plunger back.*

If you hit a spot on the surface of your skin that you can see, that is a vein. You are only going to hit an artery if you are searching for a spot deeper down.

HOW YOU KNOW YOU HIT AN ARTERY:

#1: **The color of the blood is bright red.**

- The blood may even be a little foamy or frothy.
- It *might* hurt a lot.
- It has a lot of force behind it. *Sometimes* you don't even have to pull the plunger back, it just comes right into the syringe.
- Sometimes it comes into the syringe in spurts like a heartbeat.
- **If any of these things happen, PULL OUT!!** Apply pressure to the place where you pulled out. If possible, hold your arm or leg over your head! If the bleeding doesn't stop, you gotta call 911 or *get some help*.

HOW YOU KNOW YOU HIT A NERVE:

- It hurts like hell!
- No blood comes into your syringe when you pull back the plunger.
- **If this happens, PULL OUT!!!**

REALITY CHECK

If you are digging around for veins where you can't see them, it means you have probably lost a few. (No one is looking for veins deep down when they can find them right on top.)

If this is you, you need to be careful. You risk hitting arteries and nerves when you have to dig.

Sometimes you don't have a choice, but make an effort to get off where there is good light, and where you can take your time. **An injector in a hurry is an injector at risk. You are entitled to take care of yourself.**

Look on the other side of this flyer for tips on *getting veins*.

If you miss your shot:

Soak the spot in warm water or put a heating pad on it for a while. Heat helps the circulation, so the shot won't get totally wasted. And good circulation will help prevent an abscess.

Also, don't put oils or creams on the spot until the wound has started to close. Wait a couple hours Putting creams on to soon can cause infections and scarring (even if the cream is supposed to *prevent* scarring)!

REALITY CHECK!

Talk is CHEAP!

- Everyone's body is different.
- You can't always find a vein when you want one.
- Women's veins can be harder to hit
- *Sometimes* it's more important to get off fast
- Sometimes you're in a hurry because you're someplace risky

But if you managed to get the drugs and the needle, then you know how to think on your feet. Get your technique down! Don't chew up your veins!

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The Right Hit

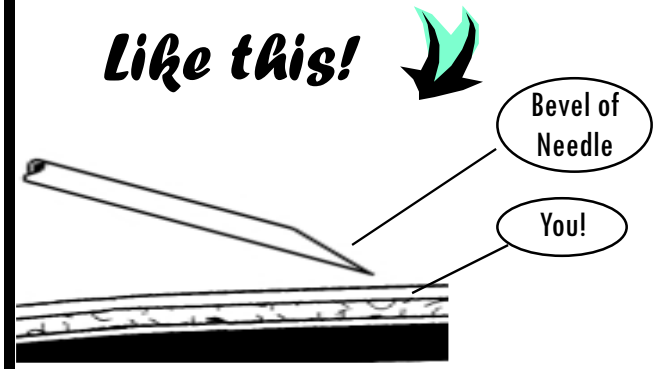
Good Needle Insertion:

- **Saves Your Veins**
- **Saves Your Shot**
- **Prevents trackmarks and bruises AND**
- **Prevents abscesses!**

Get to know your needle!

The tip of the needle is slanted. It's called the "bevel".
When you want to hit a vein, the best shot is with the bevel facing ***UP***.

Like this!



Check out the angle!

The shaft of the needle lays close to the skin. This is the best angle to get a vein!

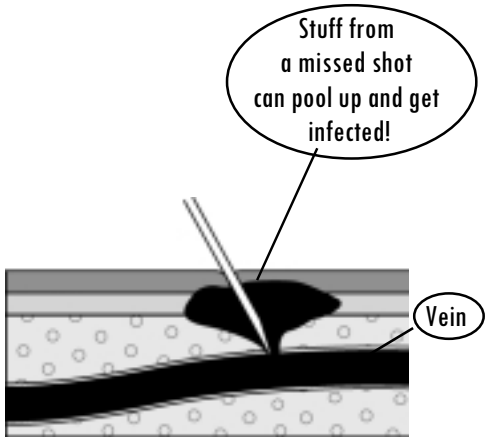
The more straight down you point the needle, the more chance the needle will go straight ***through*** your vein. That's bad for you arm, wastes your time AND your shot.

Insert the needle at a *gentle* angle. It's *gentle* on your veins.

Abscesses...

Here's how it happens

When you miss the vein, you lose the shot. But that's not the only problem. A missed shot can get infected and cause an abscess. This can happen when your vein leaks, too. Getting the shot right saves a lot more than just drugs!



This is especially true with speed and coke. By itself, heroin won't give you an abscess if you miss a shot, but the ***CUT*** in the dope might! Especially the cut in tar heroin. If you shoot tar, take extra care to get the shot in a good vein!

The fact is, getting a good shot is a skill. You learn by doing. A lot of the time, you can't see your veins, and you go by the feel of it.

Go in SLOW! Injecting into a vein is difficult, risky, and there's NO POINT in doing it if you don't get it right.

Tying off can really help. But once you find a vein, take the tie off. Shooting into a vein with a tie on can make the vein collapse!

Give your spot a rest after you use it. Give it a chance to heal. Hitting in the same spot over and over will blow the vein for sure.

Too far too fast!
Needle goes right through the vein!

Not in far enough! Shot leaks, causing abscesses and bruising.

Bevel is up against the side of your vein!
You won't get a register.

OR

Try pulling the needle back just a little.

DON'T BE ASHAMED TO TAKE CARE OF YOURSELF!

Lots of people do things they're ashamed of. Rich important people, from presidents to preachers to TV stars all have stuff they are ashamed of. But drug injectors face a lot more risks than those guys!

Next time you use a bathroom to get off, give yourself credit for doing the right thing.
Next time you freshen up in a bathroom mirror, tell yourself
You're Gorgeous!

REALITY CHECK!

You should be proud of taking care of yourself, but most people still don't want you getting off in their bathroom. Don't expect them to agree that you are taking care of yourself! Duh!

Another great thing about having a sink: *you can clean up any mess you make!* That may be the best thing you can do to guarantee you can use the bathroom or sink again.

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THINK ABOUT HOW YOU INJECT!

THINK

SINK!!

THINK

LIGHT!!

You may already know the information here, but what do you think about it? Take a look. You may feel different when you are done reading.

WE ALL KNOW:

Heroin, coke, speed and other drugs are illegal. Laws make it hard to use easily or safely.

BUT every time you use safely, you are protecting yourself and others.

People don't want you to get off in their bathrooms

BUT every time you get off near a sink, it makes your injection safer.

- You can wash up before AND after you get off.
- Plenty of water to mix your shot
- Plenty of water to rinse out your syringe if you need to use it again!
- *Plus you can freshen up in the mirror!*

THINK SINK!!

Did you know?

Washing your injecting spot with soap and water is as good as alcohol. It may even be better. Alcohol just kills stuff, *but soap and water washes it away*! Needle exchange programs provide alcohol pads and sometimes you don't have a place to wash up before you get off. But soap and water is best!

THINK LIGHT!!

If you pick a sink that's got lots of light, that's even better. Trying to get a hit in poor light blows veins, blows shots, and wastes time. Especially if you're in a hurry, picking a place with decent light will SAVE YOU TIME!

So what's the point?

Other people may not like it that you get off. You may not like it yourself. **That doesn't change what you need to do when you get off!**

People want you to suffer so that you'll stop using drugs. This includes:

- Getting infected with HIV, Hepatitis, endocarditis and abscesses
- Blowing your veins
- Getting busted
- Overdosing
- Death

All in the name of taking care of yourself!

You don't have to agree! Chances are, you know more about the harms of your drug use than they do.

LET'S GET OUR PRIORITIES STRAIGHT!

Four big factors will shape where you stick that Needle!

1 WHERE you are getting off: if you are someplace comfortable where you can take your time vs. someplace you have to be sneaky and finish fast

2 WHAT you are using: if you're on a big coke run, you are gonna use your hit spots more than if you are getting your dope fix.

3 WHO: Are you getting off by yourself? This means you're gonna hit yourself someplace you can reach. Maybe you never hit yourself, which means the other person needs to know what they're doing.

4 FRUSTRATION: You want to get off, and if you get really frustrated, it can make you impulsive! The truth is, sometimes you are gonna be sick, and you want to be well ***FAST***. Factor this in when you make your plans!

These things will all affect how you pick your spot. But each spot has its risks, and you need to think about those too!

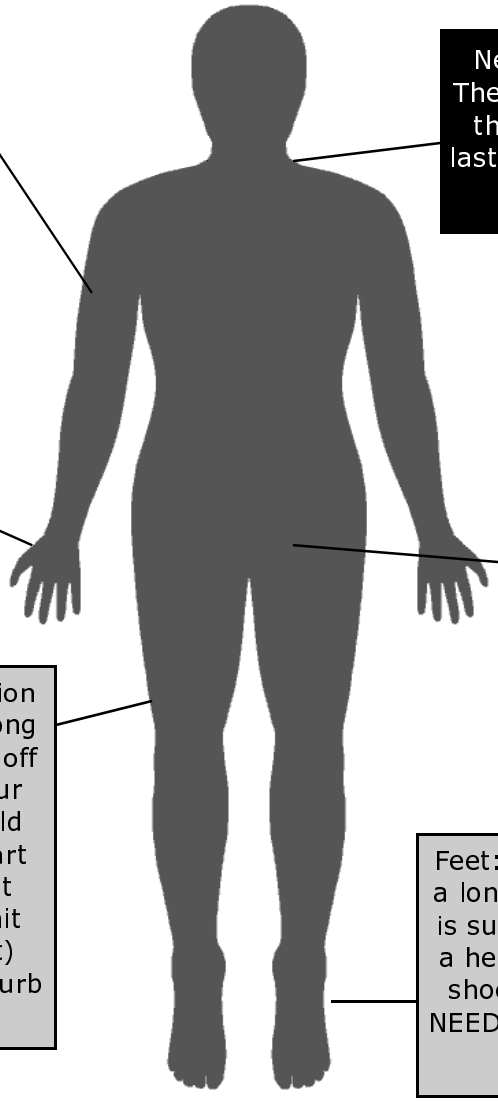
SUPER IMPORTANT! If you feel a pulse, that's an ~~ARTERY~~ **!!** Never hit an artery! Its really dangerous.

The farther away from your heart, the weaker the circulation. Veins in the hands and feet heal more slowly, so its easier to totally blow them if you use them a lot.

Arms: **lowest** risk, best choice. Duh! Upper arm is better than lower. Why? It's closer to the heart. Taking good care of your arm veins pays off: you don't have to get off in harder, riskier places.

Neck: **HIGH RISK!** Why? The **carotid artery** is here. Hit this and you could die. Total last resort! Only for the die-hard and very experienced!

Hands: relative **low** risk. Lots of rollers here, it can be harder than you think to get a good shot! If you scar or track here, you can't hide it. If you blow veins here, your hands can stay swollen. Use the narrowest needle you can get here! Let your spot heal between



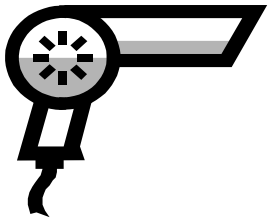
Groin: **HIGH RISK!** Why? The **femoral vein** is big, and fairly easy to find. But its really close to the **femoral nerve and artery.** Be sure to avoid the artery by checking for a pulse. If you feel it, don't hit there! Move a short distance toward the inside of your leg to find the vein. You may not see it. Don't try to hit here unless you really know how to hit "blind".

Legs: **Medium** risk. Why? Circulation problems. Blood in your legs is a long way from your heart. Plus, getting off in your legs is more likely than your arms to leave blood clots than could break off and get stuck in your heart or lungs. Bad. Every time you hit near where you hit on your legs, hit "downstream" (closer to the heart) from the last spot, so you don't disturb a spot that is healing!

Feet: **Medium** risk. Veins here take a long time to heal. Circulation here is super slow. Plus, its hard to keep a healing spot clean when you were shoes and socks. Remember: you NEED your feet. Lose these and your screwed!!

FIND THAT VEIN!

- Tying off really helps! But take the tie off after the needle is in and before you shoot, or the pressure in your vein could ruin it.
- Gravity helps! Just standing up and letting your arms hang can bring veins out!
- Swinging your arms and making fists helps, too.



HEAT brings veins to the surface:

- Getting off someplace warm will make finding a vein easier.
- Wearing a sweater or a coat while you prepare the shot can help. Don't take it off until you've got the shot cooked up!
- Wrapping your arm in cellophane or Saran Wrap can heat you up and bring veins to the surface.
- Using a blow drier or a hand drier can bring veins up.

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LEVELS OF RISK

OK

Maybe

Careful!

Extreme Caution!!!

PICKING A SPOT TO HIT: KNOW THE RISKS!

Where to Get Your Abscess Seen

If You Are Getting Treated Badly at the Doctor

Everyone deserves to get treated fairly when they get healthcare but almost every drug user knows a horror story about someone who was badly treated by a healthworker who either didn't know how to treat drug users or wanted to punish the person because they used. When you decide to go for care one suggestion is to bring a friend or loved one who can act as your advocate.

If you feel that you are being badly treated in a healthcare setting because you are a user or for some other reason (race, homelessness, cause' yer' poor) it is important that you complain, because they will never do anything about the situation if you don't.

Make sure to write a complaint as well as talk to someone in authority and be as calm and articulate as possible when you talk to people. Also make sure to site specific actions (like the nurse took people ahead of you or the doctor did not listen to you when you told her/him that you needed more pain meds) and not general impressions ("she don't like me").

Abscess 411

Abscesses are a serious problem for people who shoot drugs. But what the hell are they and where can you go for care?

What are abscesses?

Abscesses are pockets of bacteria and pus underneath you skin and occasionally in your muscle. Your body creates a wall around the bacteria in order to keep the bacteria from infecting your whole body. Another name for an abscess is a "soft tissues infection".

What are bacteria?

Bacteria are microscopic organisms. Bacteria are everywhere in our environment and a few kinds cause infections and disease. The main bacteria that cause abscesses are: *staphylococcus* (staff-lo-coc-us) *aureus* (or-e-us).

How can you tell when you have an abscess?

Because they are pockets of infection abscesses cause swollen lumps under the skin which are often red (or in darker skinned people darker than the surrounding skin) warm to the touch and painful (often VERY painful).

What is the worst thing that can happen?

The worst thing that can happen with abscesses is that they can burst under your skin and cause a general infection of your whole body or blood. An all over bacterial infection can kill you. Another super bad thing that can happen is a endocarditis, which is an infection of the lining of your heart, and "septic embolism", which means that a lump of the contaminates in your abscess get loose in your body and lodge in your lungs or brain.

Why do abscesses happen?

Abscesses are caused when bad bacteria come in to contact with healthy flesh. One way this happens is through dirty injection practices. Bacteria can be easily be pushed into your body when you shoot up from dirty needles and equipment, from dirty hands and skin, or from dirty dope.

How come some people get abscesses all the time and other people never get them?

There are lots of reasons why some people are more prone to abscesses these include:

- Bad personal hygiene, especially injection hygiene, is the number one reason for abscesses.
- Musceling and skin-popping are also major reasons why some people get more abscesses than others. This is because bacteria won't grow in your blood like they do in your tissue.

(*reasons why some people get abscesses more than others continued*)

- A "compromised immune system" can make you more susceptible to getting abscesses. This means that your body can't fight off disease very well because of things like HIV, cancer, or constant stress.
- "Bacterial colonization" meaning the main bacteria on your skin are the ones that cause abscesses making it much, much more likely that you will get exposed to that kind of bacteria.

What can I do about an abscess if I get one?

The best thing to do is to keep the area clean and apply hot compresses or soak the area in warm water with Epsom salts. This will help increase the circulation in the area and either help the abscess to go away without opening or help bring it to a head so it will burst on its own.

If you open your own abscess:

Please use something CLEAN AND SHARP. The best thing is a scalpel or razor blade that has never been used. If you have to use something like a pocket knife make sure you heat it until it turns red-hot, this should mean that the blade is sterile. NEVER EVER use anything rusty or dirty (cause' you could add tetanous to an already bad situation).

Clean your hands or wear gloves. Make one hole not more than an inch and a half long, in the swollen area that seems the softest. Squeeze all the pus out. Sometimes you will need to manipulate the area so that you open all of the pus pockets.

Use tissue to wipe away the pus and use soap and water, water and iodine, or salt water to clean the area. Do not use alcohol or hydrogen peroxide. Pack the wound with gauze, you do this so that the tissue can heal from the bottom out. Sometimes, if you don't pack the wound, the top will heal over and the abscess will re-occur in the same place. If you don't have gauze use clean cotton fabric. Do not use cotton balls or tissue because they will adhere to the wound. Cover the wound with more gauze or a clean cloth. Change the packing and clean it every day for about 5 days, then remove it and let it close. **Keep everything SUPER clean during this time.**

When do I need to go to the doctor?

Sometimes you MUST go to a doctor for help with an abscess. Here is what to look for:

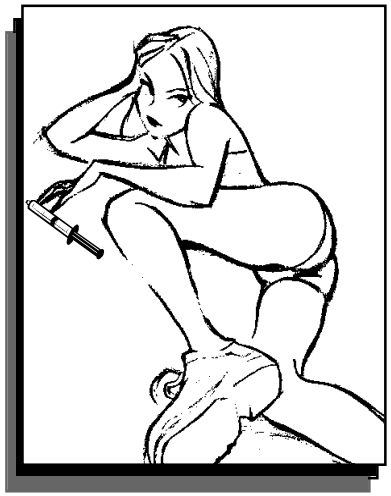
- A dark red line running away from the abscess. This can indicate blood poisoning, which can kill you.
- A very high or persistent fever.
- A lot of pain.
- **If the area begins to lose any feeling or turn green or black.**

How can I avoid getting abscesses?

There are A LOT of things you can do to avoid getting abscesses. But the number one thing you can do is to:

CLEAN YOU SKIN BEFORE YOU SHOOT UP!!!!!

- Clean your skin before you shoot. ***Every time***. If you don't have alcohol wipes, don't worry- soap and water works just as well if not better!
- Wash your hands before you use, *every time*.
- If you can't wash your hands use gloves or at least clean the tips of your fingers with swabs.
- Mainline, don't skin or muscle dope!
- If you have to skin or muscle cut your dope with LOTS of water, not only will this help your body absorb the dope easier it will also get you well faster.
- Try to use a new rig each time you use.
- If you have to re-use your own rig make sure to clean it with bleach, soap and water, or if you don't have those at least warm water.
- Mix your drugs on a clean surface! (like a piece of paper).
- Cook your drugs until they boil (about 10-15 seconds) this probably won't kill HIV or Hep C but it does help kill bacteria.
- If you "pound" or "wash" cottons make sure to cook them **again** with extra water.
- NEVER EVER lick your point before you inject, your mouth is nasty.
- Only use water from clean sources like the tap, bottled water, or the waters they give at the needle exchange.
- Consider booty bumping or inhaling your dope.



To Booty Bump: Cook your drugs as usual. One comfortable position for this is to lie on your side with your leg pulled up toward your chest. Using a needle (<u>with the tip broken off!</u>) put them in your butthole. You may want to use a lubricant to make it easier. You will get high in about the same amount of time as you do muscling. You may find that using slightly more water than normal and/or making sure the mixture is warm helps it get you "well" faster!

To Inhale Your Dope: Cook your dope as usual but pour it into an empty nasal spray bottle and squirt it up your nose. Another benefit of this is that you can get a hit of dope almost anywhere without having to worry

Running warm water over the injection site will help raise a vein. So will opening and closing your hand in a pumping action.

Try not to touch anything that hasn't been cleaned until you have finished injecting.

Put the needle into your arm at a 45-degree angle, with the hole facing up. Blood will sometimes appear in the barrel when the needle is inserted in the vein.

Pull back (jack back) the plunger and blood should appear. If there is still no visible blood in the fit, remove the needle and tourniquet from your arm, apply pressure (using a cotton ball, tissue or toilet paper) to stop any bleeding, take a deep breath and start again.

When you are sure the needle is in the vein, loosen the tourniquet and slowly depress the plunger. If you feel any resistance or pain, you may have missed the vein and will need to start again.

Remove needle, keep your arm straight, and apply pressure to the injection site for a couple of minutes (using a cotton ball, tissue or toilet paper). Don't use a swab to stop the bleeding: it may in fact stop the blood clotting.

4) Cleaning Up

Even if you are disposing of your fit, rinse it with clean cold tap water, straight after your hit. This will remove most of the blood and prevent it from blocking and help reduce the likelihood of dirty hits if you have to use the fit again.

Dispose of the rinsing water immediately, so no-one else can use it and contaminate their equipment with your blood.

Recap you own fit and dispose of it in a disposal container or a puncture-proof, child-proof container and return to your NSP. Don't recap other people's fits.

Wipe down the area where you have mixed up with soapy (detergent) water. Where there is a possibility of skin contact, the area should be then wiped with household bleach.

Don't re-use swabs, filters, or open water ampoules: they can become contaminated once opened.

When you have cleaned up, wash your hands and arms with warm soapy water. If this is impossible, use single wipes with new swabs instead.

Store all your equipment in a clean, safe place.

CONTACTS

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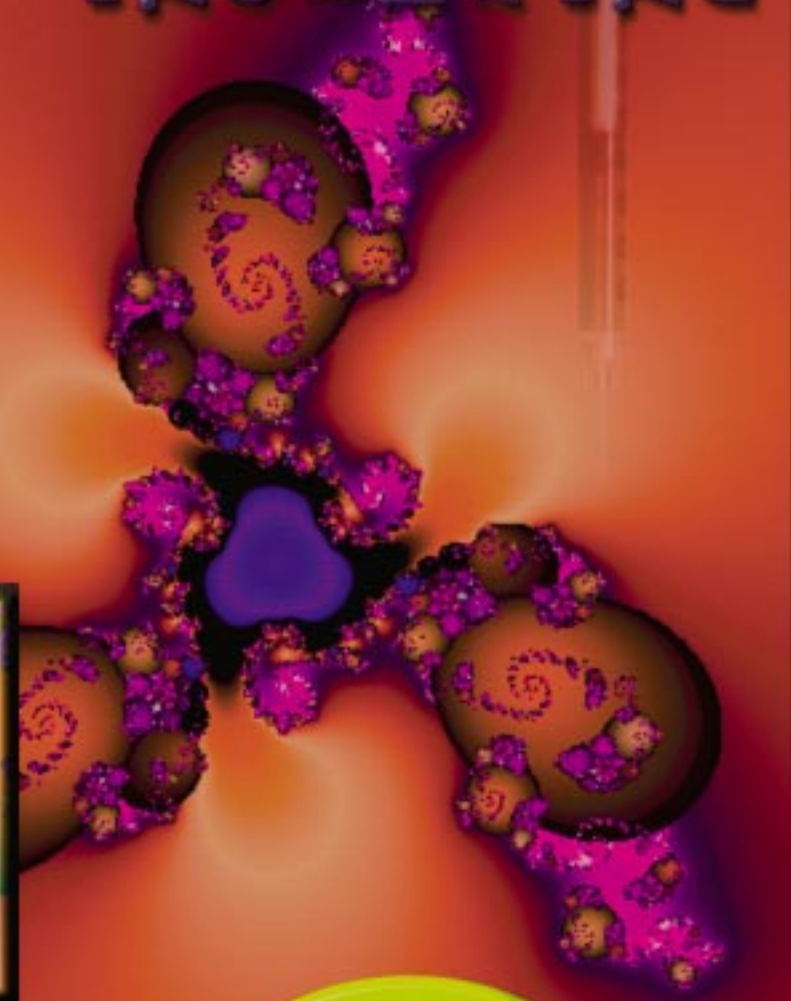
These guidelines have been developed by the AIVL National Hepatitis C Education and Prevention Program.

SAFER INJECTING



AIVL

AUSTRALIAN INTRAVENOUS LEAGUE

The best way to avoid contracting hepatitis C and other blood-borne viruses such as HIV and hepatitis B is not to inject.

Why should you use safer injecting practices for every hit?

Safer injecting practices can prevent the transmission of hepatitis C and other blood-borne viruses such as HIV and hepatitis B. It can also help prevent dirty hits, bruising, blood poisoning and abscesses.

If you are hepatitis C positive it is still important to protect yourself as you can be reinfected with a different or the same strain of hepatitis C or with hepatitis B and HIV.

If you can't get new equipment you could try using your drugs another way such as snorting, swallowing, smoking or stuffing (up ya bum).

Being aware of blood!

Blood-borne viruses such as hepatitis C can live outside the body for days (even weeks). Even microscopic amounts (too small to see) of blood can transmit hepatitis C and blood can be transferred from one person to the next while injecting.

So being aware of blood means being alert to what is happening throughout the injecting process so you won't accidently expose yourself to any viruses. If you think blood, yours or someone else's, has contaminated any surface or equipment you should replace any sterile equipment, re-clean any other things that may have been contaminated, and re-wash your hands before proceeding.

Safer Injecting Procedures

When injecting it is important to do so safely and carefully. The best way to play it safe is to always inject with a new fit, new sterile water, new swabs (at least one to swab your spoon and one to swab your injecting site), a clean tourniquet, a clean filter, a clean injecting space, clean hands and an approved disposal bin.

1) Preparation

Choose a safe place to inject: one that is private, clean, well lit with running water, if possible.

Use soapy water to wipe down the surface where you'll prepare your hit or lay down the paper bag your equipment came in.

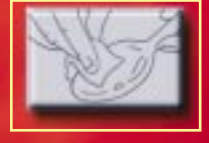
Make sure you have everything you need within reach: new sterile fits, new sterile water (or cooled boiled water in a clean glass), new swabs, a clean filter, clean spoon, and a clean tourniquet.

Wash your hands in warm soapy water. Hand washing is very important to remove viruses, bacteria, and plain old dirt from your injecting environment.

If you can't wash your hands use single wipes with new swabs to clean them. Rubbing swabs backwards and forwards spreads the dirt and bacteria around.

2) Mixing Up

Clean the spoon by wiping once with a new swab and let it dry. Put the drugs in the spoon.



Use your new sterile fit to draw up water from the new ampoule of sterile water (or cooled boiled water in a clean glass).

No matter how well it has been cleaned, never let your used equipment or anyone else's come into contact with a group mix. Unless new sterile fits are used to mix and divide up, each person must have all their own equipment.

Add the water to the spoon and mix. You can use the blunt end of your syringe, which you have swabbed clean with one wipe of a new swab, for mixing.

Add the filter to the spoon. The best filters are a bit of a new swab or tampon or a cotton bud.

If you are injecting pills, use pill filters if you can get them; if you can't get them, filter at least three times. Draw the solution up through the filter to remove impurities.

Remove air bubbles by pointing the needle skywards and flicking it on the side. Push the plunger up slowly until the air bubbles escape through the eye of the needle.

3) Injecting

Wipe the injection site once with a new swab.

Place the tourniquet around your upper arm (or above the injection site). Don't leave it on too long. If you have trouble finding a vein, release the tourniquet and try again.

Harm Reduction Journal

BioMed Central

Research

Drug use and risk behaviours among injecting drug users: a comparison between sex workers and non-sex workers in Sydney, Australia

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Abstract

Background: This paper examines the differences in demographics, drug use patterns and self reported risk behaviours between regular injecting drug users (IDU) who report engaging in sex work for money or drugs and regular injecting drug users who do not.

Methods: Cross sectional data collected from regular IDU interviewed as part of the New South Wales (NSW) Illicit Drug Reporting System (IDRS) in 2003 were analysed.

Results: IDU who reported engaging in sex work were more likely to be female, and identify as being of Aboriginal and/or Torres Strait Islander descent. They initiated injecting drug use at a significantly younger age and were more likely to report injection related problems than IDU who had not engaged in sex work. There were no differences in the drug classes used, but findings suggested that the sex workers tended to be more frequent users of crystalline methamphetamine (ice) and benzodiazepines.

Conclusion: The similarities between these groups were more striking than the differences. Further research, examining a larger sample is needed to clarify whether injecting drug users who are sex workers have heavier use patterns.

Background

The last two decades have seen an increasing interest in the study of sex workers as a marginalised group at increased risk for poorer mental and physical health outcomes, inequitable access to housing and the problematic use of illicit drugs [1]. Previous research has documented the risks of blood borne virus (BBV) transmission and sexually transmitted infections among sex workers due to unprotected sex with clients [2], the relatively high rates of HIV among sex workers in some countries, and the potential risks posed to the broader community via BBV transmission through clients to the general population [3]. It should be noted that HIV prevalence among sex workers differs in Asian countries compared to North America and Europe. In the latter countries research has shown that HIV prevalence is no different among IDU and sex

workers who are IDU [4], and that HIV is more prevalent among sex workers who are IDU compared to sex workers who are not IDU [5], indicative that it is injecting drug use that puts these groups at risk of HIV. In countries such as Africa, HIV infection is largely associated with heterosexual activities [6].

The literature suggests that sex workers are disadvantaged across a number of domains. One study that examined mental health status among a group of Puerto Rican sex workers [7] found that the overwhelming majority (91%) reported a high rate of depressive symptoms (measured using the Centre for Epidemiologic Studies Depression Scale). The authors also found that street sex workers reached significantly higher levels of depressive symptoms (86%) than brothel workers (45%). Approximately half of the sample (47%) reported injecting drug use, and a significantly higher proportion of those injecting drugs (90%) reported high levels of depressive symptoms compared to non injecting drug users (52%).

Another study comparing street sex workers and non street sex workers in Sydney, Australia [8] found that street sex workers were; predominantly female, significantly more likely to identify as being of Aboriginal and/or Torres Strait Islander descent (20%), and to be currently injecting drugs (77%) than those working `indoors' (7%). Street sex workers also had high rates of Hepatitis C (71%), possibly indicative of their injecting drug use. Interestingly, a significantly higher proportion of `indoor' sex workers (48%) reported alcohol use than street sex workers (29%). Approximately one quarter of the street sex workers had no permanent accommodation, and a similar proportion (27%) reported no supportive relationships.

In contrast to these findings, a study comparing sex workers and non sex workers in New Zealand [9] found no differences between the groups across domains such as access to accommodation, level of social support, and mental and physical health. However a significantly higher proportion of sex workers (76%) reported tobacco use than non sex workers (29%) and sex workers also reported higher consumption of alcohol (58% reported drinking more than 5 standard drinks per occasion of use compared to 23% of non sex workers). The absence of differences between sex workers and non sex workers in this study may be attributed to the fact that only 2 of the sex workers sampled were street workers. Previous studies suggest that street sex workers are a more marginalised group than non street sex workers, and if the sample contained a greater number of street sex workers, the authors may have found more significant differences on a range of variables.

These patterns are also evident among male sex workers. An Australian study sampled male sex workers in three cities (Melbourne, Sydney and Brisbane) to document their characteristics [10]. When street sex workers were compared with non street sex workers, they were less educated, more likely to report financial problems, less likely to be tested for blood borne viruses and sexually transmitted infections, and were higher drug users than non street sex workers.

These differences are also evident in the U.K, with studies showing a higher prevalence of injecting drug use and more problematic drug use, among street sex workers compared to non street sex workers. There is also evidence in the U.K. literature of women moving to street based sex work from indoor markets due to problematic drug use [11].

Research reviewed (e.g. [7]) indicates that drug use is an important predictor for poorer outcomes for sex workers, which has generated an interest in the role of drug use, and drug use patterns among this group. An ethnographic study of women in New York who engaged in sex work [12] found that drug use played a substantial role in the way these women conducted their sex work. Crack cocaine had a particularly deleterious effect on sex workers as it was thought to lead to lowering of the price of sex work exchanges, engendering a more hostile environment among sex workers and more violent exchanges with clients, and an increased potential for high risk sexual encounters. Many of the women Maher interviewed also used crack in order to facilitate their engagement in sex work.

One study of a group of cocaine `dependent' sex workers in the United States [13] found that two thirds of the sex workers came from ethnic minority groups, two thirds had completed less than 12 years of education, and a fifth were homeless. Another U.S. study, investigating "crack" cocaine smoking sex workers [14] mirrored these results, as did an Australian study [8] in which 20% of street sex workers identified as Aboriginal and/or Torres Strait Islanders and a fifth had no permanent accommodation.

The risks faced by sex workers are further compounded by drug use, with studies documenting associations between sex workers' drug use and the poorer safety outcome of the sex encounter (e.g. [15]), and risk of BBV transmission due to injecting drug use and sharing of needles [2]. Sex workers are a group characterised by high levels of drug dependence and those who inject drugs may be at greater risk on a multitude of factors than sex workers who do not. A study of 51 female sex workers in London who were current drug users [2] found that the majority of women using heroin (88%) were daily users, and many reported

high levels of dependence in accordance with the Severity of Dependence Scale (SDS). The majority of IDU sex workers (75%) had used injecting equipment after someone else. However, the sharing of injecting equipment was related to severity of dependence on heroin rather than sex worker status *per se*. This finding suggests that dependent drug use may be a key factor for engaging in risk behaviours rather than sex work.

Comparative research has been conducted in Australia examining drug use among sex workers and various other groups, including women from community health services [16] and women from general population surveys [17]. Findings suggest that female sex workers have higher rates of illicit drug use [16], heavier use of alcohol and tobacco [9,16,17] and higher rates of sharing injecting equipment [17] compared to women from the general community. While these findings provide some insight into drug use patterns among each group, they have tended to sample non sex workers from populations that are likely to be quite different across a number of domains than sex workers, therefore limiting the validity of comparisons and conclusions about the risks that involvement in sex work may carry.

One U.S. study has examined similar groups. Logan, Leukefeld and Farabee [18] investigated the differences between female crack users according to whether or not they engaged in sex work, and found that both groups were just as likely to be African American, to be unemployed, to have similar educational backgrounds, and similar drug use patterns. However, women engaging in sex work were likely to have less access to accommodation, more frequent contact with the criminal justice system, earlier initiation of alcohol and cocaine use and higher rates of injecting drug use than non sex workers. In summary, while these groups were similar in some respects, there were also important differences, indicating that among an already marginalised group (i.e. crack users) sex workers are more likely to be even more marginalised than their non sex worker counterparts.

Investigating differences between sex workers and non sex workers among injecting drug users (IDU) may provide new insight into whether sex work status is likely to increase the risks among an already marginalised group. To the best of the authors' knowledge there has been no research conducted in Australia among IDU to determine whether there are differences between sex workers and non sex workers with regard to drug use patterns and risk behaviours. Previous research in Australia has focused on sex workers and their drug use patterns without comparison data. Australian findings are likely to differ from studies conducted in America, as there is little, if any, crack use in this country [19], and heroin is the most commonly injected drug among sentinel groups of regular IDU, particularly in Sydney [20,21].

The current study aims to examine whether regular injecting drug users who engage in sex work are at greater risk for adverse outcomes (such as homelessness and poor mental health), are more likely to engage in risky behaviours (needle sharing, criminal activity), and have different drug use patterns than injecting drug users who do not engage in sex work. Data are drawn from the Illicit Drug Reporting System (IDRS), in which sentinel groups of regular IDU are sampled annually.

Aims

1. to document the proportion among a sentinel group of regular IDU who report engaging in sex work for money and/or drugs;

2. to compare the demographics of this group with regular IDU who do not report sex work;

3. to examine and compare the drug use patterns of these groups;

4. to consider and compare self-reported risk behaviours in these groups.

Method

This paper used cross-sectional survey data collected in 2003 on a sentinel population of regular IDU regarding their drug use history, patterns of use, risk taking behaviours and drug-related harms. Data were from the NSW Illicit Drug Reporting System (IDRS). The IDRS is conducted annually in June using the same methodology, and provides sensitive data on trends and changes in drug use over time [22].

Participants were recruited through Needle and Syringe Programs (NSPs) in Sydney, NSW. NSP sites were chosen due to their proximity to street based illicit drug markets, as these markets are likely to attract regular IDU. Interviewers were positioned in the waiting area of the NSP, and clients were asked if they were interested in participating in a confidential survey being conducted by the University of New South Wales. Although some clients declined to be interviewed, refusal to participate did not present as a major issue. Participants received reimbursement of $30 for travelling expenses. Eligibility criteria for entry into the study were: (i) at least monthly injection in the six months preceding the interview; and (ii) residence in Sydney for twelve months preceding the interview, with no significant periods of incarceration or residence in inpatient rehabilitation programs. One hundred and fifty four regular IDU were eligible to participate in the New South Wales IDRS in 2003. Prior to commencing the

Table 1: Demographics of IDU by sex work status

	Sex workers % (n = 22)	Non-sex workers % (n = 132)
female	77	23
transgender	0	0
Age (M)	32	33
Years education (M)	8.9	9.7
ATSI	59**	28
not engaged in other employment	96	85
homeless	5	12
prison history	64	68
in drug treatment past 6 months	68	66
currently in drug treatment	45	47
criminal activity main income past month	0	28

**significant at $p < 0.01$

interview, each participant was provided with information about the study as well as an assurance of confidentiality. Once the participant provided written consent for involvement in the study, a structured interview of approximately 45 minutes duration was conducted. No identifying data was collected at any time throughout the interview or recorded on the questionnaire. Responses were coded according to closed data fields on the interview schedule. IDU sampled for the IDRS are not intended to be representative of all IDU, but do provide important information about patterns of illicit drug use among IDU who are actively engaged in illicit drug markets, a group that we wished to examine in this study.

IDU who reported current engagement in sex work for money and or drugs are classified as sex workers for the purpose of this paper.

Statistical Analyses

Differences in demographics and drug preference were analysed using chi square statistics. Differences in age of initiation into injecting drug use were analysed using the t test statistic. Mann Whitney tests were employed to analyse differences in drug use patterns (i.e. median days of use in the preceding six months) and expenditure on drugs.

Limitations

The results of the current study should be interpreted as indicative of certain trends, given the relatively small number of sex workers sampled. Further research in Australia, examining issues raised in this study, needs to be conducted among larger groups of sex workers for more definitive results. Findings should also be interpreted within the context of street based sex workers, who differ from commercial sex workers in several domains [7,8,10]. While this limits the generalisability of findings to other sex workers, sampling street based sex workers serves the aims of this study well; many street based sex work markets function as an adjunct to illicit drug markets [12], with street based sex workers operating within close proximity to street based drug markets.

Results

Demographic Characteristics

The demographic characteristics of IDU according to sex work status are presented in Table 1. A total of 22 participants identified as having performed sex work for money and/or drugs in the month preceding interview. This represented 14% of the total IDU sample interviewed. This proportion was similar to those in previous years: 15% in 2002 and 7% in 2001 reported sex work as their main source of employment in the month preceding interview.

Among those in the 2003 sample who identified as engaging in sex work, 5 were male. The average age of sex workers (SW) was 32 years old (comparable to non sex workers (N-SW) who were, on average, 33 years old), and SW had completed an average of 8.9 years of education (compared to 9.7 years for N-SW). Sex workers were significantly more likely to identify as being of Aboriginal and/or Torres Strait Islander descent compared to N-SW (Table 1) ($\chi^2 = 6.94$, df = 1, $p < 0.01$).

Ninety six percent of SW reported that they were not engaged in any other form of employment compared to 85% of N-SW. There were no significant differences between the two groups in the likelihood of reporting a prison history, participation in drug treatment or homelessness.

Drug use history

The mean age of initiation into injecting drug use was significantly younger for SW (17.6 years) than N-SW (20.3

Table 2: Drug use history & current drug use of IDU by sex work status

	Sex workers % (n = 22)	Non-sex workers % (n = 132)
Age first injected (M)	17.6*	20.3
% heroin first injected	59	63
% amphetamines first injected	41	33
No. drug classes ever used (M)	10.6	10.1
% heroin drug of choice	96	83
% heroin injected most in past month	87	83
Daily or more injecting past month	82	65
Heroin		
injected last 6 months	100	96
Median days injected	175	170
Cocaine		
injected last 6 months	50	48
Median days injected	6	5
Methamphetamine (ice)		
injected last 6 months	36	35
Median days injected	36	5
Methamphetamine (speed)		
injected last 6 months	36	29
Median days injected	2	3.5
Benzodiazepines		
injected last 6 months	18	19
Median days injected	90	12
Alcohol		
used last 6 months	68	68
Median days used	24	18
No. drug classes used last 6 months (M)	7	6.5
Spent money on drugs yesterday	100*	77
Median amount spent on drugs yesterday	$145**	$100

*significant at $p < 0.05$
**significant at $p < 0.01$

years) ($t = 2.035$, $df = 152$, $p < 0.05$). There were similarities between the groups with regard to the first drug they injected: heroin was the most common first drug injected, followed by methamphetamine. There was no difference in the mean number of drug classes SW and N-SW reported ever using (Table 2).

Current drug use

All but one of the SW reported heroin as their drug of choice (the remaining sex worker nominated benzodiazepines); among N-SW the majority reported heroin as their drug of choice, with smaller proportions nominating methamphetamine, cocaine, cannabis, and benzodiazepines. Heroin was reported as the drug most frequently injected in the month preceding interview among both SW and N-SW. Heroin was also most commonly reported as the last drug injected by both groups. There were no significant differences between proportions reporting injecting at least daily in the preceding month (Table 2).

Table 2 shows the classes of drugs used in the six months preceding interview and frequency of use during this period. Patterns of drug use among SW and N-SW were similar for most drugs with a few notable exceptions. Similar proportions reported using crystalline methamphetamine (ice) in the preceding six months, however SW reported using it on a median of 36 days compared with 5 days among N-SW. Likewise, although similar proportions reported intravenous benzodiazepine use in the preceding six months, SW reported a median of 90 days injecting compared to 12 days among N-SW. There was no difference in the mean number of drug classes SW and N-SW reported using in the preceding six months.

Sex workers were significantly more likely than N-SW to have spent money on drugs on the day preceding interview ($\chi^2 = 4.84$, $df = 1$, $p < 0.05$), and to have spent significantly more on that day than N-SW (Table 2) (Mann-Whitney = 800, $p < 0.01$).

Table 3: Self-reported risk behaviours & problems among IDU by sex work status

	Sex workers % (n = 22)	Non-sex workers % (n = 132)
borrowed needles in past month	14	5
lent needles in past month	23	11
last injected in public place in past month	36	26
usually injected in public place in past month	23	28
injection related problems past month	86*	55
attended mental health professional past 6 months	32	25
property crime in past month	32	31
drug dealing in past month	36	36
arrested in past 12 months	50	49

*significant at $p < 0.05$

Risk behaviours

Larger proportions of SW than N-SW reported borrowing used needles after someone else had already used them in the month preceding interview, and larger proportions had lent needles to others after they had used them. These differences were not significant. There was no difference in proportions sharing other injecting equipment in the preceding month. Likewise, there were no differences between proportions reporting last injecting in a public place, and usually injecting in a public place in the month preceding interview (Table 3).

Sex workers were significantly more likely to report injection related problems than N-SW ($\chi^2 = 6.32$, df = 1, $p < 0.05$), with the most common injection related problems reported among SW being prominent scarring and bruising and difficulty injecting.

There were no differences between proportions of SW and N-SW reporting attending a mental health professional for mental health problems other than drug dependence in the preceding six months. Nor were there differences in proportions reporting engaging in property crime or drug dealing in the preceding month, or being arrested in the previous twelve months (Table 3).

Discussion

This paper examined whether regular IDU who reported engaging in sex work were different from those who did not. Sex workers were more likely to identify as being of Aboriginal and/or Torres Strait Islander descent than non-sex workers, and this is consistent with previous research that has found that women who come from socially and economically disadvantaged ethnic minorities are over represented among sex workers [8,13,14], and also over represented among Australian injecting drug users [21,23-25]. These findings raise several implications for both health and drug treatment agencies, as well as for future research. Firstly, agencies providing health services for SW may need to consider tailoring programs to the needs of individuals who identify as ATSI, which could involve ATSI liaison personnel as part of outreach teams and services provided on site. Drug treatment programs also need to be more relevant for this population, as while ATSI are over represented among Australian IDU, they are under represented among IDU accessing drug treatment services [26]. There is general agreement among researchers that there is remarkably little published information available on ATSI IDU [27], and a paucity of research on what constitutes "culturally appropriate" treatment interventions for these populations [28]. Further research, establishing why so few ATSI IDU utilise available treatment programs, and identification of potential barriers for this group, is warranted in order to develop relevant programs that would encourage attendance.

There were no significant differences in drug types used by SW and N-SW, however SW initiated injecting drug use at a younger age. Again, these results are consistent with the literature that suggests that earlier age of initiation has been associated with a range of adverse outcomes later in life. Evidence suggests that those who have begun substance use by an early age are more likely to develop problematic substance use [29-32], engage in risky sexual behaviour [31,33], become involved in criminal activity [31], and complete fewer years of education [34]. Earlier initiates to substance use are also more likely to become more dependent, use for a longer time and have more drug-related problems. [35-40]. In the current study, among an already marginalised group of regular IDU, earlier initiation to drug use appeared to be associated with an additional risky behaviour – sex work. Research in Australia has illustrated these risks, with sex workers (particularly those who are street based) being more vulnerable to adverse contact with law enforcement, subject to

physical assault, rape, kidnap, and being threatened with a weapon ([8,10,41,42]).

Earlier initiation of injecting drug use among this group indicates the need for greater emphasis on early intervention, in order to reduce the likelihood of young people entering sex work and/or developing problematic drug use [11]. For maximum effect, interventions should target several groups at different stages. Considerable research and public interest has been focused upon ways in which substance use among young people may be reduced, and to encourage those who have begun use at an early age to cease or moderate their use. Interventions have involved primary prevention (for example, drug education in schools or general population campaigns) ([43-45]); secondary interventions (such as targeted programs aimed at "at-risk" children) ([46]); and tertiary interventions (most often involving treatment for young persons who have developed problematic use, or interventions designed to reduce the initiation of injecting) ([47-50]).

Patterns of drug use were similar among both SW and N-SW, however results were indicative of heavier use of particular drugs among SW (i.e. ice and benzodiazepines). Due to small numbers of SW reporting recent benzodiazepine injection (n = 4) and ice use (n = 8), findings did not reach significance, and a larger sample size may highlight these trends more clearly. Trends of heavier drug use among SW are consistent with the literature documenting high levels of drug dependence in these groups [2]. The authors (AR and LD) are currently undertaking a study investigating a range of issues (including drug use patterns) among female street based sex workers and results should provide more definitive trends with regard to drug use in this group

Sex workers were more likely to have spent money, and to have spent more money on drugs on the previous day than N-SW, and this is most likely to be due to SW having more disposable income available to them than N-SW. However, it may also be an indicator of heavier drug use.

There were no differences between proportions of SW and N-SW reporting borrowing and lending used needles. Consistent with previous research [2,51], what seemed to be more indicative of the likelihood of borrowing needles was frequency of heroin use; 70% of IDU in the current study (regardless of sex work status) who reported borrowing needles were daily heroin users. People who had used the needle before them were reported as partners or close friends. Likewise, 74% of IDU (regardless of sex work status) who reported lending needles had used heroin on every third day or more (range 72–180 days) in the preceding six months (47% were daily users). These findings suggest that high levels of drug use may play a more important role in decisions to engage in risk taking behaviours than sex work does.

Sex workers were more likely to report injection related problems than N-SW however, given that the majority of SW were female, this finding may be more indicative of gender differences than sex work status *per se*. A paper describing the characteristics of clients attending the Medically Supervised Injecting Centre (MSIC) in Sydney [52] reported that females were twice as likely to report injection related problems than males, a finding that is consistent with other studies [1,8]. This finding is indicative of the need to ensure that these women have access to primary treatment services, and that there are no barriers to such services. Continued education campaigns, outlining strategies to minimise injection related harms also remain a priority.

Overall, these results suggest that the differences among injecting drug users who are sex workers and those who are not, are less striking than the similarities. Drug patterns were generally no different between these groups however, there was some indication of heavier use of crystalline methamphetamine and benzodiazepines among sex workers, and future research examining a larger sample is needed. Risk behaviours and poorer injection related outcomes appeared to be associated with factors other than sex work status (such as frequency of drug use and gender), perhaps suggesting that overall, injecting drug users who are sex workers may be at no greater risk of adverse outcomes (with the exception of the risks involved in street based sex work) than those who are not sex workers. It should be noted however, that this study did not examine condom use among injecting drug users, or the relationship between drug use and the safe outcome of sexual encounters, and these are undoubtedly issues of relevance for injecting drug users who engage in sex work.

Conclusion

Few differences were found in the current sample of regular IDU who engaged in sex work compared with those who did not. There are however, several policy implications arising from differences that were apparent. Firstly, there needs to be an increased focus on more specific programs targeting SW who identify as ATSI, as well as further research into more culturally appropriate drug treatment services for this group. Second, greater emphasis needs to be placed on the continued development of primary, secondary and tertiary intervention programs targeting young people in a range of settings. There are some excellent programs currently available in Australia, and inclusion of more specific education regarding the risks involved in sex work as well as exploration of alternative employment opportunities would prove useful. Access to

primary treatment settings for SW who are IDU is also important given the range of injection related problems they experience. Finally, due to relatively small numbers of IDU in this sample engaging in sex work, further research is required. In response, the National Drug and Alcohol Research Centre is currently undertaking research to assess a range of issues among female street based sex workers in Sydney. Education that targets safe sex practices among sex workers should remain a priority, given the high rate of problems encountered among this group, and the risks they face due to contact with multiple sex partners.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

AR was involved in collecting the data, performing statistical analysis, conducting a detailed literature review and drafting the manuscript. LD suggested the idea for the study and provided detailed structural comment on, and assistance with drafting the manuscript. CB was involved in collecting the data, providing detailed comment on the content, and assistance with drafting the manuscript. All authors read and approved the final manuscript.

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Harm Reduction Journal

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Research

Use of the femoral vein ('groin injecting') by a sample of needle exchange clients in Bristol, UK

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Abstract

Background: Use of the femoral vein for intravenous access by injecting drug users (IDUs) (commonly called 'groin injecting') is a practice that is often observed but on which little is written in the literature. The purpose of this study was to describe self-reported data from a sample of groin injectors on the natural history and rationale regarding their groin injecting, to inform future research and the development of appropriate harm reduction strategies.

Methods: A convenience sample of groin injectors willing to participate in a semi-structured interview were recruited through the Bristol Drugs Project Harm Reduction Service. The interviews were conducted over the period of one week. Data on transition to groin injecting, rationale for use and incidence of problems were collected.

Results: Forty seven IDUs currently injecting in their femoral vein ('groin') were interviewed, 66% (n = 31) male and 34% (n = 16) female. Their mean age was 31 yrs (range 17 to 50 yrs; SD = 7.7). The mean length of time since first injecting episode was 9.6 yrs (range 6 mths to 30 yrs; SD = 7.0). The mean length of time since use of the groin began was 2.6 years (range 1 mth to 15 yrs; SD = 3.3). The mean length of time between first injection and first use of the groin was 7.0 yrs (SD = 7.0). One person had used no other area for venous access prior to using the groin, nine people had used one, nine people had used two, 10 people had used three, five people had used four and 13 people had used more than four areas. The main reason given for starting to inject in the groin was that 'no other sites were left'. However further discussion identified this meant no other *convenient* sites were accessible. Practises such as the rotation of injecting sites, as advocated in many harm reduction leaflets, were reported to be difficult and unreliable. The risk of missing the vein and subsequently losing the 'hit' was considered high. Use of the non-dominant hand to administer injections was problematic and deterred rotation between arms. The groin site was reported to be convenient, provide quick access, with little mess and less pain than smaller more awkward veins. The formation of sinuses over time facilitated continued use of the groin. Approximately two thirds of participants had experienced difficulty gaining IV access at their groin. Common problem included scar tissue occlusion, swelling and pain. Some reported infections and past history of deep vein thrombosis.

Conclusion: Use of the groin was perceived to be convenient by the study group. Problems following safer injecting advice were identified, including dexterity difficulties leading to fear of losing the 'hit'. Health problems at the groin site did not deter use. These results suggest further qualitative work is needed to explore the difficulties in following safer injecting advice in more detail and inform the development of more appropriate advice. Further quantitative work is necessary to establish the prevalence of groin injecting amongst IDUs and the incidence of associated problems. There is a need for a longitudinal study to examine the relationship between injecting technique and loss of patency of veins. If protective factors could be identified, evidence-based safer injecting advice could be established to preserve peripheral veins and reduce use of the groin site, which is high risk and associated with serious adverse consequences.

Background

The physical health complications of injecting drug use are well documented in the literature (e.g.[1-6]). The injections used by injecting drug users (IDUs) are non-sterile and not subject to quality control. This, coupled with frequent, chronic venous administration is associated with damage to the vascular structure. Vascular damage commonly begins with thrombophlebitis, leading to vein sclerosis and loss of patency [1,3], rendering the vein unusable. This leads to the IDU seeking other useable points of intravenous (IV) access.

There is little research literature reporting patterns of vascular access in IDUs. If the natural history of IDU injecting patterns was better understood, effective strategies to protect vascular health could be explored. A paper by Darke et al [7] describes a pattern of use of various injecting sites over time, identified amongst a sample of injecting drug users in Sydney, Australia. The authors report most injectors began their injecting careers using the cubital fossa (inner crook of the arm), with a pattern of progression through forearm (after a median of two yrs from first injection), upper arm (3.5 yrs from first injection), hand (4 yrs from first injection), neck, feet, leg (all 6 yrs after first injection) and finally groin and peripheral digits (both 10 yrs from first injection). This suggests that use of the groin amongst this sample was reserved as a 'last resort' with other points of access being selected first.

The use of the femoral vein in the groin by IDUs is of concern. It is linked with increased risk of vascular complications such as deep vein thrombosis (DVT), leg ulcers and vascular insufficiency. Its close proximity to the femoral artery and nerve also poses the risk of inadvertent trauma to these sites. Arterial injection is associated with arterial spasm and arterial thrombus formation [8].

The literature contains reports of adverse consequences from use of the groin site but little qualitative study of the factors that motivate this practice. The primary purpose of this study was to inform service development at Bristol Drugs Project (BDP) and compare the findings with that of Darke et al[5]. However the findings of this work are of interest to the wider harm reduction community because little is written in the literature about groin injecting. This study begins to shed some light on factors that motivate this practice. It also suggests future areas for research around groin injecting in order to inform the development of evidence-based safer injecting advice.

Methods

Location

This study was undertaken in Bristol, which is the largest city (pop. 382,000) in the South West region of England, UK. Participants were clients of BDP, which is a voluntary sector drug service. BDP is the only needle exchange and harm reduction agency in the city, but there are also pharmacy-based exchanges.

Recruitment

A convenience sampling method was used. Willing participants were recruited from attendees at BDP needle exchange base which is a fixed site service, and the Mobile Harm Reduction Service, which is a vehicle providing outreach needle exchange services across the city. Data was collected over a period of one week in 2004 by the same interviewer in all cases. All clients who used the needle exchange services staffed by the interviewer were invited to take part in the study. Participants were guaranteed strict confidentiality and data was collected anonymously.

Data collection

Data was gathered using a short semi structured interview based on a series of questions derived from previous discussions amongst needle exchange clients and staff. It explored injecting history and whether the person had ever or was currently experiencing problems using their groin. The study was reviewed and approved by the BDP management board. The interview was conducted after the needle exchange transaction was completed. Verbal consent was obtained. Data was recorded on a tick-box data collection form by the interviewer and by additional note writing.

Analysis

Data was coded and input into SPSS for Windows (v. 12, SPSS inc. Illenois, 2003) for analysis where appropriate. Descriptive data was analysed to identify emergent themes.

Results

Incidence of use of the groin and demographics

The interview took approximately 10 minutes. A total of 92 clients were interviewed as part of the wider review and 47 (51%) of these were currently injecting in their groin. None of those who were not injecting in the groin presently had ever done so in the past. Of those injecting in their groin, 66% (n = 31) were male and 34% (n = 16) were female. The mean age of the groin injectors was 31 yrs (SD = 7.7), with the youngest being 17 and the oldest being 50 yrs. Twelve (26%) of the groin injectors were between 17–24 yrs, 29 (62%) were between 25 and 39 yrs and 6 (13%) were between 40–50 yrs.

Length of time injecting

The mean length of time since first injecting episode was 9.6 yrs (SD = 7.0), with the shortest time since first injecting episode being 6 months and the longest time being 30 yrs. Seventeen (36%) had been injecting 5 yrs or less, 12 (26%) had been injecting between 6 and 10 yrs, 10 (21%)

had been injecting 11–15 yrs, 6 (13%) had been injecting 16–20 yrs, one (2%) had been injecting for 25 years and one (2%) for 30 years.

Length of time of groin injecting

The mean length of time since use of the groin site began was 2.6 years (SD = 3.3), with the shortest time being 0.08 years (1 month) and the longest time being 15 years. The mode length of time was 2 years, reported by 6 people (13%).

Time from first injecting episode to first use of the groin

The mean length of time between first injection and first use of the groin for IV access was 7.0 yrs (SD = 7.0). Two people (4%) had been using the groin for IV access since they first began injecting, both were male. One had tried to inject into the arms unsuccessfully prior to using the groin, so switched to the groin straight away. This person was very thin with no visible veins, so chose to use the groin to ensure IV access. The other person had not tried any other injecting sites prior to the groin, as all his associates who were injecting at the time were using the groin, encouraging him not to attempt to try any others first. Twenty five people (53%) had begun using the groin within 5 years from their first injection and 11 (23%) had begun using the groin 5 or more yrs but less then 10 years since their first injection. Eleven people (23%) had begun using the groin 10 or more yrs since their first injection. The longest time between first injection and use of the groin was 23 yrs in a male who had begun injecting 25 yrs ago but only started using the groin 2 yrs ago.

Areas used prior to the groin

People were asked to report which areas they had injected into prior to using the groin. One (2%) person had used no other area for venous access prior to using the groin and had been using this site for 15 years. Nine (19%) people had used one other area and in all cases this was the cubital fossa (inner crook of the arm). Nine (19%) people had used two areas prior to the groin, all of these cases had used the cubital fossa, seven had also used site(s) on the legs, one had used the foot and one had used the neck. Ten (21%) people had used three areas prior to using the groin. Again in all cases the cubital fossa had been used, nine of the ten had used sites on the legs, six had used the feet and five had used the neck. Five (11%) people reported injecting in four areas prior to the groin. All had used the same four areas, which were the cubital fossa, legs, feet and neck. Thirteen (28%) people had used more than four areas prior to the groin and classed themselves as having used 'everywhere'.

Why did you start injecting in your groin?

The main reason given for starting to inject in the groin was that 'no other sites were left'. However as many people had not tried all other sites, this was probed further. Further discussion found that in the majority of cases, no other *convenient* sites were perceived to be accessible. Many reported that practises such as the rotation of injecting sites, as advocated in many harm reduction publications, were found to be difficult and unreliable. The risk of 'losing' an injection (missing IV access) through poor injecting technique was considered to be too big a risk, presumably because subcutaneous and intramuscular drug absorption does not provide the same euphoria. Use of the non-dominant hand to administer injections was also reported to be difficult and deter rotation of injecting sites between arms, or require third party assistance. The groin site was reported by most to be convenient, provide quick access, with little mess and less pain than smaller more awkward veins. The gradual formation of sinuses in the groin over time was reported to further facilitate continued use of this site.

Drugs injected into the groin and equipment used

The most common drug injected by the group was heroin, used by 46 (98%) of interviewees. Nineteen people (40%) injected crack cocaine and eight (17%) injected amphetamine. Twenty four people (51%) currently injected one main drug only into the groin, with 23 injecting heroin and one injecting amphetamine. Twenty people (43%) injected two main drugs into the groin, for 16 of these people their main drugs were heroin and crack cocaine. The remaining four injected heroin and amphetamine. Three people injected three main drugs into the groin and for all these were heroin, crack cocaine and amphetamine. No other drugs were reported to be injected into the groin within the group.

The most common injecting equipment used to access the groin was detachable 1 ml syringes with orange needles (0.5 × 25 mm, 25G) used by 33 people (70%), 11 people (23%) used the same syringes with blue needles (0.6 × 30 mm, 23G) and one person (2%) used green needles (0.8 × 40 mm, 21G). Seven people (15%) used 1 ml insulin syringes. Numbers exceed 100% as four people regularly used more than one type of equipment for groin access.

Condition of the groin site and history of access problems

Participants were asked whether they were currently or had in the past experienced any problems gaining IV access using the groin site. They were also asked to self-assess the current condition of their groin based on a five point Likert scale: *'very poor'*, *'poor'*, *'OK'*, *'good' or 'very good'*.

Approximately one third of people reported never having had a problem gaining IV access at their groin site (n = 16, 34%). This group comprised 11 males and five females. Five described the current state of their groin site as '*ok*',

five said it was '*good*' and six said it was '*very good*'. Their mean length of use of the groin site was 1.1 yrs (SD = 1.2). Approximately two thirds of people had experienced problems with IV access at the groin site on one or more occasions in the past, or were currently experiencing problems (n = 31, 66%). This group comprised 20 males and 11 females. When asked to describe the current condition of their groin two said it was '*very poor*', seven said it was '*poor*', 14 described it as '*ok*', three said it was '*good*' and five said it was '*very good*'. Their mean length of use of the groin site was 3.3 yrs (SD = 3.8).

When asked to describe the types of access and health problems experienced, a common problem reported was hardened scar tissue occluding the site. This was said to be difficult to penetrate and a cause of needles bending and breaking, causing some people to select longer, thicker needles. Another common problem was swellings in the groin area, accompanied at times by pain. Some people reported infections at the injecting site. Some reported having experienced 'blood clots' or 'DVT' (deep vein thrombosis). It is unknown whether these had been medically diagnosed or treated.

Discussion

It is of interest that in the overall sample (n = 92) all those who had tried groin injecting (n = 47) continued to do so, despite two thirds having experienced problems with access and a range of health problems at the site. These included reports of infections, hardened tissue, swelling and DVT, which is consistent with problems described in the literature. Further exploration of factors that discourage use of the groin amongst non groin injectors would be of interest. Comparisons between vein health and injecting practices of groin injectors and those who do not inject in the groin would establish protective factors. A longitudinal study is necessary for this to establish the factors that protect and damage the patency of veins. Modifiable protective factors could inform safer injecting advice. The average length of time of groin injecting amongst the sample was 2.6 years with the longest time being 15 years, illustrating that this site of access can be used for considerable time. The formation of sinuses around hardened scar tissue was seen to be an advantage and facilitated continued use, despite posing the risk of breaking needles. Further work to explore responses to problems with the groin site and long-term consequences would be of interest.

Darke et al [7] reported an average time of 10 years from first injection to use of the groin site in their sample of IDUs in Sydney. In this study the average length of time from first injection to use of the groin site was 7 yrs, with more than half (53%) of participants having begun groin injecting within 5 yrs. One theory for the earlier use of the groin site in Bristol is that the use of acidifiers such as citric acid, necessary to dissolve the brown base heroin common in Western Europe, shortens the usable life of veins. Acidifiers are not used in Australia as street heroin is in a soluble form. However further work would be needed to confirm is this theory is true.

A pattern of use of various sites prior to the groin site was found in the majority in this study, similar to the findings of Darke et al [7]. However in this study there were some for whom rapid progression to use of the groin occurred, for example nine participants had only used one site, the cubital fossa, prior to the groin and a further nine had only used two sites. The qualitative data gathered from the sample illustrated that the groin was viewed as 'easy-to-use' with more security of delivering the injection intravenously than other, more awkward sites. This study showed that the groin site was favoured over others for utility and convenience. Other useable sites did potentially exist in many, such as the cubital fossa of the dominant arm, but were viewed as difficult to use and risked loss of the injection. A need for safer injecting information was highlighted in many in this study and practice within the agency has been developed to address this. Future work should examine decision making around use of the groin and whether information on health risks coupled with support to access more awkward peripheral veins can deter use of the groin. However caution is needed not to promote use of sites that require third party assistance, as this may reduce the level of control the IDU has over the injecting process and increase the risks of transmission of hepatitis C and other blood-borne pathogens.

Several points can be learned from this work to inform the delivery of harm reduction messages to this client group:

1. Recognition of the importance of *utility and convenience* when selecting an injecting site. Had this study not enquired about previous sites used and probed those who said they had 'no other sites' left, it may have been wrongly assumed that they did indeed have no useable sites. The identification of the 'utility and convenience' factor and the difficulties in using the non dominant hand for drug injecting has prompted the authors to consider the implementation of structured safer injecting training for IDUs, in order to deter use of the potentially high risk groin site. Such training, run by experienced nurses or anaesthetists, could develop injecting skills amongst IDUs in order to improve injecting techniques and promote the use of other available peripheral sites on the upper limbs. Such services could be integrated within safer injecting facilities.

2. The data on choice of injecting equipment is encouraging, as the majority of participants used detachable nee-

dles, which are intended for intravenous access. Most also chose to use short needles (orange), which it is believed to reduce the extent of vascular assault when injecting. This practice has been promoted by needle exchange workers locally. However the identified use of insulin syringes and longer needles (e.g. blue) in some is of concern. Insulin syringes are fragile and intended for subcutaneous use only hence carry a risk of breaking, especially if scar tissue forms that is tough to penetrate. Longer needles may increase the assault on the vascular system or increase the risk of injuring the surrounding nerves or arteries.

3. The contribution of the quantities, frequency of injecting and poly drug use to vascular damage should be studied. Due to tolerance to the effects of many psychoactive drugs, injectors often use increasing quantities and inject with increasing frequency as their injecting careers lengthen. Some also progress to poly drug use. Just over half of this sample (51%) injected one drug only, and in all but one cases this was heroin with the remaining case being amphetamine. However of the remaining 49% (n = 23) who injected more than one drug, 19 were injecting crack cocaine. Cocaine is a potent local anaesthetic and could potentially increase the risks of using the groin site (and other sites) due to lack of sensation on injecting. Further work is needed to quantify and explore these risks and also to assess the longevity of intravenous access in relation to single and poly drug use and frequency of use.

This study focused on the practices of groin site injectors in Bristol using the BDP needle exchange services, illustrating past and current injecting practices, identifying learning points for safer injecting advice delivery and future research. A convenience sample was used and the sample size was dictated by willingness to participate in the given time frame of the study. The results should not be extrapolated to the rest of the UK or those not in contact with BDP.

Conclusion

This study found, amongst a convenience sample of IDUs in Bristol, that the average time from first injection to use of the groin site was 7 yrs, with the majority having begun use of this site within five years. Reasons for use of the groin site centred on utility, convenience, ease of use and reduced risk of losing the euphoric effects due to extravenous delivery. Several key points were generated to inform the BDP harm reduction service, including the idea of developing safer injecting workshops for IDUs and encouragement that messages on use of equipment were successful. Several areas for future research have been prompted by this study. Groin site injecting is a risky practice that appears to have had little mention in the literature other than the reporting of case studies. The health risks are significant therefore further work to better understand this practice amongst IDUs and how to deter it would be of benefit.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

The questionnaire was developed on the basis of discussion between the two authors and staff at BDP. JM, who is employed by BDP, conducted the interviews. JS entered and analysed all the data and drafted the first version of this paper. Both authors contributed towards the revision of this paper and production of the final draft.

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Review

The evolutionary origins and significance of drug addiction

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Abstract

By looking at drug addiction from an evolutionary perspective, we may understand its underlying significance and evaluate its three-fold nature: biology, psychology, and social influences. In this investigation it is important to delve into the co-evolution of mammalian brains and ancient psychotropic plants. Gaining an understanding of the implications of ancient psychotropic substance use in altering mammalian brains will assist in assessing the causes and effects of addiction in a modern-day context. By exploring addiction in this manner, we may move towards more effective treatment early prevention, treating the root of the issue rather than the symptoms.

1. Introduction

As we find ourselves in the beginning of a new millennium, we are faced with challenges to our survival as a human population. Some of the greatest threats to our survival are sweeping epidemics that affect millions of individuals worldwide. Drug addiction, although often regarded as a personality disorder, may also be seen as a worldwide epidemic with evolutionary genetic, physiological, and environmental influences controlling this behavior. Globally, the use of drugs has reached all-time highs. On average, drug popularity differs from nation to nation. The United Nations Office on Drugs and Crime identified major problem drugs on each continent by analyzing treatment demand [1]. From 1998 to 2002, Asia, Europe, and Australia showed major problems with opiate addiction, South America predominantly was affected by cocaine addiction, and Africans were treated most often for the addiction to cannabis. Only in North America was drug addiction distributed relatively evenly between the use of opiates, cannabis, cocaine, amphetamines, and other narcotics. However, all types of drugs are consumed throughout each continent. Interpol reported over 4000 tons of cannabis were seized in 1999, up 20% from 1998, with the largest seizures made in Southern Africa, the US, Mexico, and Western Europe [2]. Almost 150 tons of cocaine is purchased each year throughout Europe and in 1999 opium production reached an estimated 6600 tons, the dramatic increase most likely due to a burst of poppy crops throughout Southwest Asia. This rapid increase in drug use has had tremendous global effects, and the World Health Organization cited almost 200,000 drug-induced deaths alone in the year 2000 [3]. The Lewin group for the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism estimated the total economic cost of problematic use of alcohol and drugs in the United States to be $245.7 billion for the year 1992, of which $97.7 billion was due to drug abuse [4]. The White House Office of National Drug Control Policy (ONDCP) found that between 1988 and 1995, Americans spent $57.3 billion on drugs, of which $38 billion was on cocaine, $9.6 billion was on heroin and $7 billion was on marijuana.

Among the different approaches for diagnosis, prevention, and treatment of drug addiction, exploring the evolutionary basis of addiction would provide us with better

understanding since evolution, personality, behavior and drug abuse are tightly interlinked. It is our duty as scientists to explore the evolutionary basis and origins of drug addiction so as to uncover the underlying causes rather than continuing to solely focus on the physiological signs and global activity of this epidemic. Too often the treatment of addiction simply works to alleviate the symptoms of addiction, dealing with overcoming the physiological dependence and working through withdrawal symptoms as the body readjusts to a non-dependent state of homeostasis. However, we must not only concentrate on this aspect of addiction when considering global treatments and preventative programs. We must take into consideration that it is not purely the physiology of addiction we are battling.

Drug addiction is thought of as an adjunctive behavior, or a subordinate behavior catalyzed by deeper, more significant psychological and biological stimuli. It is not just a pharmacological reaction to a chemical but a mode of compensation for a decrease in Darwinian fitness [5]. There are three main components involved in substance addiction: developmental attachment, pharmacological mechanism, and social phylogeny including social inequality, dominance, and social dependence [6]. Developmental attachment created by environmental influences, such as parental care or lack thereof, may influence children's vulnerability to drug addiction. Evolutionarily speaking, children that receive care that is more erratic may focus more so on short-term risks that may have proved to be an adaptive quality for survival in ancient environments. Compounding that attachment, the pharmacological mechanism describes the concept of biological adaptation of the mesolimbic dopamine system to endogenous substance intake. These factors combined with the influence of social phylogeny create a position for predisposition to drug addiction. They attribute to the common belief that many substances of abuse have great powers to heal, and that is often the driving motivation for overuse and addiction. Evolutionary perspective shows an intermediate and fleeting expected gain associated with drug addiction correlated with the conservation in most mammals of archaic neural circuitry [7], most often being a falsified sense of increased fitness and viability related to the three components of drug abuse [5,8]. The chemical changes associated with fitness and viability are perceived by mammals as emotions, driving human behavior.

Human behavior is mediated primarily by dopaminergic and serotonergic systems, both of ancient origins probably evolving before the phylogenetic splits of vertebrates and invertebrates [9]. 5-HT (serotonin), stimulated by a small range of drugs, mediates arousal. It is believed to be inhibited by hallucinogens and also helps control wanting for ethanol and cocaine consumption. The cortico-mesolimbic dopaminergic system, on the other hand, is believed to be the target of a wide range of drugs, including marijuana and cocaine, increasing the transmission of dopamine to the nucleus accumbens [10]. This system mediates emotion and controls reinforcement, and is the primary pathway acted on by antipsychotic drugs such as chlorprothixene and thioridazine. Problematic use of drugs develops into addiction as the brain becomes dependent on the chemical neural homeostatic circuitry altered by the drug [7]. No matter the theory of drug addiction, there remains one constant: withdrawal is inevitable. As a drug is administered continuously and an individual becomes addicted, the brain becomes dependent on the presence of the drug. With an absence of the drug, withdrawal symptoms are experienced as the brain attempts to deal with the chemical changes. There are believed to be evolutionary origins of drug addiction, which will be discussed further, as well as a link between physiological addiction and the evolution of emotion.

2. Drugs distribution and use in ancient environments

When examining the distribution of natural drugs in ancestral environment we see that there was often a limited amount of resources, meaning there was little overactivity of salient (wanting) behavior, causing no need for the adaptive development within the cortico-mesolimbic dopaminergic system of a built-in regulatory system of salience [6,11]. Genetic and environmental factors increasing substance abuse liability may have been of no consequence in ancestral environments due to their limitations. We originally relied on the limitations of ancient environments in that same manner, so when we are introduced to excessive amounts of salience in modern environment, we have no internal control. Basically, our ancient-wired bodies have not yet evolved to adapt to modern environment, leaving us vulnerable to addiction.

A common belief is that psychotropic plant chemicals evolved recurrently throughout evolutionary history [12]. Archaeological records indicate the presence of psychotropic plants and drug use in ancient civilizations as far back as early hominid species about 200 million years ago. Roughly 13,000 years ago, the inhabitants of Timor commonly used betel nut (*Areca catechu*), as did those in Thailand around 10,700 years ago. At the beginning of European colonialism, and perhaps for 40,000 years before that, Australian aborigines used nicotine from two different indigenous sources: pituri plant (*Duboisia hopwoodii*) and *Nicotiana gossel*. North and South Americans also used nicotine from their indigenous plants *N. tabacum* and *N. rustica*. Ethiopians and northern Africans were documented as having used an ephedrine-analog, khat (*Catha edulis*), before European colonization. Cocaine

(*Erythroxylum coca*) was taken by Ecuadorians about 5,000 years ago and by the indigenous people of the western Andes almost 7,000 years ago. The substances were popularly administered through the buccal cavity within the cheek. Nicotine, cocaine, and ephedrine sources were first mixed with an alkali substance, most often wood or lime ash, creating a free base to facilitate diffusion of the drug into the blood stream. Alkali paraphernalia have been found throughout these regions and documented within the archaeological record. Although the buccal method is believed to be most standard method of drug administration, inhabitants of the Americas may have also administered substances nasally, rectally, and by smoking.

Many indigenous civilizations displayed a view of psychotropic plants as food sources, not as external chemicals altering internal homeostasis [12]. The perceived effects by these groups were tolerance to thermal fluctuations, increased energy, and decreased fatigue, all advantageous to fitness by allowing longer foraging session as well as greater ability to sustain in times of limited resources. The plants were used as nutritional sources providing vitamins, minerals, and proteins rather than recreational psychotropic substances inducing inebriation. Due to limited resources within ancient environments, mammalian species most probably sought out CNS neurotransmitter (NT) substitutes in the form of psychotropic allelochemicals, because nutrient NT-precursors were not largely available in the forms of food. Therefore, drugs became food sources to prevent decreased fitness from starvation and death. It is believed that early hominid species evolved in conjunction with the psychotropic flora due to constant exposure with one another. This may be what eventually allowed the above civilizations to use the flora as nutritional substances, therefore increasing both their fitness and viability.

Over time, psychotropic plants evolved to emit allelochemical reactivity to deter threats from herbivores and pathogenic invasions. These allelochemical responses evolved to imitate mammalian NT so as to act as competitive binders and obstruct normal CNS functioning. The allelochemical NT analogs were not anciently as potent as forms of abused substances used in modern environments, but instead were milder precursors that had an impact on the development of the mammalian CNS. The fit of allelochemicals within the CNS indicates some co-evolutionary activity between mammalian brains and psychotropic plants, meaning they interacted ecologically and therefore responded to one another evolutionarily. Basically, series of changes occurred between the mammalian brain and psychotropic plants allowing them affect one another during their processes of evolving. This would have only been possible with mammalian CNS exposure to these allelochemicals, therefore to ancient mammalian psychotropic substance use. The evidence for this theory is compelling. For example, the mammalian brain has evolved receptor systems for plant substances, such as the opioid receptor system, not available by the mammalian body itself. The mammalian body has also evolved to develop defenses against overtoxicity, such as exogenous substance metabolism and vomiting reflexes.

3. Evolutionary advantage of emotion

The evolution of brain systems brought about indicators of levels of fitness in the form of chemical signals perceived as emotion [7,8,11,13]. These emotions help direct physiology and behavior of an individual towards increasing Darwinian fitness. They essentially were tools chosen for by the mechanisms of natural selection. Positive emotions, such as euphoria and excitation, motivate towards increased gain and fitness state, whereas negative emotions, for instance anxiety and pain, evolved as defenses by motivating towards managing potential threats or decreases in fitness level.

Mammalian drive to escape danger is fueled by a capacity to feel negative emotions [14]. Negative emotions can be defenses, and in their suppression we may find ourselves unarmed and unprepared to deal with problems much more detrimental than the original warning emotions. Those individuals that lack the capacity to suffer, including the inability to experience pain, are unable to put up basic physiological and behavioral defenses and often find themselves dying at relatively young ages. Negative emotions (pain, fear, stress, anxiety, etc.) have evolved in mammals to allude to even the slightest, most harmless potential indicator of a more serious problem, leading to what may be known as a modern-day personality disorder. Personality disorders can be characterized as anything from over-anxiety to schizophrenia [13]. Many emotional disorders that drugs mask, such as anxiety disorders, develop from the ancient adaptive mechanisms expressed by the evolved mode of personality, and may in fact not be disorders but hypersensitive neural adaptations. Since personality evolved as an information gating mechanism to transmit culture among people, as well as within an individual from external environmental stimuli to internal neural circuitry for personal regulation, negative emotion may be simply transmitted and can be enhanced through personality [15].

There are two defined types of positive emotion [7]. The first includes feelings of anticipation and excitation induced by a promise of an increase in fitness (+ Positive Affect, or PA), while the second includes emotions of relief and security due to a removal of a threat to fitness (- Negative Affect or NA). + PA emotions fall into the behavioral activation system, or the BAS [16]. The BAS attempts to propagate positive emotions and appetitive condition-

ing, resulting in a motivation to reach goals and, essentially, the positive affect. – NA emotions fall into the behavioral inhibition system (BIS), which attempts to regulate and compensate for negative emotions and aversive conditioning. As mammals expose themselves to fitness-increasing situations and avoid fitness-decreasing situations, they tend to motivate towards pleasure-inducing, or + PA, stimuli that indicate these increases in fitness. Even if unrelated to fitness in modern environment, emotions continue to process events in the same archaic way. Many pleasant feelings may now not indicate an increase in fitness at all, but the evolutionary brain may still correlate the two.

Modern environments include medical and social technologies that bring comfort and longer living than was experienced in ancient environment, so much of modern human emotion does not serve the same function as was evolutionarily performed. As our emotions become less indicative of fitness and more superfluous, there comes to be confusion within the intended signals of emotion. The pursuit of "happiness" involves gain, and while evolutionarily these gains were increased fitness, the emotion of happiness is no longer directly related to fitness. While one may become happy due to a casual and pleasing relationship, the euphoric emotion may have evolutionarily corresponded with an indication of successful reproduction and therefore a gain in fitness and viability. This can also be applied to the euphoria associated with wealth, which in ancient environments may have been an indicator of increases in fitness due to plentiful food and water resources, but now may indicate status.

4. Effects of drugs on emotion

Psychoactive drugs induce emotions that at one point in mammalian evolutionary history signaled increased fitness, not happiness [11]. In ancient environments positive emotion correlated with a sign of increased fitness, such as successful foraging sessions or successful breeding. Mammals would feel euphoric only during times where fitness levels were high, the euphoria being indicative of survival and not a superfluous feeling of "happiness." Mammals would otherwise feel negative emotions when fitness levels were low. The effect of many psychoactive substances provided the same euphoric feeling, and may have had some increasing effects on fitness levels in ancient mammalian species. However, drug use today does not carry the same predicted increases in fitness, and in fact may act as a pathogen on neural circuitry. Yet, these same drugs continue to target archaic mechanisms of the brain with the intent of inducing positive emotion, essentially blocking many neurological defenses.

Drugs that stimulate positive emotion virtually mediate incentive motivation in the nucleus accumbens and the neural reward system [11]. Modern drug addiction fundamentally indicates a false increase of fitness, leading to increasing drug abuse to continue gain, even if the gain is realized as being false. This is the quintessential paradox among drug addicts. The motivation towards gain begins to take precedence over adaptive behaviors among addicted individuals. Some stimuli that simulate increased fitness may become greater priorities than true adaptive stimuli necessary for increased fitness, such as food and sleep [7]. Individuals can, in turn, decrease their fitness by ignoring necessary behaviors for survival and fitness and focusing on a false positive emotion. The appetite for a drug may also override the drive to consummate, causing a drastic decrease in viability. Their emotional systems are now concentrated on drug-seeking rather than survival.

In modern humans, drugs that may block negative emotions may be more useful than the endurance of ancient warnings of harm, like pain and fever [11]. Certain drugs can aid in pathology treatment, and while negative emotions may have been entirely necessary for the survival of ancient mammals, they may no longer be exclusively indicative of nociceptive or otherwise harmful stimuli [11,13]. Hypersensitivity of our bodies' defense mechanisms has evolved, leading to unnecessary negative emotions for non-nociceptive stimuli as preventative defense. When there is a threat towards an individual's fitness, the modern body often responds with several different warning signs, perhaps several different types of negative emotions (pain, fever, and hallucination, for example). Therefore, blocking a few of the negative emotions will ideally not disrupt the message. I emphasize the word "ideally" for this is not always the case. Frequently there are situations in which drugs that block these defenses, such as anxiolytics, may contribute to the decreases in fitness by temporarily removing a small negative emotions but leaving the individual vulnerable to a much larger harm [17].

Emotional disposition has shown to specifically correlate with problematic use of alcohol [16]. If the perceived emotion before alcohol consumption is negative, the individual most likely is drinking to cope, with less control over his/her own use. In the case of a positive disposition before consumption, the user is said to drink to enhance, with more greatly controlled use of the substance. Since alcohol consumption alters normally functioning cognitive processes, it does not prove to be equal to evolutionarily superior internal coping mechanisms. Instead, alcohol mediates not only negative feelings by their suppression, but also encourages the habituated continuance of positive emotion. Recovering alcoholics often document reasons of relapse surrounding the drive to

compensate for negative feelings, resulting in a motivation to cope and therefore to drink.

5. Physiology of addiction and reward

Mammalian brains work heavily on a motivational system with two types of motivation: like and want [11]. Like is controlled by opioid and brain stem systems, and refers to pleasure upon receiving a reward, whereas want (salience), mediated by the cortico-mesolimbic dopaminergic system, is an anticipatory motivation to pursue reward. We receive "pleasure" through intracellular signaling of adaptive chemical pathways of a reward system that bring our attention to what we need. The nucleus accumbens (NAcb) and globus pallidus are involved in reward pathways for alcohol, opiates, and cocaine [18]. NTs involved in these pathways are dopamine (primarily within the NAcb and hippocampus), serotonin (hypothalamus), enkephalins (ventral tegmental area and NAcb), GABA (inhibitory – ventral tegmental area and NAcb), and norepinephrine (hippocampus). When there is a disturbance within the reward intracellular cascade, a chemical imbalance occurs that triggers negative emotions to be indicative of the disturbance. This is referred to as "reward deficiency syndrome," where the chemical imbalances within the intracellular cascade manifest themselves as behavioral disorders, indicating a deficiency within the adaptive reward pathway. Drug addiction may initially cause and then further proceed to exacerbate "reward deficiency syndrome."

Another theory of drug addiction, the "drugs for reward" theory, states that addiction is the malfunctioning collision of both motivational systems (like vs. want), stimulating pursuit of a substance that most probably no longer provides pleasure and in fact may be pathogenic [11]. Different drugs stimulate different types of positive emotion [7]. Opioids contribute to – NA states, while dopamine-releasing drugs contributes to + PA states. In this theory, dopamine is believed to mediate a state of addiction through the activation of the cortico-mesolimbic system passing through the ventral tegmental area to the nucleus accumbens, all regulating reward-seeking motivation. It is also involved in withdrawal from psychostimulants, as the sudden removal of a chemical drug stimulant from the body causes a massive alteration within the dopaminergic system, leading to negative emotions. Opioids are believed to mediate the consumption of reward, with opioid addiction following a well-defined route: 1) first ensues as a pleasure-seeking behavior, 2) tolerance to the opioid builds and pleasure resulting from drug use reduces, yet use is increased in an attempt to regain the hedonic pleasure, and 3) withdrawal may occur with a cessation of the opioid substance differing from withdrawal from psychostimulants, but also leading to negative emotions. With the "drugs for reward" theory, adaptive hard-wired (physiologically determined to serve a specific role) dopamine function is believed to induce a feeling of reward for a particular action that indicates an increase in the level of fitness of an individual [6]. It encourages the continuation of habit that increases dopamine release, therefore leading to a perception of increased levels of fitness (although often falsely when referring to drug use). Problems with this theory are encountered when we take into consideration that dopamine also signals negative reinforcement, not just positive reinforcement through reward. Dopamine is therefore referred to as simply altering an emotional state from one to another, even if it means going from positive emotion to negative emotion.

Dopamine is otherwise argued to be a mediator of salience [6]. Although dopamine is believed to control the cortico-mesolimbic system, it does not rule the consummatory/satiatory/seeking behavior in this particular theory. It instead mediates appetitive/approach behavior, placing an importance on things by demanding attention on either their strength (positive emotion) or their potential harm (negative emotion), then increasing the motivation to move towards an action to change, not to satiate (stop). If upregulated, a feeling of "wanting" is induced for a specific substance, leading to addiction with overuse [10]. This explains dopamine action as integrated activity rather than hard-wired function, and best explains how drug addiction is obsessively saliatory without ever reaching satiation. This concept is referred to as IS, or incentive salience. Earlier theories discussed unconditioned stimuli, such as a specific drug, as stimulants of an unconditioned response of neural regulation [19]. In this model, the drug is not the unconditioned stimulus causing guaranteed changes of the CNS, as was previously thought, but the chemical activity caused by the drug within the CNS is the unconditioned stimuli. The brain then becomes adapted to the chemical response of the drug, producing a salient conditioning response within the brain's association context. The prefrontal cortex directs associative context, in turn regulating the cortico-mesolimbic dopamine system to induce an amalgamation of abnormal behavior and salience; the individual is now driven by uncontrolled craving and wanting. We originally relied on the limitations of the ancestral environment to be the regulatory influences as we used drugs for food, and our bodies still remain adapted to ancestral environments in that aspect. Therefore, when we are introduced to excessive amounts of salience, we have no internal control.

Candidate gene polymorphisms within the above pathway receptors may contribute to substance abuse [20]. Substance abuse tendencies and liabilities (the vulnerability to a disease and the possibility of becoming affected due to genetic and environmental susceptibility) may be

inherited through phenotypic liabilities. The expression of substance abuse is therefore dependent on this phenotypic liability and environmental influences. The phenotypic liability may be a result of a genetic polymorphism within the DRD2 dopamine receptor gene (A.sub.1 allele) [18]. The DRD2 dopamine receptors are targeted by antipsychotics [9]. This particular receptor gene polymorphism correlates with alcohol and substance addiction as well as obsessive compulsive disorders. The DRD4 dopamine receptor has documented polymorphisms within a 48 base pair variable number tandem repeat, and also correlates with substance addiction, for it is believed to be involved in reducing sensitivity to methamphetamines, alcohol, and cocaine. In Israeli and Arab heroin-dependent populations, there was data collected displaying a DRD4 gene polymorphism in exon 3 consisting of seven-repeat alleles not present in non-addicted control groups. This was also observed in a study of heroin-addicted Han Chinese. In a study done with Native American alcoholics, a linkage on chromosome 11 near the DRD4 gene was documented. With these phenotypic liabilities, an individual may be considered to be addicted to a substance after passing a threshold of which there is no diagnostic or solid definition. Dependence is often continued because of temporary positive effects with the denial of the more permanent, negative pharmaceutical effects. There have been documented significant relationships between drug and alcohol dependence and certain genetic factors, with the same genetic correlation to smoking, displaying a significant cohesion between different substance use disorders. Individuals addicted to substances may, therefore, be genetically predisposed to the situation and are then pushed past threshold by environmental stimuli.

6. Social-cultural impact

We have discovered that the nature of addiction is not solely based on free will to use, or an individual's conscious choice to use, but may have deeper influences. The nature of drug addiction is three-fold: biological, psychological, and social. Although humans may be biologically and psychologically predisposed to drug use and addiction, they may often be driven towards that state by social and cultural influences. To what extent environmental stimuli affect a person's vulnerability to addiction is unknown and may be varying. However, we cannot ignore the great impact of environmental and mental stimuli in the progression towards addiction. It has been found that certain environmental variables breed higher vulnerability [21]. Family dysfunction and disruption, low social class rearing, poor parental monitoring, and rampant social drug-use exposure may greatly contribute to an individual's movement from substance abuse predisposition to addiction. Both acute and chronic stresses have been linked with substance abuse as well, with acute stress being one of the main influences of relapse in rehabilitated drug addicts. The widespread availability of drugs in certain areas also may affect susceptibility [22]. This is exceptionally notable in low socioeconomic areas in which overcrowding and poverty have been associated statistically with increased substance abuse. In addition, repeated exposure to successful high-status role models who use substances, whether these role models are figures in the media, peers or older siblings, is likely to influence children and adolescents. Similarly, the perception that smoking, drinking or drug use is standard practice among peers also serves to promote substance abuse.

When examining drug addiction through this triple-perspective, we are forced as a global society to re-evaluate the criminalization of drug use and addiction throughout world. In general, social drug policies have been conservative and unyielding. Most often, addicts are left to feed their addiction through illegal means of acquiring drugs. As a result of conservative influence in national politics, a "tough on drugs" philosophy that stresses zero tolerance, law enforcement, and abstinence has been adopted. This philosophy neglects the need for medical and psychological treatment of substance addiction.

Columbia University's National Center on Addiction and Substance Abuse report over 75% of state penitentiary inmates require drug abuse treatment, but the disconcerting fact is that under 20% of those individuals actually are provided with proper treatment programs [23]. If treatment is provided, it is often times extremely short-term and non-intensive, and even less frequently offered to jail inmates. In addition, the Bureau of Justice Statistics stated that only 1 in 10 state prison inmates were provided drug abuse treatment in 1997, down from the 1 in 4 inmates offered treatment in 1991. This is astonishingly low, considering the correctional institution holds more substance abusers than any other national institution. Also commonly noted are the incredibly high comorbidity rates between mental illness and drug addiction within the prison system. It is vital to view substance addiction as a medical condition when dealing with criminal charges, making sure that addicts are provided with treatment for the root of their affliction rather than simply punishing the active symptoms of addiction.

7. Conclusion

Drug use and addiction seem to have been a part of mammalian society since ancient times. Researchers have evidence and reason to believe that the evolution of mammalian brains and psychotropic plants might be related to each other, connected by ancient drug use. Regardless of the possible co-evolution of drugs and mammalian brains, abuse of drugs inevitably causes long-term disadvantages. Drug addiction could be extremely detrimental for any individual, not only because of the

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Educate Yourself

FACTS about DRUGS: MARIJUANA

WHAT IS IT?

Marijuana is a plant (cannabis sativa, cannabis indica) that contains a psychoactive chemical, tetrahydrocannabinol (THC), in its leaves, buds and flowers. Concentrations of THC may range widely from plant to plant, but most contain 2-5 percent THC. An identical plant known as hemp (cannabis sativa L) is used commercially to make, among other things, paper, clothing and building materials. Hemp contains less than 1 percent THC. Hashish, which contains marijuana flower resin, typically has 8-14 percent THC (Earleywine 2002).

SLANG

Pot, weed, herb, grass, chron or chronic, blunt, Mary Jane, boom, sticky green, Bombay, Indo, frosty leaves, spliff, dagga, bomb, shwag, dank, tress, doja.

AVAILABILITY & USE

Usually smoked, marijuana can be hand-rolled in a cigarette, called a "J" or "joint," or stuffed into an emptied cigar, called a "blunt." It may also be smoked in pipes or "bongs" made of glass, metal or wood. Sometimes it is brewed as a tea or mixed into food (such as brownies).

Marijuana is easily accessible in urban, rural and suburban areas and is typically purchased in "nickels" ($5 bags), "dimes" ($10 bags), "dubs" or "twamps" ($20 bags), "quarters" ($40 bags). A dime bag typically contains enough marijuana for one joint.

RATES OF USE

Marijuana is the most commonly used illicit drug. By the time they graduate from high school, almost half of America's teenagers admit to experimenting with marijuana.

In 2002, 19 percent of 8th graders, 39 percent of tenth graders, and 48 percent of twelfth graders reported trying marijuana once or more (Johnston 2003). Use peaks between the ages of eighteen and twenty-five (Goode 1999; Earleywine 2002).

THE RISKS

Roughly 10 percent of regular users report some problem related to marijuana, including feeling dependent or unable to limit consumption (Earleywine 2002). These problems may be more likely among younger, less experienced users.

Over time, heavy marijuana smoking has the potential to cause respiratory problems, especially when combined with cigarette smoking (Earleywine 2002). Although, most people who smoke marijuana are not heavy, long-term users, according to a British medical journal, The Lancet, "the smoking of cannabis, even long term, is not harmful to health" (Horton 1995).

Marijuana is illegal and the legal consequences of marijuana use can include arrest, prosecution, and incarceration. In addition, escalating zero tolerance policies and random drug testing may lead to loss of driving privileges, federal higher education loans, and participation in extracurricular activities.

Reducing risks associated with marijuana use requires moderation; never driving or operating machinery while under the influence; never using marijuana at work, school, or while participating in any other serious activity; and not inhaling deeply and holding smoke in the lungs for a long period of time. To completely eliminate risk, one should refrain from using marijuana.

THE HIGH

The effects of marijuana depend on the amount of THC absorbed and the method used (whether smoked or eaten). Smoking marijuana sends THC quickly through the lungs to the blood stream and into the brain (Earleywine 2002). The effect is almost immediate and typically lasts between one and two hours. When eaten, THC is absorbed more slowly, but the effect may be more intense and last much longer (Zimmer and Morgan 1997).

Marijuana users report a wide variety of reactions, from peacefulness and euphoria to feeling silly or paranoid. Physical response includes reddening of the eyes, a slight increase in heart rate, and dryness of the mouth. Although users frequently experience hunger (the "munchies"), there is no drop in blood sugar levels.

SIGNS OF USE

The smell of marijuana, like the scent of burning leaves, may be the clearest indication of use. There are no fixed behavioral indicators, although some users may display giddiness, reddened eyes, clumsiness, short-term memory lapses, increased appetite, and lethargy.

RECOMMENDED READING

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ABOUT SAFETY FIRST

Safety First, a project of the Drug Policy Alliance, is dedicated to providing parents of adolescents with honest, science-based information about drugs and drug education. For more information, visit www.safety1st.org.

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Educate Yourself

FACTS about DRUGS: COCAINE

WHAT IS IT?

Cocaine comes from the leaves of the coca plant that grows in the Andes Mountains in South America. Many indigenous tribes in this region continue to chew coca leaves to produce a mild, stimulating feeling.

Scientists isolated cocaine from coca leaves shortly before 1860. Until the start of the 20th century, this new "wonder drug" could be found in countless medicines to treat a variety of ailments. It was also included in many of the popular health tonics of the day, including Coca-Cola.

Cocaine hydrochloride (HCL) is a fine white powder, bitter to the taste. When inhaled or injected, it causes a numbing effect. "Crack" is a smokeable form of cocaine made into small lumps or "rocks." Crack is made by processing cocaine HCL with ammonia or sodium bicarbonate (baking soda) and water and heated to free the cocaine alkaloid "base" from the salt (hydrochloride). This process enables the drug to burn efficiently, providing more cocaine-containing smoke. The term, "crack," refers to the cracking sound when the mixture is smoked (DrugScope).

SLANG

Coke, C, snow, nose candy, sugar, blow, toot, bump, Charlie, white lady, dust, base, freebase, rock, crack.

AVAILABILITY & USE

Most users sniff or snort cocaine HCL, although it can also be injected or smoked. Crack is smoked.

Since the 1980s, cocaine has become more plentiful and cheaper. Although cocaine HCL and crack remain widely available throughout most of the United States, the cost and purity of both drugs vary.

In the year 2000, cocaine HCL was reportedly selling for $20-50 a gram in New York City compared to $100 or more in Atlanta, Honolulu, and Washington D.C. (Community Epidemiology Work Group 2000). Crack rocks tend to be sold in sizes of approximately

THE RISKS

Over time, many people who use cocaine on a daily basis develop a tolerance to the drug, meaning they will need more and more to get the same initial effect. This, combined with the fact that cocaine and crack are so short acting, often leads the user to compulsively chase after the initial "high."

Strokes, seizures, and heart attacks, although rare, have been reported. Individuals with a known (or unknown) heart condition are most at risk. Chronic, heavy use of cocaine/crack can result in weight loss, sexual problems, disordered thinking, extreme mood swings, paranoia, aggression, and psychosis. Many such chronic, heavy users become physically run down, which leaves them susceptible to illness and depression (DrugScope).

Although snorting cocaine poses less risk than smoking or injecting, repeated sniffing may still damage the membranes of the nose. Smoking cocaine/crack can damage the lungs, as well as leading to more compulsive use, due to its faster absorption. Injecting cocaine poses a number of serious risks. In addition to impurities delivered directly into the blood stream, if needles or other injection materials are shared, users are at greater risk for transmitting or acquiring HIV infection/AIDS and/or Hepatitis B and C.

Many myths surround crack use. Despite media reports claiming crack to be addictive with a single use, the best data, from government-sponsored surveys, have consistently shown that less than one out of four people who ever tried the drug used it more than once (Szalavitz

(continued next page)

AVAILABILITY & USE (cont.)

0.1 to 0.2 grams, which sell for approximately $10 and $20, respectively (ONDCP 2002).

In 2002, 23 percent of eighth graders, 32 percent of tenth graders, and 45 percent of twelfth graders reported that crack was "fairly easy" or "very easy" to obtain (Johnston 2003).

RATES OF USE

Eight percent of high school seniors reported using cocaine at least once during their lifetime. This is markedly lower than the peak of 17 percent for the senior class of 1985. In terms of crack, 3 percent of eighth graders, 4 percent of tenth graders, and 4 percent of twelfth graders reported using the drug at least once during their lifetime in the same survey (Johnston 2003).

THE HIGH

Cocaine increases stamina, alertness, heart rate, and energy, and temporarily decreases fatigue, causing users to feel exhilarated, euphoric, and confident. The duration of cocaine's effects depends on the route of administration. The high from snorting may last 15-30 minutes (Goode 1999).

Smoking crack delivers large quantities of the drug to the lungs, producing effects comparable to intravenous injection. These effects are felt almost immediately after smoking, are very intense, and last 5-10 minutes.

SIGNS OF USE

A cocaine or crack user may appear to have more energy than normal, talk, fidget, and clench his or her jaw more than usual. They may also appear more confident and alert. Common physical effects include dry mouth, sweating, and loss of appetite and sleep. Heart and pulse rate also increase.

Frequent or heavy use can lead to compulsive behavior, extreme anxiety, agitation, paranoia, and even hallucinations. These effects typically subside as the drug is eliminated from the body. The after-effects of heavy cocaine/crack use can include weight loss, depression, and fatigue (DrugScope).

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THE RISKS (cont.)

1999). Media stories of a "crack baby" epidemic, which began to appear in the late 1980s, are now considered greatly exaggerated. Research now indicates that other factors, such as poverty, are responsible for many of the ills previously thought to be associated with crack use (Morgan and Zimmer 1997).

Criminal penalties for possession and sale of powder cocaine are severe. Much higher penalties exist for possession and sale of crack, despite the fact that, pharmacologically, they are the same drug. Simple possession of five grams of crack cocaine yields a five-year mandatory minimum sentence for a first offense; it takes 500 grams of powder cocaine to prompt the same sentence (US Sentencing Commission 2002).

The most reliable way to reduce or eliminate the risks of using cocaine/crack is to abstain.

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Educate Yourself

FACTS about DRUGS: ECSTASY

WHAT IS IT?

Ecstasy, chemically known as MDMA (3,4-methylenedioxymethamphetamine), is a pill taken orally. The pills are available in different colors and imprints, or "brands." In some cases, MDMA is sold in powder form. Synthesized in a laboratory, Ecstasy is a stimulant that is closely related to methamphetamine and MDA (methylenedioxyamphetamine).

Because Ecstasy is illegal and, therefore, unregulated, it is impossible for the average user to know what is contained in a "dose." In fact, not all Ecstasy pills are MDMA. In addition to MDMA, Ecstasy pills may contain varying levels of MDA, stimulants such as speed or caffeine, or anesthetics such as Ketamine or dextromethorphan (DXM) (Henry 2001).

Testing kits are available (http://www.dancesafe.org) that can determine whether pills contain MDMA or other Ecstasy-like substances, but not the actual dosage or the presence of other contaminants (Holland 2001).

SLANG

E, X, XTC, Adam, rolls, candy, enhancements, vitamin E. Ecstasy may also be referred to by its "brand" — the color or imprint on the pill, such as doves, blue dolphins and yellow gators.

AVAILABILITY & USE

In the annual Monitoring the Future survey (http://www.monitoringthefuture.org), 59 percent of twelfth graders reported that Ecstasy is "fairly easy" or "very easy" to get. Particularly popular within the club and rave scenes, Ecstasy tablets sell for approximately $20 on the West Coast and $25 on the East Coast. A typical dosage of 100 mg to 125 mg lasts four to six hours.

RATES OF USE

In 2002, 4 percent of eighth graders, 7 percent of tenth graders and 11 percent of twelfth graders used Ecstasy at least once in their lifetime (Johnston 2003).

THE RISKS

Some users report feeling depressed up to forty-eight hours after the experience. With prolonged use, the perceived benefits of use can be harder to attain. Though not physically addictive, there can be a desire to "chase the high," resulting in increasing dosages and frequency of use. With increased use, users often feel tired, have an achy jaw, and report less euphoria (Jansen 2001). Those who want to avoid depression and burnout practice moderation in both frequency of use and dose level (Beck and Rosenbaum 1994).

Although few adverse effects have been reported, hyperthermia—a dangerously high increase in body temperature—is the most common problem related to Ecstasy. Hyperthermic reactions result from dancing long and hard in an overheated room without replenishing fluids, which is why users take breaks and consume fluids such as water or Gatorade (Holland 2001). Overdose cases are extremely rare and, like hyperthermia, are linked to dehydration or mixing drugs, rather than as a direct result of using Ecstasy.

The long-term effects of Ecstasy are still under investigation. Some researchers believe that permanent brain changes may result from overuse, but the evidence is not conclusive (Grob 2000). Some studies suggest that Ecstasy affects serotonin and dopamine levels, but it is unclear what impact this will have in the long term (Baggott and Mendelson 2001). Ecstasy can cause arrhythmia of the heart and those experiencing hypertension and heart disease should avoid using it (Goode 1999).

To eliminate risks associated with Ecstasy use, the drug should be avoided.

THE HIGH

Users describe themselves as feeling open, accepting, wholesome, beautiful, unafraid, and connected to the people around them. Typically used in social settings, Ecstasy is considered a sensuous (though not necessarily sexual) drug. Its effects are stimulated by visuals, sounds, smells, and touch. About forty-five minutes after taking Ecstasy, or "dropping," users feel relaxation and clarity when they start to "roll." Some users experience nausea at the outset.

SIGNS OF USE

Ecstasy users' pupils dilate, often making them very sensitive to light. Jaw-clenching and tooth-grinding are also observable effects. Senses are heightened, and Ecstasy users often want to intensify the feeling by dancing, talking, and touching. Users often display overt signs of affection, which explains its nickname, the "hug drug.".

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Educate Yourself

FACTS about DRUGS: GHB

WHAT IS IT?

GHB (gamma-hydroxybutyrate) is a depressant that affects the central nervous system. The drug is commonly associated with the dance community and is considered by some as an alternative to Ecstasy (http://www.safety1st.org/educate/drugfacts/ecstasy.html).

GHB may come in powder or capsule form, but is most commonly available as a liquid in small bottles.

SLANG

G, Liquid Ecstasy (also Liquid X and Liquid E), blue verve, Georgia Home Boy, goop, EZLay, GBH, Gamma-oh, GBL, blue nitro, blue thunder.

AVAILABILITY & USE

GHB is usually taken as a liquid and is odorless, but slightly salty. It is typically purchased in small bottles that contain approximately ten "hits," for $20-25 (DrugScope 2003). Dosage amounts range from half a teaspoon to a full teaspoon or capful. Most users report drug onset at ten minutes to one hour, with the duration of the high lasting two to three hours.

RATES OF USE

GHB was initially used to treat insomnia and by body builders to enhance physique (Addiction Recovery Institute). It then slowly moved into recreational communities. GHB is a relatively new drug and seems to be most popular among the younger "club" population, though government statistics are not available.

(continued next page)

THE RISKS

The dosage range for GHB is very narrow making "recreational" effects and an "overdose" vary by only a small amount. Furthermore, because GHB is an unregulated drug, concentrations vary widely, so users cannot know each time what a "safe" dosage may be.

Users who do not feel the effects within an hour sometimes take more, believing the original dose was too weak. Since drug onset varies, users are more susceptible to overdose when this occurs. When a person overdoses on GHB, they may become unconscious (GHB coma) and unable to respond. Overdose can also depress breathing to dangerous levels and cause vomiting (DrugScope 2003).

Very heavy users may become physically dependent on GHB and experience withdrawal symptoms, including a strong desire for the drug, anxiety, increased heart rate, vertigo, insomnia, and intense delirium and agitation. These symptoms may last two weeks or more (Miotto 2001).

Recently, GHB has been highly publicized as a "date rape drug" because it can make a person unconscious or unable to move properly. Since liquid substances such as GHB can be poured into the drink of an unsuspecting individual, it can be dangerous to leave a drink unattended or accept a drink from a stranger.

GHB is an illegal substance and possession, use, and/or sales can result in arrest and incarceration.

Reducing risks associated with GHB use requires not taking GHB with alcohol or other depressants. To eliminate risk, the use of GHB should be avoided.

THE HIGH

GHB has effects that are very similar to alcohol, but without the next day's hangover, making the drug attractive to some users. Users say they feel uninhibited, relaxed, and euphoric, with a greater appreciation of music and dancing. Higher dosages increase these effects and may also cause nausea, dizziness, impaired mobility, and slurred speech.

SIGNS OF USE

Since GHB's effects are similar to alcohol, users may appear to be drunk. They may look relaxed, more sociable and talkative, dance more, appear euphoric, and their motor skills may be impaired. With large doses, users may get dizzy, nauseous, become incoherent, experience uncontrolled physical movements, or vomit.

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Educate Yourself

FACTS about DRUGS: HEROIN

WHAT IS IT?

Heroin is processed from morphine, a naturally occurring opiate extracted from the seedpod of certain varieties of poppies. Street heroin is rarely pure and may range from a white to dark brown powder of varying consistency. Such differences typically reflect the impurities remaining from the manufacturing process and/or the presence of additional substances. These "cuts" are often sugar, starch, powdered milk and occasionally other drugs, which are added to provide filler.

Heroin is manufactured from opium poppies cultivated in four primary source areas: South America, Southeast and Southwest Asia, and Mexico. High purity, South American (Colombian) white heroin has become the most prevalent type available in the United States, particularly in the Northeast, South, and Midwest (ONDCP 2003). The particular form known as "black tar" from Mexico, a less pure form of heroin, is more commonly found in the western and southwestern United States. This heroin may be sticky like roofing tar or hard like coal, with its color varying from dark brown to black.

SLANG

Smack, dope, horse, H, China white, black tar, chiva, junk, skag, brown sugar, Lady Jane, stuff.

AVAILABILITY & USE

Heroin can be sniffed, smoked, or injected. Mexican black tar heroin, however, is usually injected (once dissolved) or smoked because of its consistency.

Street level heroin typically sells for around $10 per dose, although the actual quantity of real heroin contained in such "doses" varies widely across time and place. In general, however, the price of heroin has declined and the purity increased over the past several years (DEA).

(continued next page)

THE RISKS

Injection poses the greatest risk of lethal overdose by enabling large amounts of heroin (and additional contaminants if any) to enter the blood stream at once. Smoking and snorting heroin can also result in overdose, especially if a non-tolerant user ingests a large amount of potent heroin and/or combines it with other depressant drugs, such as alcohol. Symptoms of a heroin overdose include slow and shallow breathing, convulsions, coma, and possibly death.

The use of "dirty" or shared needles when injecting heroin can spread deadly infectious diseases such as HIV and Hepatitis B and C. Injecting drugs and/or sharing needles can contribute to other diseases and conditions that may be serious or even life threatening, including endocarditis, embolism or blood clot, botulism, tetanus, and flesh-eating bacteria. Finally, injecting may cause abscesses (a painful skin inflammation) that, in turn, may result in blood poisoning (NIDA 2000).

Some individuals have been attracted to snorting or smoking heroin in the mistaken belief that these routes will help them avoid addiction. Regular use, however, will result in tolerance and dependence. Some addicts continue using heroin simply to stave off withdrawal.

Heroin is an illegal substance and conviction for possession and/or sale of the drug can result in severe criminal penalties. The complications associated with the typical addict lifestyle can, and often do, lead to poor physical health.

The most reliable way to avoid heroin's risks is to refrain from use.

AVAILABILITY & USE (cont.)

Sixteen percent of eighth graders, 20 percent of tenth graders, and 29 percent of twelfth graders surveyed in 2002 reported that heroin was "fairly easy" or "very easy" to obtain (Johnston 2003).

RATES OF USE

Media accounts over the past decade have cited the increasing use of heroin, particularly among youth and young adults, as a result of greater availability and lower costs throughout much of the country (Inciardi 1998).

However, heroin use remains very low among youth in America. Survey results in 2002 revealed that 2 percent of eighth graders, tenth graders, and twelfth graders reported using heroin at least once during their lifetimes (Johnston 2003).

THE HIGH

Heroin and other opiates are sedative drugs that slow body functioning. Users describe a feeling of warmth, relaxation, and detachment, with a lessening of anxiety. Physical and emotional aches and pains are diminished. These effects appear quickly and can last for several hours, depending on the amount of heroin taken and the route of administration. Initial use can result in nausea and vomiting, but these reactions fade with regular use.

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SIGNS OF USE

A heroin user may appear drowsy and "nod off," throw up, appear itchy, or have pinpoint pupils. Other effects include loss of appetite, sleep disruption, slowed breathing, sexual dysfunction, and constipation.

Heroin addicts experiencing withdrawal will typically experience unpleasant, flu-like symptoms. They may vomit, sweat profusely, experience stomach cramps, overall body pains, diarrhea, runny nose, hot and cold flashes, depression, and irritability. Heroin withdrawal, though variable, tends to begin about eight hours after last use, continues between three days and a week, and is most severe on the second and third days (Harm Reduction Coalition 2001).

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Educate Yourself

FACTS about DRUGS: INHALANTS

WHAT IS IT?

Although other drugs can be inhaled, the term "inhalants" is typically applied to substances that are rarely, if ever, taken by any route other than inhalation. Well over 1,000 different household and commercial products can and have been intentionally sniffed for an intoxicating effect. Precise categorization of inhalants is difficult since the broad range of chemicals found in this diverse grouping of products may have different pharmacological effects.

Four general categories of inhalants can be described based on the form they are typically found in various products: volatile solvents, aerosols, gases, and nitrites (NIDA 2000; NDIC 2001).

Volatile solvents: Liquids that vaporize at room temperatures if left in unsealed containers (e.g., paint thinners and removers, gasoline, glues, correction fluids).

Aerosols: Sprays that contain propellants and solvents such as toluene (e.g., spray paints, vegetable oil sprays for cooking, fabric protector sprays).

Gases: Medical anesthetics (e.g, ether, chloroform, halothane, nitrous oxide/laughing gas) and gases used in household or commercial products (e.g., butane lighters, propane tanks, whipped cream dispensers, refrigerants).

Nitrites: A special class of inhalants that act primarily to dilate blood vessels, relax the muscles and are used to enhance sexual experiences (e.g., cyclohexyl nitrite, amyl nitrite, and butyl nitrite).

SLANG

Solvent inhalants: glue, air blast, poor man's pot.
Nitrous oxide: nitrous, laughing gas, whippets, buzz bomb, hippie crack.
Nitrites: poppers, snappers, locker room, rush, climax.

Common terms associated with the use of inhalants include: huffing, bagging, sniffing, glading.

THE RISKS

Because inhalant intoxication typically lasts only a few minutes, users frequently seek to prolong the high by continuing to inhale repeatedly over the course of several hours. With successive inhalations, users can suffer loss of consciousness and death. Following heavy use of inhalants, users often feel drowsy for several hours and experience a pronounced headache.

Sniffing highly concentrated amounts of the chemicals in solvents or aerosol sprays can cause heart failure or death, especially when fluorocarbons or butane-type gases are involved. This syndrome is often referred to as "sudden sniffing death." Additionally, high concentrations of inhalants can lead to the displacement of oxygen in the lungs and central nervous system resulting in death by suffocation. Deliberately inhaling fumes from a plastic bag placed over the head or in a closed area greatly increases the chances of suffocation.

Additional acute dangers include choking from inhalation of vomit after inhalant use and injuries sustained from motor vehicle accidents and other untoward events (ONDCP 2003; Sharp and Rosenberg 1996).

Chronic exposure may produce significant damage to the brain and other parts of the central nervous system as well as other organs of the body including the heart, lung, liver, and kidneys. Although some inhalant-induced damage is at least partially reversible following discontinuation of use, many syndromes caused by prolonged overuse are believed to be irreversible (Sharp and Rosenberg 1996).

(continued next page)

AVAILABILITY & USE

Easy accessibility, low cost, and ease of concealment make inhalants one of the first substances tried by many youth. Common ways of using various inhalants include sniffing or "huffing" (inhaling through the mouth) directly from product containers, such as rubber cement or correction fluid, sniffing fumes from plastic bags over the head, or sniffing cloth saturated with the chemical(s).

Substances may also be inhaled directly from an aerosol can or out of alternative containers such as a balloon filled with nitrous oxide. Nitrous oxide is abused more frequently than any other gas. It is readily obtainable from whipped cream dispensers or small sealed vials called whippets, which are sold at raves or drug paraphernalia stores (NDIC 2001).

RATES OF USE

In 2002, nearly 23 million Americans ages 12 and older reported using an inhalant at least once in their lifetime (SAMHSA 2003). Typically, the first use of inhalants occurs between late childhood and early adolescence.

Inhalant use is typically concentrated in the younger age groups. Specifically, 4 percent of eighth graders, 2 percent of tenth graders, and 2 percent of twelfth graders had used inhalants in the past month. Fifteen percent of eighth graders, 14 percent of tenth graders, and 12 percent of twelfth graders reported using an inhalant in their lifetime. (Johnston 2003).

THE HIGH

Inhalants are rapidly absorbed through the lungs into the bloodstream and quickly distributed to the brain and other organs. Although the chemical substances found in inhalants may produce somewhat different effects, most of these products provide a rapid high that resembles alcohol intoxication. As such, the user will often experience excitation, euphoria, disinhibition, slurred speech, light-headedness, lack of coordination, and dizziness.

Inhaled nitrites differ somewhat in that they dilate blood vessels, increase heart rate, and produce a sensation of heat and excitement that can last for several minutes. Other effects can include flushing, dizziness, and headache. Unlike other inhalants, which are used for their intoxicating effects, nitrites are used primarily to enhance sexual pleasure and performance (Sharp and Rosenberg 1996).

SIGNS OF USE

Signs of a person using inhalants often resemble those of excessive alcohol use: drunk or disoriented behavior, slurred speech, irritability, and hangovers. In addition, an inhalant user may also have chemical odors on breath or clothing, paint or other stains on face, hand, or clothes; and finally, may possess paraphernalia such as paint or solvent containers and chemical-soaked rags or clothing (NIDA 2000).

THE RISKS (cont.)

Reducing risk requires getting plenty of fresh air after sniffing solvents to flush the chemical(s) out of the system. In addition, a user should NEVER: use inhalants near open flames or sparks due to their high flammability; put one's head in plastic bags containing solvents due to the possibility of asphyxiation; sniff solvents while driving, operating machinery, or engaging in other hazardous activities requiring good reflexes, coordination, and attention; breath nitrous oxide directly from a pressurized tank or for more than a few minutes at a time; or expose the eyes to liquid nitrites. Finally, inhalants should not be mixed with other drugs (particularly alcohol and other depressants) and 911 should be called immediately if someone has overdosed on inhalants (Weil and Rosen 1998).

To eliminate risk, one should abstain from using any form of inhalants.

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Educate Yourself

FACTS about DRUGS: KETAMINE

WHAT IS IT?

Ketamine is a "dissociative anesthetic," meaning it causes users to feel detached or disconnected from their pain and environment. The drug's effects are similar to phencyclidine (PCP).

Available in pill, powder and liquid form, Ketamine is a regulated substance used for medical purposes, including veterinary anesthesia. Its distribution is closely monitored and possession for non-medical uses is punishable by law.

SLANG

K, Special K, vitamin K, Ketalar, Ketaset, Lady K. Ketamine users may refer to the experience and/or effect of the drug as tripping, K-ing or the K-hole.

AVAILABILITY & USE

Ketamine is more easily available outside of the United States where violations are less severely punished. In the United States, it cannot be sold over-the counter or produced, distributed, or possessed by anyone using it for non-medical purposes. A typical dose costs $20-25 (Drug Enforcement Administration 2001).

Recreational users of Ketamine sometimes inject or drink the liquid. More often they cook it into a white powder for snorting. When swallowed, Ketamine produces physical effects of pain killing, numbing, and sedation. Depending on the method of ingestion, the effects of Ketamine can be felt within four to twenty minutes (DanceSafe).

RATES OF USE

During the last two decades, Ketamine's popularity as a potent psychedelic increased when it appeared in the electronic music scene. In 2002, 1 percent of eighth graders and 2 percent of tenth and twelfth graders had tried Ketamine at some point during the past year (Johnston 2003).

THE RISKS

According to reports from the Drug Abuse Warning Network (DAWN) forty-six deaths were reported by American medical examiners in connection with Ketamine from 1994 through 1999. It is easy to become injured when inebriated or in the "K-hole" (see Slang). These accidents can be fatal.

A new user of Ketamine may not be prepared for its powerful psychedelic effects.

Ketamine can be psychologically compelling and lead to dependence. Frequent use can cause disruptions in consciousness and lead to neuroses or other mental disorders (Jansen 2001).

Ketamine has been labeled a "date-rape drug," because under the influence a person can become unconscious or unable to move, therefore unable to respond to an attack.

Illegal use of Ketamine can result in long prison terms.

Reducing risk requires not taking Ketamine alone or with strangers; choosing a safe environment (away from bodies of water, heights, fire, and motor vehicles); not mixing the drug with depressants such as alcohol, benzodiazapines, opiates, or GHB; avoiding injection or using Ketamine if a heart condition or glaucoma exists; using moderation; and calling 911 immediately if there are signs of problems (Jansen 2001).

To eliminate risk associated with Ketamine use, unapproved use should be avoided.

THE HIGH

The effects of Ketamine vary depending on the dosage (DrugScope). In small doses it causes a dreamy floating feeling. The user will experience a distancing from their environment and body. Hands and feet will feel numb and can be difficult to manipulate.

When under the influence, emotions can fluctuate quickly. Users may be inclined to get up and dance, but higher doses will make it difficult to move. The inability to move is referred to as being in a "K-hole" (see Slang) (DanceSafe).

Very high doses cause a person to become anesthetized or lose consciousness. They will not wake up—even if they become injured, because they are not aware of their body or their surroundings. They may experience vivid and powerful psychedelic effects (Jansen 2001). Some people may not remember their experiences.

SIGNS OF USE

A person who has taken or been given Ketamine will be very clumsy—dangerously so—even more so than someone who is very drunk, because he or she may feel stimulated and free from bodily danger. Ketamine users may express excitement and amazement one moment and completely different emotions the next. They may display slurred speech, say odd things, and express confusion. Their heart rate may increase.

A large amount of Ketamine will result in the user not being able to move. They may collapse and remain prone. They might appear to be awake but unresponsive, or appear lifeless. Vomiting is possible.

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Educate Yourself

FACTS about DRUGS: LSD

WHAT IS IT?

LSD (lysergic acid diethylamide) is one of the most potent mind-altering drugs known—oral doses as low as 30 micrograms (millionths of a gram) are capable of producing effects lasting several hours. An odorless and colorless substance, LSD is manufactured from lysergic acid, a compound found in ergot, a fungus that grows on rye and other grains.

SLANG

Acid, doses, blotter, blotter acid, windowpane, microdot, trips, **L**ucy in the **S**ky with **D**iamonds.

AVAILABILITY & USE

LSD is almost always taken by mouth. The strength of LSD samples obtained from illicit sources in recent years has almost invariably ranged from twenty to eighty micrograms of LSD per dose. This is far less than the levels reported during the 1960s and early 1970s when dosages typically ranged from 100 to 200 micrograms or higher per unit (DEA 2000).

Although sometimes available as "microdot" tablets or gelatin "windowpanes," LSD is most commonly sold as "blotter acid." This form typically consists of blotter paper soaked in

LSD and perforated into small squares. Unique designs on the sheets and individual doses identify the various forms of LSD available on the street at any particular time (DEA 2000).

RATES OF USE

According to the National Survey on Drug Use and Health, 10 percent of Americans ages 12 and older reported having used LSD at least once in their lifetime (SAMHSA 2003). Data from an annually administered survey of students across the country reveals that LSD use has declined from peak levels observed in the mid-1990s.

(continued next page)

THE RISKS

Past fears of chromosome and brain damage have been largely refuted by many studies assessing these concerns. The risk of death from overdose is virtually nonexistent—there remains no conclusive evidence of any fatalities despite ingestion (often accidental) of dosages several hundred times the effective amount (Henderson and Glass 1994).

The actual risks posed by LSD are predominantly psychological in nature. Acute negative experiences ("bad trips") are certainly the most significant concerns associated with LSD use. Bad trips are much more likely to occur among first-time users, particularly when large dosages are ingested in inappropriate settings. Unpleasant or frightening experiences are more likely if the user is already anxious (about what will happen, for example) or depressed. Such an individual may become panicky and suffer paranoia—particularly in unfamiliar, intense, or chaotic environments (Strassman 1984).

Given the highly suggestible nature of the LSD experience, it is perhaps not surprising that the number of reported bad trips increased markedly during the media blitz of the late 1960s, which was fueled by dire warnings. After media coverage died down at the close of the decade, so did the number of negative experiences. This occurred despite the fact that the total number of LSD users continued to increase well into the 1970s. An increasingly informed user culture combined with predictably smaller dosage units of street LSD underlie the relatively low incidence of bad trips ending up in emergency rooms observed today (Grinspoon and Bakalar 1997).

(continued next page)

RATES OF USE (cont.)

In contrast to the 9 percent of high school seniors in 1996 who reported having used LSD in the past year, only 4 percent did likewise in 2002, the lowest percentage seen in this survey, which was first given in 1975 (Johnston 2003).

THE HIGH

The LSD experience is often unpredictable and varies greatly depending on dose level, how the user feels and the situation or environment they are in. The effects typically begin within thirty to ninety minutes following ingestion and may last up to twelve hours. The physical effects are surprisingly minimal given the intensity of the psychological experience.

Users often report visual effects such as intensified colors, distorted shapes and sizes, and movement in stationary objects. Distortion of sound and changes in the sense of time and place are also common. Sensory perceptions sometimes blend in a phenomenon known as synesthesia, in which an individual seems to hear or feel colors and see sounds.

Emotional reactions while under the influence of LSD can run the gamut from extremely positive to extremely negative – sometimes even within the same "trip." Some individuals claim that they become more aware of themselves and others and describe LSD trips as being similar to a religious or spiritual experience. Feelings of being separated from the body are also common (Grinspoon and Bakalar 1997).

SIGNS OF USE

The relatively mild physical effects typically observed include dilated pupils, moderate increases in heart rate, blood pressure and body temperature, sweating, loss of appetite, sleeplessness, dry mouth, and tremors. Individuals may also display a wide range of emotional reactions within the same LSD trip. Difficulties in communicating and interacting with others frequently occur.

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THE RISKS (cont.)

Nevertheless, the use of LSD is often associated with a significant and unpredictable risk of "going crazy" as well as a haunting fear of permanent brain damage. Reviews of the clinical literature suggest that chronic problematic effects, when they do occur, are most often linked to psychological instability that was present prior to LSD use. Comprehensive reviews of LSD used in research settings during the 1950s and 1960s have consistently found extremely low incidences of acute and chronic problems among individuals lacking pre-existing severe psychopathology (Presti and Beck 2001; Strassman 1984).

The phenomenon of LSD "flashbacks" continues to evoke considerable anxiety. Although the incidence and perceived danger of flashbacks has often been overstated, particular concern has focused on the development of "hallucinogen persisting perception disorder" (HPPD) in some users. This condition appears to be a real but very rare occurrence among LSD users. HPPD has received only limited study to date, and its claimed association with LSD use is confounded by polydrug use as well as other variables (Grinspoon and Bakalar 1997; Myers et al. 1998).

Following their extensive review of the literature concerning adverse reactions attributed to LSD use, Henderson and Glass observe that, "In the popular mythology, LSD users are prone to violent outbursts and bizarre behavior. They may jump off buildings believing they can fly, stare at the sun until they go blind, tear their eyes out, or even become homicidal… The literature on LSD does document some bizarre episodes. Given the millions of doses of LSD that have been consumed since the 1950s, however, these are rare indeed."

Finally, LSD is an illegal substance and conviction for possession and/or sale of the drug can result in severe criminal penalties.

Short of abstinence, reducing risk requires not taking LSD unless one is in good physical and psychological shape. If trying the drug for the first time, LSD should be taken with an experienced companion. It should also only be taken in comfortable settings on occasions when one has no responsibilities for at least the next twelve hours. Caution should be used to avoid taking too high a dose. LSD should not be taken with other drugs. Abstinence is the most reliable way to eliminate risk associated with LSD use.

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Educate Yourself

FACTS about DRUGS: METHAMPHETAMINE

WHAT IS IT?

Methamphetamine is an illegal stimulant in the amphetamine family, which also includes drugs commonly available by prescription, such as Ritalin, Adderall, and Dexedrine.

There are a variety of forms of methamphetamine. "Speed" typically refers to methamphetamine salt (HCI powder), which is typically a white or off-white powder. "Crystal" refers to the freebase form of the drug, which appears as crystal chunks resembling shards of glass. "Ice" is a higher-grade form of crystal meth that has undergone a chemical process making the end product look like glass (Roberts 1995).

SLANG

Speed, meth, crank, crystal, glass, ice, chalk, Tina.

AVAILABILITY & USE

Due to a booming illegal manufacturing industry, methamphetamine has become increasingly available throughout much of the United States. Use is highest in Hawaii, and metropolitan areas of the western United States where methamphetamine use has been popular for many years. Recently, its use has spread to other areas, including the East Coast.

Methamphetamine can be swallowed, snorted, smoked and injected by users. Due to its "speedy" and long lasting effects, methamphetamine has become one of the drugs of choice within the club and rave scenes. The street price, though dependent on location and purity, ranges from $400 to $3,000 per ounce (Drug Enforcement Administration). The effects usually last from four to eight hours or more, depending on dosage.

RATES OF USE

According to both law enforcement and treatment providers, most methamphetamine users are either college students or blue-collar/unemployed workers in their 20s or 30s (Koch Crime Institute).

(continued next page)

THE RISKS

Although oral use is the least dangerous method of ingestion, most users rely on snorting, smoking, or injection. Smoking methamphetamine takes effect immediately and easily increases chances of addiction (DanceSafe). In addition, smoking methamphetamine exposes the user to a wide range of known and unknown hazards contained in the inhaled smoke. Injecting methamphetamine is associated with many risks, including addiction, overdose, damage to veins, bloodstream infections and the transmission of infections, such as HIV and Hepatitis B and C, through sharing syringes.

From 1994 to 1998, 2,601 deaths associated with methamphetamine were reported by selected medical examiners (Drug Abuse Warning Network 2000). Overdoses of methamphetamine can cause seizures, heart attacks, and strokes. Of primary concern is the damaging effect on the mind and body with continued heavy use.

Increased or prolonged use of methamphetamine can cause sleeplessness, loss of appetite, increased blood pressure, paranoia, psychosis, aggression, disordered thinking, extreme mood swings, and sometimes hallucinations. Many users become physically rundown, which leaves them susceptible to illness. The discontinued use of methamphetamine by heavy users will create withdrawal symptoms, including severe depression, lethargy, anxiety, and fearfulness (Goode 1999).

Some studies indicate that very large doses of methamphetamine may cause damage to dopamine, a chemical found in the brain that regulates mood and memory. The research is ongoing since studies are still inconclusive (Ernst 2000).

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RATES OF USE (cont.)

The highest rates of usage are among men and women between the ages of eighteen and twenty-three.

According to a 2002 national survey, 4 percent of eighth graders, 6 percent of tenth graders, and 7 percent of twelfth graders have tried methamphetamine at least once in their lifetime (Johnston 2003).

THE HIGH

No matter how the drug is injested, the methamphetamine user experiences a "rush" or feeling of euphoria and self-confidence. The effects of methamphetamine commonly include accelerated heart rate and blood pressure, increased alertness, loss of appetite, increased energy, desire for physical activity and inability to sleep (Goode 1999). Such effects are less pronounced with oral use and in lower dosages.

SIGNS OF USE

Frequent and/or heavy users can exhibit pupil dilation, constant talking, sweating, tooth grinding, restlessness and tremors. A methamphetamine user can become edgy or irritable and frequently shows signs of anxiety. Some heavy users become paranoid and may experience hallucinations, particularly auditory.

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THE RISKS (cont.)

Methamphetamine is an illegal substance and possession and/or sales can result in long prison terms.

Reducing risk requires avoiding methamphetamine if heart conditions exist; discontinuing long term, heavy use to avoid paranoia, psychosis, and other adverse side effects; and not mixing methamphetamine with other drugs (particularly alcohol and other stimulants).

To eliminate risk, methamphetamines should not be used.

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Educate Yourself

FACTS about DRUGS: OXYCONTIN

WHAT IS IT?

OxyContin is an extended-release, pain-relief medication, effective for twelve hours. It contains oxycodone, a compound found in other prescription drugs such as Percodan, Percocet, and Tylox. The effects of oxycodone are similar to those of other opiates such as morphine, hydromorphone (Dilaudid), and hydrocodone (Vicodin).

First introduced in 1996, OxyContin tablets are color coded according to dosage. By combining high doses of oxycodone with a delayed release mechanism, OxyContin allows patients with moderate to severe pain to obtain sufficient pain relief for longer periods of time using fewer pills. The target population includes cancer patients, those suffering from terminal illness and other chronic severe pain syndromes (Purdue Pharma 2003).

SLANG

Oxy, OC, legal heroin, "hillbilly heroin", Oxy-40, Oxy-80, Oxycotton.

AVAILABILITY & USE

OxyContin is available by prescription, in 10 mg, 20 mg, 40 mg, and 80 mg tablets. In 2002, 1.9 million Americans reported using OxyContin non-medically at least once in their lifetime (SAMHSA). Those misusing OxyContin may buy the drug illegally or practice "doctor shopping" or prescription tampering to procure the drug. Sold illegally, the street price for OxyContin ranges from $5-12 for a 10 mg pill (DEA 2003).

Illicit users of OxyContin sometimes defeat the delayed-release mechanism by crushing and then chewing, snorting, smoking, or (rarely) injecting the drug to get "high." OxyContin misuse is believed to be highest in rural areas characterized by job scarcity, high unemployment, and relatively large elderly and disabled populations (Irwin 2003). The states with the highest misuse rates are West Virginia, Pennsylvania, Kentucky, and Virginia.

THE RISKS

Dependence on OxyContin is rare for those users who use the drug as recommended. With continued long-term use, however, even appropriate medical users may experience tolerance, and require higher doses to achieve pain relief.

As with heroin and other opiates, users of OxyContin may grow increasingly dependent upon its desirable effects and experience profound withdrawal symptoms if the drug suddenly becomes unavailable. Heavy OxyContin users undergoing sudden withdrawal will experience symptoms similar to those observed in heroin addicts—vomiting, profuse sweating, stomach cramps, overall body pains, diarrhea, runny nose, tearing, hot and cold flashes, depression, and irritability.

For those suffering from OxyContin dependence physicians can temper withdrawal symptoms by slowly discontinuing the drug and methadone and other treatments are often effective.

Ingesting, inhaling or injecting crushed OxyContin tablets can result in overdose death, particularly in the non-tolerant user. By defeating the time-release mechanism, users expose themselves to the high doses of oxycodone (ranging from 10 mg to 80 mg) contained in each tablet. DEA officials have claimed that OxyContin may have played a role in 464 overdose deaths for the years 2000 and 2001 (Meier 2002).

However, a recent review of 1,243 oxycodone-related deaths in twenty-three states in August 1999 through 2002 revealed only twelve to have been caused solely by OxyContin. In almost all of these cases (97 percent), the victims

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RATES OF USE

In 2001, more than 7.2 million prescriptions were written for OxyContin. Since then, the number of prescriptions has dropped somewhat as a result of the negative publicity surrounding non-medical OxyContin use and increased physician apprehension (Ammann 2003).

A 2002 study of American students found that 1 percent of eighth graders, 3 percent of tenth graders and 4 percent of twelfth graders reported non-medical use of OxyContin within the past year (Johnston 2003).

THE HIGH

When used properly, OxyContin is very effective in relieving moderate to severe pain. As with other opium-derived drugs, side effects may include possible nausea and vomiting, drowsiness, slowed breathing, cough suppression, and constipation.

If crushed and then snorted, smoked, or injected, OxyContin users typically describe the resulting high in language similar to that used for explaining the effects of heroin and other opiates (see http://www.safety1st.org/educate/drugfacts/heroin.html). Users note a feeling of warmth, relaxation, and detachment, with a lessening of anxiety. Physical and emotional aches and pains seem to fade away. These effects start quickly and can last for several hours, depending on the amount of OxyContin taken and the route of administration.

THE RISKS (cont.)

had at least three drugs in their system—most commonly, benzodiazepines (tranquilizers such as Valium), alcohol, antidepressants, and other narcotics (Drug Policy Alliance 2003).

In highlighting the actions of those misusing OxyContin, media sensationalism and governmental overreaction threaten to trample hard fought gains in the field of pain management. For example, the DEA administrator has suggested rolling back quotas to 1996 levels, which would be a 95 percent cutback from current levels. As a result of such actions, individuals who truly need the drug medically would suffer (Bock 2001).

Outside of proper medical usage, possession and sale of OxyContin carries substantial criminal penalties.

Reducing risk requires not taking OxyContin unless it is prescribed; using the drug only for the condition prescribed; storing the medicine in a safe place and out of the reach of children; taking the medicine intact to avoid short-circuiting its time-release mechanism; and avoiding combining OxyContin with alcohol and/or other depressant drugs. In the event of an emergency, call 911 immediately and tell paramedics exactly what was used.

SIGNS OF USE

A person using OxyContin may be sleepy, itchy, have pinpoint pupils, and breathe slowly. Some users may also experience nausea and vomiting similar to that observed with other opiates. Insomnia, loss of appetite, chills, abdominal pain, and anxiety are also possible.

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Educate Yourself

FACTS about DRUGS: TOBACCO

WHAT IS IT?

The tobacco plant (Nicotiana tabacum) is a stimulant that contains several psychoactive drugs. Tobacco products are produced from the dried leaves of this plant that contain 4,000 chemicals, 40 of which are known carcinogens and toxins. Nicotine is the most toxic and addictive of all (Weil and Rosen 1998).

A naturally occurring colorless liquid that turns brown when burned, nicotine acquires the odor of tobacco when exposed to air. It is readily absorbed regardless of whether tobacco is smoked, chewed, or snorted in the form of snuff.

Nicotine is arguably the most addictive and certainly the most frequently used drug in the United States and throughout the world. Cigarettes, in particular, are quickly habit forming and quitting can be harder than giving up alcohol or heroin. (Kozlowski et al. 1989).

SLANG

Cigarettes: cigs, coffin nails, butts, fags, smokes
Cigars: stogies
Smokeless Tobacco: chew, chaw, dip, spit tobacco.

AVAILABILITY & USE

The way tobacco is used is key to how strong the physical dependence becomes. Cigarette smoking has been, by far, the most popular means of ingesting nicotine since the early 1900s. Taking a drag on a cigarette provides almost instantaneous distribution of nicotine through the blood, reaching the brain and affecting the central nervous system within ten seconds. Cigar and pipe smokers, on the other hand, typically inhale little or no smoke so, as with smokeless tobacco use, nicotine is primarily absorbed through the mucosal membranes of their mouths (NIDA 2001).

Though it is illegal to sell tobacco products to minors, 5,000 young Americans decide each day to try their first cigarette.

THE RISKS

While it is possible that smoking a few cigarettes a day might not present a significant health risk to most people, there are relatively few smokers who are able to limit their cigarette consumption. The vast majority of current smokers smoke almost a pack or more of cigarettes a day–a level that dramatically increases the risk for many diseases (Krogh 1991).

Cigarette smoking is by far the leading cause of preventable death in the United States. Tobacco use is estimated to kill at least 430,000 U.S. citizens each year. This is more than alcohol, cocaine, heroin, homicide, suicide, car accidents, fire, and AIDS combined. The direct and indirect costs attributable to smoking are estimated at $138 billion dollars per year (NIDA 2001).

A vast number of studies have demonstrated that pack-a-day smokers, when compared to people who never smoked, have ten times the risk of lung cancer and twice the risk of heart disease. In addition, smoking also causes other lung diseases such as chronic bronchitis and emphysema and it has been found to exacerbate asthma symptoms in adults and children. Smoking is also associated with cancers of the mouth, pharynx, larynx, esophagus, stomach, pancreas, cervix, kidney, ureter, and bladder (Napier 1997).

Second-hand smoke is a major source of indoor air contaminants and is estimated to cause approximately 3,000 lung cancer deaths per year among nonsmokers and contribute to as many as 40,000 deaths related to cardiovascular disease. Additionally, dropped cigarettes are the leading cause of residential fire fatalities, leading to more than 1,000 such deaths each year.

(continued next page)

RATES OF USE

An estimated 72 million Americans ages twelve or older (31 percent of the population) are current users of one or more tobacco products. Approximately 61 million smoked cigarettes, 13 million smoked cigars, 8 million used smokeless tobacco, and 2 million smoked pipes (SAMHSA 2003).

In 2002, smoking rates among students reached the lowest levels since 1975: 11 percent of eighth graders, 18 percent of tenth graders, and 27 percent of high school seniors reported smoking during the past month. The decrease in smoking among young Americans corresponds with increasing percentages of students citing "great risk" associated with smoking one or more packs of cigarettes per day. Almost three-quarters (74 percent) of high school seniors perceived "great risk" from such use, compared to half (51 percent) of the senior class in 1975 (Johnston 2003).

THE HIGH

Nicotine can act as both a stimulant and sedative. Although nicotine provides an immediate "rush" that increases, among other things, blood pressure and heart rate, it also exerts a sedative effect resulting a lessening of anxiety and stress. The immediate effects of nicotine dissipate within minutes of ingestion, which leads users to smoke frequently throughout the day to maintain the drug's pleasurable effects and prevent withdrawal (Krogh 1991).

Tobacco does not impair judgment or the ability to think clearly. While it does not alter consciousness, smokers often say they smoke cigarettes to relieve anxiety, to escape from boredom or pain.

THE RISKS (cont.)

Finally, smoking during pregnancy can harm an unborn fetus, resulting in low birth weight and other complications (NIDA 2001).

Pipes and cigars are less hazardous than cigarettes because smoke from them is harsher, discouraging deep inhalation. In addition, since they don't deliver rapid pulses of nicotine to the brain, those who rely on these methods are less likely to become as addicted to tobacco as cigarette smokers. The same applies to those who chew smokeless tobacco or inhale snuff. These alternatives to cigarettes are not without risk, however. They still put nicotine in the body, which can affect the heart and circulation and such users are at increased risk of cancer of the lips, mouth, and throat (Napier 1997).

Reducing risk associated with tobacco and nicotine requires avoiding second-hand smoke and cutting down or attempting to quit if using any form of tobacco. It is also important to be aware of the potentially dangerous drug interactions with nicotine, such as the increased risk of cardiovascular disease associated with smoking and the use of birth control pills.

SIGNS OF USE

The most obvious sign of tobacco smoking, regardless of whether cigarettes, cigars, or pipes, is the odor associated with it. Tobacco use also causes stained teeth, bad breath, and foul smelling hair and clothes. Smoking frequently results in coughs, shortness of breath, and respiratory illnesses.

First time users of tobacco (particularly smokeless tobacco) may experience nausea, dizziness, and a headache.

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ABOUT SAFETY FIRST

Safety First, a project of the Drug Policy Alliance, is dedicated to providing parents of adolescents with honest, science-based information about drugs and drug education. For more information, visit www.safety1st.org.

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safety first

Educate Yourself

FACTS about DRUGS: ALCOHOL

WHAT IS IT?

Alcohol is the oldest and most widely used drug in the world. Distilled spirits/hard liquor, grain alcohol, hard cider, wine, and beer are created through fermentation—yeast feeding on sugars to create alcohol and carbon dioxide as by-products.

SLANG

The act of drinking alcohol to excess may be described as getting drunk, smashed, sloshed, wasted, sauced, hammered, bombed, juiced, slammed, inebriated, blasted, or blitzed.

AVAILABILITY & USE

Despite laws restricting underage drinking, alcohol remains easily accessible to young people. Teens report that they most commonly obtain alcohol from, and are most likely to drink in, their own homes and the homes of their peers (New York Times 2002).

For teens buying alcohol illegally, the price can vary. For example, a 40-ounce bottle of malt liquor can cost $3, a 4-pack of wine coolers can cost $6, and a 12-pack of beer can cost about $9.

RATES OF USE

In 2001, 47 percent of eighth graders reported that they had used alcohol at least once. Among high school seniors, 78 percent reported that they had tried alcohol and 62 percent report having been drunk at least once (Johnston 2003).

THE HIGH

As with all psychoactive drugs, social context influences the experience of alcohol. Lone drinkers may feel more withdrawn, while those drinking within a group may become more social. At low concentrations, alcohol may produce a sense of euphoria, warmth, and relaxation, and reduce inhibitions.

(continued next page)

THE RISKS

As a depressant, alcohol slows the central nervous system, impairs reflexes, reduces muscular response, and affects judgment. These factors are what make driving a car while under the influence of alcohol so dangerous. In addition, those engaging in sexual activities while under the influence are more likely to have unprotected or non-consensual sex.

Binge drinking (drinking large quantities in a short period) can be lethal. A lethal dose of alcohol is a blood alcohol level (BAL) between 0.40 and 0.50. Body size and existing tolerance to alcohol influence how quickly a person will reach this level of intoxication. Any BAL is illegal for those under the age of twenty-one.

Alcohol is an addictive substance. There are four generally accepted criteria for determining alcoholism:

1. Drinking a substantial amount of alcohol over a specific time period;

2. Psychological dependency — requiring alcohol to function;

3. Physical dependency — showing withdrawal symptoms when attempting to quit; and

4. Life problems that have resulted from drinking (Goode 1999).

Alcohol is responsible for approximately 10 percent of all deaths and alcoholism reduces life expectancy by about fifteen years (Goode 1999). Adverse health effects of alcohol misuse include cirrhosis of the liver, fetal alcohol syndrome, nerve damage, loss of intelligence, and amnesia.

(continued next page)

SIGNS OF USE

Common signs of drinking include the lingering smell of alcohol on the breath, slurred speech, loss of motor control, poor judgment, aggressiveness, and wildness. Excessive drinking may also lead to vomiting, falling asleep, or passing out.

RECOMMENDED READING

Goode, Erich. 1999. *Drugs in American Society.* Boston: McGraw Hill College. ISBN: 0070244952.

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THE RISKS (cont.)

Research indicates there is also a link between alcohol and violence, although it does not seem to be a causal relationship. Statistics show that a high percentage of violent crime, including sexual assault, occurs when perpetrators and/or victims are under the influence of alcohol.

The best way to eliminate the risks associated with alcohol use is to abstain. Short of abstinence, reducing risks requires not drinking on an empty stomach; not drinking and driving; not accepting a ride from someone who has been drinking; not engaging in "chugging" contests; not mixing alcohol with other drugs (including prescription drugs); knowing one's own reaction to alcohol (everyone is different); and not drinking around strangers.

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Drug Testing Fails at School and Work

~ Since marijuana remains detectable for as long as a month (while alcohol, heroin and cocaine for only a day or two[1]), testing will encourage students and workers to switch to more dangerous drugs. Can you imagine anything dumber?

~ The most effective method of preventing adolescent drug abuse is keeping youths active and learning after school when many parents are working and kids are not supervised.[2] Why would we want to put up barriers to kids participating in after school activities?

~ The most effective schools put in place a student assistance program that allows youngsters to anonymously seek or be referred to counseling if they show signs of problems. Shouldn't students perceive school administrators as their mentors rather than an extension of the police?

~ Based on 9% of schools that have some form of drug testing, the National Academy of Sciences reports: **"there is no scientific evidence regarding the effects of these programs, either on drug use or on the learning environment."**[3]

~ One school system rejected testing when it found it would cost $8 million annually to test its 75,000 athletes at its 171 high schools.[4] That's $46,000 per high school . . . $106 per student tested.

Let's Keep Our Kids Busy, Monitor Their Performance and *Communicate.*

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1 Hawks and Chiang, "Examples of Specific Drug Assays, Urine Testing for Drugs of Abuse", Research Monograph No. 73 (1986); McBay, "Interpretation of Blood and Urine Cannabinoid Concentrations", 33 J. Forensic Sci 875-83 (1988); Ambre, J. et al, "Urinary Excretion of Cocaine Berzoylecgonine and Ecgonine Methyl Ester in Human", J. Analytical Toxicology (1988); Ellis et al, "Excretion Patterns of Cannabinoid Metabolites After Last Use in a Group of Chronic Users, 38 Clinical Pharmacology & Therapeutics", 572-78 (1985).

2 Carmona, Maria and Kathryn Stewart. (1996). "A Review of Alternative Activities and Alternative Programs in Youth-Oriented Prevention" *CSAP Technical Report No. 13.* Washington, DC: Center for Substance Abuse Prevention/ Substance Abuse and Mental Health Administration/ Department of Health and Human Services; Tierney, Joseph P., Jean Baldwin Grossman, and Nancy L. Resch. (1995 November). *Making a Difference: An Impact Study of Big Brothers/Big Sisters.* P. 49. Philadelphia, PA: Public/Private Ventures; N,. Zill, C. Nord, & L. Loomis, "Adolescent Time Use, Risky Behavior, And Outcomes 52 (1995)."

3 National Research Council, "Informing America's Policy on Illegal Drugs, 2001", page 203.

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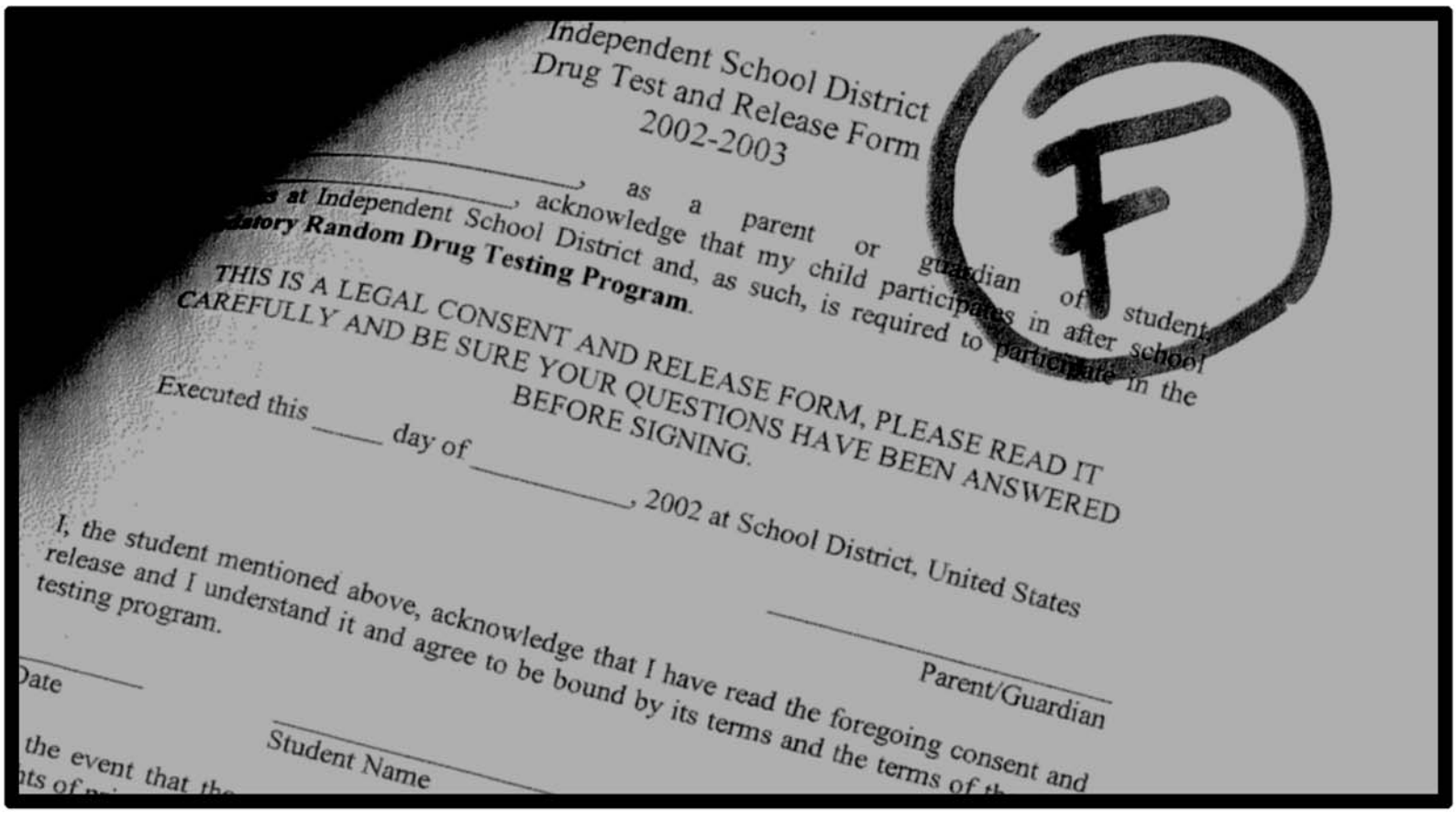
DRUG TESTING

FAILS



OUR YOUTH

www.drugtestingfails.org

Making Sense of Student Drug Testing

Why Educators are Saying No

Making Sense of Student Drug Testing

Why Educators are Saying No

January 2004

Written by Fatema Gunja, Alexandra Cox, Marsha Rosenbaum, PhD and Judith Appel, JD

ACLU AMERICAN CIVIL LIBERTIES UNION FOUNDATION
DRUG POLICY LITIGATION PROJECT

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THE DRUG POLICY ALLIANCE is the nation's leading organization working to end the war on drugs and promote new drug policies based on science, compassion, health, and human rights.

FOREWORD

For the safety and well being of young people, it is crucial to develop programs that effectively address drug use. To succeed, these programs must be grounded in research, compassion, and health. They must also promote trust and honest dialogue between adults and young people.

The authors of this booklet, the Drug Policy Alliance and the American Civil Liberties Union, have analyzed, researched, and litigated student drug testing for many years. We have listened to the experts – from the American Academy of Pediatrics and the American Public Health Association to hundreds of concerned educators, parents, and students across the country. **The experts agree, and the evidence is clear: random drug testing does not effectively reduce drug use among young people.**

This booklet demonstrates the key flaws in random student drug testing as well as the components of promising alternatives. We hope it informs your decisions about how best to address drug use among young people in your community.

Anthony D. Romero
Executive Director
American Civil Liberties Union

Ethan Nadelmann
Executive Director
Drug Policy Alliance

EXECUTIVE SUMMARY

Comprehensive, rigorous, and respected research shows that there are many reasons why random student drug testing is not good policy:

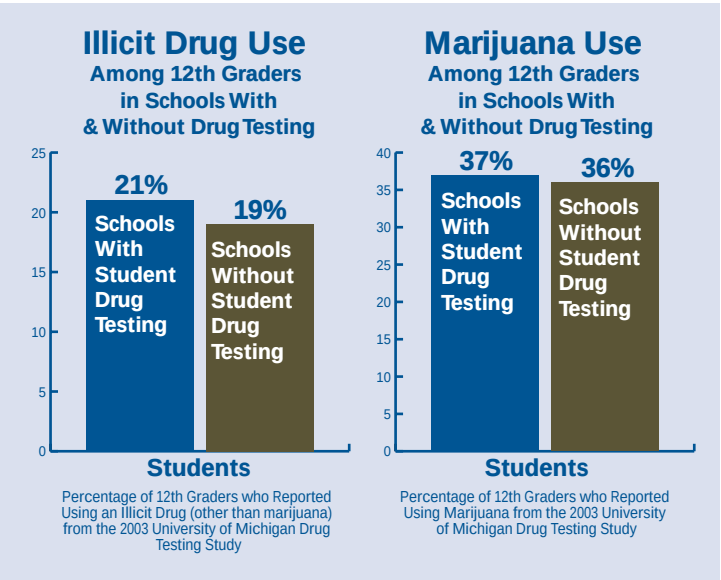
- Drug testing is not effective in deterring drug use among young people;
- Drug testing is expensive, taking away scarce dollars from other, more effective programs that keep young people out of trouble with drugs;
- Drug testing can be legally risky, exposing schools to potentially costly litigation;
- Drug testing may drive students away from extracurricular activities, which are a proven means of helping students stay out of trouble with drugs;
- Drug testing can undermine relationships of trust between students and teachers and between parents and their children;
- Drug testing can result in false positives, leading to the punishment of innocent students;
- Drug testing does not effectively identify students who have serious problems with drugs; and
- Drug testing may lead to unintended consequences, such as students using drugs that are more dangerous but less detectable by a drug test, and learning the wrong lessons about their constitutional rights.

There *are* alternatives to drug testing which emphasize education, discussion, counseling, extracurricular activities, and build trust between students and adults.

RANDOM DRUG TESTING DOES NOT DETER DRUG USE

Largest National Study Shows Drug Testing Fails

The first large-scale national study on student drug testing found no difference in rates of drug use between schools that have drug testing programs and those that do not.[1] Based on data collected between 1998 and 2001 from 76,000 students nationwide in 8th, 10th, and 12th grades, the study found that drug testing did not have an impact on illicit drug use among students, including athletes.



Dr. Lloyd D. Johnston, an author of the study, directs *Monitoring the Future*, the leading survey by the federal government of trends in student drug use and attitudes about drugs. According to Dr. Johnston, "[The study] suggests that there really isn't an impact from drug testing as practiced…I don't think it brings about any constructive changes in their attitudes about drugs or their belief in the dangers associated with using them."[2] Published in the April 2003 *Journal of School Health*, the study was conducted by researchers at the University of Michigan and funded in part by the National Institute on Drug Abuse.

The strongest predictor of student drug use, the study's authors note, is students' attitudes toward drug use and their perceptions of peer use. The authors recommend policies that address "these key values, attitudes, and perceptions" as effective alternatives to drug testing.[3] The results of the national study are supported by numerous surveys and studies that examine the effectiveness of different options for the prevention of student drug misuse.[4]

Set against the evidence from this national study and expert opinion, a handful of schools claim anecdotally that drug testing has reduced drug use. The only formal study to claim a reduction in drug use was based on a snapshot of six schools and was suspended by the federal government for lack of sound methodology.[5]

WHO SAYS NO TO RANDOM DRUG TESTING?

There has been a groundswell of opposition to random drug testing among school officials, experts, parents, and state legislatures.

School Officials and Parents Say No to Drug Testing

We stopped testing because "we didn't think it was the deterrent that we thought it would be...we didn't think it was as effective with the money we spent on it."[6]

– Scott Dahl, Vice President of School Board in Guymon, Oklahoma

We decided not to drug test because "it's really a parental responsibility...it is not our job to actually test [students]."[7]

– Harry M. Ward, Superintendent in Matthews County, Virginia

"The concerns of parents [in opposing a student drug testing proposal] have ranged from the budgetary issues to losing our focus on education to creating a threatening environment."[8]

– Laura Rowe, President of Band Aids, parent association of the HS band program in Oconomowoc, Wisconsin

"We object to the urine-testing policy as an unwarranted invasion of privacy. We want schools to teach our children to think critically, not to police them."[9]

– Hans York, Parent and Deputy Sheriff in Wahkiakum, Washington

"I would have liked to see healthy community participation that stimulates thoughtful interaction among us. Instead, this [drug testing] policy was steamrolled into place, powered by mob thinking."[10]

– Jackie Puccetti, Parent in El Paso, Texas

Educators and School Officials

The majority of school officials – including administrators, teachers, coaches, school counselors, and school board members – have chosen not to implement drug testing programs. They object to

drug testing for a variety of reasons, including the cost of testing, the invasion of privacy, and even the unfair burden that student drug testing places on schools, with their concerns rooted in knowledge and experience about students. For many educators and school officials, drug testing simply fails to reflect the reality of what works to establish safe school environments.

Experts

"Social workers, concerned with a child's well-being, question whether [drug testing] will do more harm than good...What is most effective in keeping kids away from drugs and alcohol are substance abuse prevention programs based on scientific research."[11]

– Elizabeth J. Clark, PhD, ACSW, MPH
Executive Director of the National Association of Social Workers

In regards to drug testing, "what was once a tool to help physicians diagnose and treat substance abuse has been extended for non-medical uses... This testing, however has been frequently mistaken as the method, rather than as an aide, for detecting substance abuse."[12]

– Policy Statement of the American Academy of Child & Adolescent Psychiatry

The Oklahoma policy "falls short doubly if deterrence is its aim: It invades the privacy of students who need deterrence least, and risks steering students at greater risk for substance abuse away from extracurricular involvement that potentially may palliate drug problems."[13]

– Supreme Court Justice Ruth Bader Ginsburg's Dissenting Opinion in the Earls *Decision*

Physicians, social workers, substance abuse treatment providers, and child advocates agree that student drug testing cannot replace pragmatic drug prevention measures, such as after school activities. Many prominent national organizations representing these groups have come forward and opposed drug test-

ing programs in court. These groups include the American Academy of Pediatrics, the National Education Association, the American Public Health Association, the National Association of Social Workers, and the National Council on Alcoholism and Drug Dependence. These experts stated: "Our experience – and a broad body of relevant research – convinces us that a policy of [random student drug testing] *cannot* work in the way it is hoped to and will, for many adolescents, interfere with more sound prevention and treatment processes."[14]

Parents

Many parents oppose drug testing for the same reasons as school personnel and administrators. In addition, some parents believe that schools are misappropriating their roles when they initiate drug testing programs. They believe that it is the role of parents, not schools, to make decisions about their children's health.

State Governments

In 2003, several state legislatures opposed student drug testing after hearing community and experts' concerns about privacy, confidentiality, potential liability, and overall effectiveness. For example, the Hawaii legislature tabled a bill that would establish a drug testing pilot program at several public high schools. In Louisiana, a bill that would have mandated drug testing state scholarship recipients was defeated.

Most Schools Say No to Drug Testing[15]

A national survey of schools conducted six years after the U.S. Supreme Court upheld drug testing for school athletes found that:

- **95% of schools do not randomly drug test student athletes.**
- **No public school district randomly drug tests all of its students.**
- **None of the ten largest U.S. school systems randomly drug test their students.**

DRUG TESTING HAS A NEGATIVE IMPACT ON THE CLASSROOM

Drug testing can undermine student-teacher relationships by pitting students against the teachers and coaches who test them, eroding trust, and leaving students feeling ashamed and resentful.

As educators know, student-teacher trust helps create an atmosphere in which students can address their fears and concerns, both about drug use itself and the issues in their lives that can lead to drug use, including depression, anxiety, peer pressure, and unstable family lives. Trust is jeopardized if teachers act as confidants in some circumstances but as police in others.

DRUG TESTING IS EXPENSIVE AND A WASTE OF SCHOOL RESOURCES

Problems with Different Types of Tests[16]

Urine	Marijuana Cocaine Opiates Ampheta-mines PCP	$10-$30 per test	• Tests commonly used in schools often do not detect alcohol or tobacco • Since marijuana stays in the body longer than many other drugs, drugs like cocaine, heroin and methamphetamines are less likely to be detected • Test is invasive and embarrassing • Specimen can be adulterated
Hair	Marijuana Cocaine Opiates Ampheta-mines PCP	$60-$75 per test	• Expensive • Test limited to basic 5-drug panel (cannot detect alcohol use) • Will not detect very recent drug use • The test is discriminatory: dark-haired people are more likely to test positive than blondes, and African-Americans are more likely to test positive than Caucasians • Passive exposure to drugs in the environment, especially those that are smoked, may lead to "innocent positive" results
Sweat Patch	Marijuana Cocaine Opiates Ampheta-mines/Meth. PCP Ecstasy	$20-$30 per test	• Limited number of labs able to process results • Passive exposure to drugs may contami-nate patch and result in false positives • People with skin eruptions, excessive hair, or cuts and abrasions cannot wear the patch

Drug testing costs schools an average of $42 per student tested, which amounts to $21,000 for a high school testing 500 students.[17] This figure is for the initial test alone and does not include the costs of other routine components of drug testing, such as additional tests throughout the year or follow-up testing for positive results.

The cost of drug testing sometimes exceeds the total a school district spends on existing drug education, prevention, and counseling programs. In fact, drug testing may actually take scarce resources away from the health and treatment services necessary for students who are misusing drugs – seriously undermining the original purpose of the drug test.

The process for dealing with a positive test is usually long and involved; not only must a second test be done to rule out a false-positive result, but treatment referral and follow-up systems must be in place. In one school district, the cost of detecting only 11 students who tested positive amounted to $35,000.

Cost-Benefit Analysis in Dublin, Ohio[18]

In Dublin, Ohio, school administrators ended their drug testing program and hired two full-time substance abuse counselors instead, concluding that money allocated towards drug testing was diverting more effective drug prevention resources.

	Drug Testing	Substance Abuse Counselor
Cost of program	$35,000 per school year	$32,000 annual starting salary per counselor
# of Students	Out of 1,473 students tested, 11 tested positive	Prevention programs for all 3,581 high school students incorporated in a weekly class curriculum
Cost per student	$24 per student for drug test $3,200 per student who tested positive	$18 per student for drug prevention, education and intervention Intervention programs for all targeted students who need help

Beyond the initial costs, there are long term operational and administrative costs associated with student drug testing, including:

- Monitoring students' urination to collect accurate samples;
- Documentation, bookkeeping, and compliance with confidentiality requirements; and
- Tort or other insurance to safeguard against potential lawsuits.

NOT ALL DRUG TESTING IS PROTECTED UNDER THE LAW

In 2002, by a margin of 5 to 4, the U.S. Supreme Court permitted public school districts to drug test students participating in competitive, extracurricular activities in the case *Pottawatomie v. Earls*. In its ruling, however, the Court only interpreted *federal* law. Schools are also subject to *state* laws – which may provide greater protections for students' privacy rights. These laws vary greatly from state to state, and in many states, the law may not yet be well defined by the courts. For instance, random drug testing programs in Iowa are prohibited because the State Constitution forbids suspicionless searches of any kind. An Iowa school district's drug testing program, then, could still be challenged under state law.

In many states, including Arkansas, Indiana, Maryland, Michigan, Ohio, Oklahoma, Oregon, Texas, and Washington, lawsuits have been filed against school districts for their drug testing policies.[19] Many of these school districts spend years and thousands of taxpayer dollars battling these lawsuits with no guarantee of success.

In late 2003, the Supreme Court of Pennsylvania struck down the random, suspicionless drug testing of student participants in extracurricular activities and those with parking passes, finding that this program violated the heightened privacy protections provided by the Pennsylvania constitution.[20]

U.S. Supreme Court DID NOT Say...

- **The Court DID NOT say that schools are required to test students involved in competitive extracurricular activities.**
- **The Court DID NOT say drug testing of all students or specific groups of students outside of those participating in competitive, extracurricular activities (i.e. student drivers) is constitutional.**
- **The Court DID NOT say it is constitutional to drug test elementary school children.**
- **The Court DID NOT say that it is constitutional to test by means other than urinalysis.**
- **The Court DID NOT say that schools are protected from lawsuits under their respective state laws.**

RANDOM DRUG TESTING IS A BARRIER TO JOINING EXTRA-CURRICULAR ACTIVITIES

Random drug testing is typically directed at students who want to participate in extracurricular activities, including athletics. However, drug testing policies may prevent some students from engaging in these activities. Research shows the vastly disproportionate incidence of adolescent drug use and other dangerous behavior occurs during the unsupervised hours between the end of classes and parents' return home in the evening.[21]

Research also shows that students who participate in extracurricular activities are:

- Less likely to develop substance abuse problems;
- Less likely to engage in other dangerous behavior such as violent crime; and
- More likely to stay in school, earn higher grades, and set – and achieve – more ambitious educational goals.[22]

In addition, after school programs provide students who are experimenting with or misusing drugs with productive activities and contact with a teacher, coach, or even a peer who can help them identify and address problematic drug use.

One of many school districts facing lawsuits regarding privacy concerns and confidentiality, the Tulia Independent School District has seen a dramatic reduction in student participation in extracurricular activities since implementing drug testing.[23] One female student explains:

"I know lots of kids who don't want to get into sports and stuff because they don't want to get drug tested. That's one of the reasons I'm not into any [activity]. Cause…I'm on medication, so I would always test positive, and then they would have to ask me about my medication, and I would be embarrassed. And what if I'm on my period? I would be too embarrassed."[24]

DRUG TESTING RESULTS IN FALSE POSITIVES THAT PUNISH INNOCENT STUDENTS

A positive drug test can be a devastating accusation for an innocent student. The most widely used drug screening method – urinalysis – will falsely identify some students as illicit drug users when they are not actually using illicit drugs at all, because drug testing does not necessarily distinguish between drug metabolites that have closely similar structures. For example:

- Over the counter decongestants may produce positive results for amphetamine.[25]
- Codeine can produce a positive result for heroin.[26]
- The consumption of food products with poppy seeds can produce a positive result for opiates.[27]

Violating Confidentiality

When Tecumseh High School in Oklahoma enacted its random drug testing program, the school failed to ensure the protection of private information concerning prescription drug use submitted under the testing policy. The Choir teacher, for instance, looked at students' prescription drug lists and left them where other students could see them. The results of a positive test, too, were disseminated to as many as 13 faculty members at a time. Other students figured out the results when a student suddenly was suspended from his/her activity shortly after the administration of a drug test.[28] This not only violates students' privacy rights, but can also lead to costly litigation.

In a desire to eliminate the possibility for false positives, schools often ask students to identify their prescription medications before taking a drug test. This both compromises students' privacy rights and creates an added burden for schools to ensure that students' private information is safely guarded.

What National Experts Said to the U.S. Supreme Court[29]

A mandatory drug testing policy "injects the school and its personnel, unnecessarily, into a realm where parental and medical judgment should be preeminent."

– American Academy of Pediatrics, et al.

School drug testing policies often operate "in disregard for prevention and treatment principles that doctors and substance abuse experts view as fundamental..."

– American Public Health Association, et al.

"There is growing recognition that extracurricular involvement plays a role in protecting students from substance abuse and other dangerous health behaviors."

– National Education Association, et al.

The risk that testing students for illicit drugs "will be understood to signal that alcohol and tobacco are of less danger is not an idle concern."

– National Council on Alcoholism and Drug Dependence, et al.

DRUG TESTING IS NOT THE BEST WAY TO IDENTIFY STUDENTS WITH A DRUG PROBLEM

Drug testing says very little about who is misusing or abusing drugs. Hundreds or even thousands of students might be tested in order to detect a tiny fraction of students who may have used the drugs covered by the test. Additionally, students misusing other harmful substances not detected by drug tests will not be identified. If schools rely on drug testing, they may undervalue better ways of detecting young people who are having problems with drugs. Most often, problematic drug use is discovered by learning to recognize its common symptoms. Teachers, coaches, and other school officials can identify students with a drug problem by paying attention to such signs as student absences, erratic behavior, changes in grades, and withdrawal from peers.

DRUG TESTING HAS UNINTENDED CONSEQUENCES

Students may turn to more dangerous drugs or binge drinking.
Because marijuana is the most detectable drug, students may switch to drugs they think the test will not detect, like Ecstasy (MDMA) or inhalants. Knowing alcohol is less detectable, they may also engage in binge drinking, creating greater health and safety risks for students and the community as a whole.

Students can outsmart the drug test.
Students who fear being caught by a drug test may find ways to cheat the test, often by purchasing products on the internet. A quick search on the Internet for "passing a drug test" yields over 8,000 hits, linking students to web sites selling drug-free replacement urine, herbal detoxifiers, hair follicle shampoo, and other products designed to beat the drug test. In addition, a new subculture of students might emerge that makes a mockery of the drug testing program. For example, in one school district in Louisiana, students who were facing a hair test shaved their heads and body hair.[30]

Students learn that they are guilty until proven innocent.
Students are taught that under the U.S. Constitution, people are presumed innocent until proven guilty and that they have a reasonable expectation of privacy. Random drug testing undermines both lessons; students are assumed guilty until they can produce a clean urine sample, with little regard given to students' privacy rights.

First, Ask These Hard Questions

- **Has the drug test been proven to identify students likely to have future problems and to clear those who will not?**
- **Have schools been proven to be more cost effective places to perform these tests than a doctor's office?**
- **Are resources in place to assist students who "fail" the test, regardless of health insurance status or parental income?**
- **Is the financial interest of a drug testing company behind the test's promotion?**
- **Is school staff using precious time to elicit parental permission, explain the test, make the referrals, and assure follow-up?**

Adapted from the American Association of School Administrators web site [31]

ALTERNATIVES TO STUDENT DRUG TESTING

The current push to increase drug testing comes from the drug testing industry, but also from well-intentioned educators and parents frustrated by the lack of success of drug prevention programs such as Drug Abuse Resistance Education (DARE).[32] However, there are more effective ways to keep teens out of trouble with drugs.

Engage Students in After School Programs

Schools and local communities should help engage students in extracurricular activities and athletics since these are among the best deterrents for drug misuse.

Incorporate Reality-Based Drug Education Into the School Curriculum

Drugs of all sorts abound in our society. We are constantly confronted with a wide variety of substances that have recreational and medicinal uses and that can be purchased over the counter, by prescription, and illegally. Since decisions to use drugs of all kinds is ongoing, quality drug education should be incorporated into a broad range of science classes, including physiology, chemistry, and biology, as well as psychology, history, and sociology. Drug education should avoid dishonest scare tactics, and it should also recognize the wide spectrum of drug use and misuse, and the reasons why young people might choose to use (or not use) drugs.

Provide Counseling

Schools should provide counseling for students who are using drugs in a way that is causing harm to themselves or others. An emerging model, which stresses relationships between students and counselors, is that of a comprehensive Student Assistance Program (SAP)[33]. Both prevention education and intervention can occur in such a program. Counselors who teach about drugs can remain an important resource for students after the formal session ends. Trained student counselors can engage students

who may feel more comfortable talking about their problems with their peers.

Allow Students to be Assessed and Treated by Health Care Professionals

Schools can refer students to health care professionals who can play a role in screening, intervening, and referring adolescents to treatment. Several screening tools, other than urinalysis, such as questionnaires, are available to health care professionals in diagnosing drug abuse among adolescents.[34]

Encourage Parents to Become Better Informed

Informed parents play a key role in preventing and detecting drug misuse, so they should learn as much as they can. Schools can encourage parents to open a dialogue when adolescents are actually confronted with alcohol and other intoxicating drugs, usually in middle school. At this point, "drug talks" should be two-way conversations. It is important for parents to teach as well as learn from their children.

Cultivate Trust and Respect Among Students and Adults

Trust and respect are perhaps the most important elements of a relationship with teens. Young people who have the confidence of their parents and teachers, and are expected to assume responsibility for their actions, are the most likely, in turn, to act responsibly. They need to practice responsibility while still in high school where they have a parental and school "safety net."

The combination of these methods will help ensure that students:

1) Receive comprehensive, science-based information;
2) Receive help when they need it; and
3) Stay busy and involved in productive activities when the school day ends.

RESOURCES

Studies on Students, Drug Testing, and/or After School Activities

Ryoko Yamaguchi, Lloyd D. Johnston, Patrick M. O'Malley, "Relationship Between Student Illicit Drug use and School Drug Testing Policies," *Journal of School Health* 73-4 (2003): 159-64. Available at: http://www.monitoringthefuture.org/pubs/text/ryldjpom03.pdf

Robert Taylor, "Compensating Behavior and the Drug Testing of High School Athletes,"*The Cato Journal* 16-3 (1997). Available at: http://www.cato.org/pubs/journal/cj16n3-5.html

William J. Bailey, M.P.H., C.P.P, "Suspicionless Drug Testing in Schools," *Current Issues in Drug Abuse Prevention* (1998). Available at: http://www.drugs.indiana.edu/issues/suspicionless.html

U.S. Department of Justice, "Safe and Smart: Making After-School Hours Work for Kids" (1998). Available at: http://www.ed.gov/pubs/SafeandSmart

U.S. Department of Health and Human Services, "Adolescent Time Use, Risky Behaviors and Outcomes"(1995). Available at: http://aspe.hhs.gov/hsp/cyp/xstimuse.htm

Recommended Reading and Viewing

Andrew Weil, M.D. and Winifred Rosen, *From Chocolate to Morphine: Everything You Need to Know About Mind-Altering Drugs*, (Boston: Houghton Mifflin, 1998).

Marsha Rosenbaum, *Safety First: A Reality-Based Approach to Teens, Drugs and Drug Education*, (San Francisco: Drug Policy Alliance, 2002). This 17-page booklet provides parents and educators with pragmatic ways to address teenage drug use. It is available in hard copy or at http://www.safety1st.org in English, Spanish, Russian, and Hebrew.

Friend-of-the-Court brief of the American Academy of Pediatrics, et al. in Support of Lindsay Earls, for *Earls*, 536 U.S. 822 (2002). Available at: http://www.drugtestingfails.org/pdf/amicus_brief.pdf

"Larry v. Lockney," writers and directors Mark Birnbaum and Jim Schermbeck, Public Broadcasting System, 1 July 2003.
This is a documentary about a parent's fight against a student drug testing program in his son's school, and the web site includes lesson plans and other related resources. Available at:
http://www.pbs.org/pov/pov2003/larryvlockney/index.html

"Teaching about Drug Testing in Schools," American Bar Association, adapted from Street Law, Inc (1999). This is a lesson plan that educates students about drug testing in schools and allows them to consider and discuss the consequences of a student drug testing policy. Available at:
http://www.abanet.org/publiced/lawday/schools/lessons/hs_drugs.html

Recommended Web Sites

"Drug Testing Fails" provides resources for parents, educators, coaches, and other interested and concerned adults who believe that safe and trusting learning environments are critical to our young people's health and safety, and that student drug testing programs get in the way of creating that kind of environment. Available at: http://www.drugtestingfails.org

"A Test You Can't Study For" is a special ACLU web feature on student drug testing that includes a guide for students, fact sheets, reports, and other materials. Available at: http://www.aclu.org/DrugPolicy

ENDNOTES

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2 Greg Winter, "Study Finds No Sign That Testing Deters Students' Drug Use," *New York Times* 17 May 2003.

3 "ACLU Says First National Study on Student Drug Testing Confirms Policy is Ineffective as Well as Unconstitutional," ACLU Press Release 19 May 2003. Available online at: http://www.aclu.org/DrugPolicy/DrugPolicy.cfm?ID=12655&c=79 (last checked 11 August 2003).

4 See, for example: U.S. Public Health Service, "Adolescent Time Use, Risky Behaviors and Outcomes" (1995); L. Shilts, "The Relationship of Early Adolescent Substance Use to Extracurricular Activities, Peer Influence, and Personal Attitude," *Adolescence 26* (Fall 1991): 613, 615; WJ Bailey, "Suspicionless drug testing in schools," available online at: http://www.drugs.indiana.edu/issues/suspicionless.html (last checked 11 August 2003); and Robert Taylor, "Compensating behavior and the drug testing of high school athletes," *The Cato Journal* 16.3 (1997). Available online at: http://www.cato.org/pubs/journal/cj16n3.html (last checked 11 August 2003).

5 Linn Goldberg, the author of the study suspended by federal authorities, now agrees that "even his study did not prove that testing limits consumption. 'Schools should not implement a drug testing program until they're proven to work,' he added. 'They're too expensive. It's like having experimental surgery that's never been shown to work.'" Greg Winter, "Study Finds No Sign That Testing Deters Students' Drug Use," *New York Times* 17 May 2003

6 Jessica Raynor, "Guymon to eliminate drug program," *Amarillo Globe-News Online* 15 August 2002.

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8 Kay Nolan, *Milwaukee Journal Sentinel*, "District drops random drug testing plan; Proposal for Oconomowoc schools lacks parents' support," 22 October 2003.

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11 "Social Workers Disagree With Supreme Court Decision to Test Students for Drug Use," *National Association of Social Workers Web Site*. Available online at: http://www.socialworkers.org/pressroom/2002/062702.asp (last checked 11

August 2003).

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13 *Board of Education of Independent School District No. 92 of Pottawatomie County v. Earls*, 536 U.S. 822 (2002) (Ginsberg, R., dissenting).

14 Brief of *Amici Curiae* at 1, *Earls*, 536 U.S. 822 (2002). Available online at: http://www.aclu.org/DrugPolicy/DrugPolicy.cfm?ID=11238&c=79 (last checked 11 August 2003).

15 Ryoko Yamaguchi, Lloyd D. Johnston, Patrick M. O,Malley, "Relationship Between Student Illicit Drug Use and School Drug Testing Policies," *Journal of School Health* 73.4 (2003): 160 Table 1.

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21 U.S. Department of Education and U.S. Department of Justice, "'Safe and Smart': Making After-School Hours Work for Kids," (1998).

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33 Student Assistance Programs (SAPs) are comprehensive models for the delivery of K-12 prevention, intervention, and support services. SAPs are designed to reduce student risk factors, promote protective factors, and increase personal development and decision-making skills by students. For information about developing SAPs, see the National Association of Student Assistant Professionals web site at: www.nasap.org or call 1-800-257-6310.

34 Physician Leadership on National Drug Policy, "Adolescent Substance Abuse: A Public Health Priority," *Prevention Brochure* 23 (19 August 2002). Available online at: http://www.nida.nih.gov/prevention/PREVOPEN.htm.These tools include the Personal Experience Inventory (PEI), Drug Abuse Screening Test for Adolescents (DAST-A), and Adolescent Drug Involvement Scale (ADIS), among others.

"AS A PEDIATRICIAN who works closely with schools, I know I can help students do their best when I believe in them and boost their strengths. I also know that school superintendents and principals want what is best and safest for their students. Random drug testing can seriously erode the trust that needs to exist between youth and important adults in their lives. This booklet will help school officials make an informed decision about random drug testing."

– Barbara Frankowski, MD, MPH
Professor of Pediatrics
University of Vermont College of Medicine

"THIS SMART, WELL-REASONED booklet provides educators with the information they need to make responsible decisions about student drug testing. I highly recommend it to teachers, parents, administrators, and school board members."

– The Honorable John Vasconcellos
Chair, Education Committee
California State Senate

"MAKING CORRECT DECISIONS about how to keep students safe is critical, and we always need all the help we can get. This booklet is a thorough review of drug testing in schools and highlights many valid concerns. All should read it before establishing any school drug policy. I would have welcomed this booklet when I was a teacher, supervisor, and superintendent."

– Warren A. Stewart, EdD
retired Superintendent of Goochland County
Public Schools, Virginia

"THIS IS A CLEAR, LUCID ANALYSIS of random drug testing. It makes a strong case that random drug testing is likely to do more harm than good. It deserves wide distribution to parents, teachers, students and social workers."

– Milton Friedman, PhD
Senior Research Fellow, Nobel Prize for
Economics, Hoover Institution, Stanford University

"WHILE STUDENT DRUG TESTING may seem a panacea, the reasoned ideas contained in this booklet amply demonstrate its pitfalls. As an educator, I would urge school decision-makers to read 'Making Sense of Student Drug Testing: Why Educators are Saying No' and tread carefully and skeptically before embarking on this misguided policy."

– Rodney Skager, PhD
Professor Emeritus, Graduate School of Education,
University of California, Los Angeles

WHAT IS KETAMINE?

- Ketamine hydrochloride ("Special K" or "K") was originally created for use as a human anaesthetic, and is still used as a general anaesthetic for children, persons of poor health, and by veterinarians.
- Ketamine belongs to a class of drugs called "dissociative anaesthetics," which separate perception from sensation. Other drugs in this category include PCP, DXM and nitrous oxide (laughing gas).
- Ketamine is usually cooked into a white powder for snorting.

WHAT ARE THE EFFECTS?

- At lower doses it has a mild, dreamy feeling similar to nitrous oxide. Users report feeling floaty and slightly outside their body. Numbness in the extremities is also common.
- Higher doses produce a hallucinogenic (trippy) effect, and may cause the user to feel very far away from their body.
- This experience is often referred to as entering a "K-hole" and has been compared to a near death experience with sensations of rising above one's body. Many users find the experience spiritually significant, while others find it frightening.
- While in a K-hole it is very difficult to move. People usually remain seated or lying down during the experience.

WHAT IS THE DOSAGE?

- Most people snort small lines or "bumps" for a mild, dreamy effect. The effect comes on within about 5 to 10 minutes.
- 100mg is usually enough to enter a K-hole.
- If liquid is injected into the muscle, less is needed to enter a K-hole. Effects can be felt within four minutes. (Ketamine is never injected into the vein).
- If swallowed, the effects come on in 10 - 20 minutes.
- Some people become nauseous after taking ketamine.
- Occasionally ketamine has been sold in a capsule as "Ecstasy," although it is nothing like MDMA (real ecstasy). An ecstasy testing kit can be used to screen against fake ecstasy tablets.

BE CAREFUL

- While low doses of Ketamine can increase heart-rate, at higher doses it depresses consciousness and breathing and is extremely dangerous to combine with downers like alcohol, Valium or GHB.
- Frequent use can cause disruptions in consciousness and lead to neuroses or other mental disorders.
- Ketamine can cause a tremendous psychological dependence. The dissociation from one's consciousness experienced with ketamine can be highly seductive to some people, and there are many cases of ketamine addiction.
- Ketamine is illegal and possession can result in long prison terms.

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WHAT ARE GHB, GBL & B?

- The liquid commonly referred to as "G" may be one of three (or more) chemicals:
  - GHB (gamma-hydroxybutyrate), originally developed as a sedative-hypnotic, or sleep aid.
  - GBL (gamma-butyrolactone), an industrial solvent that is converted into GHB in the bloodstream.
  - B, BD, or BDO (1,4-butanediol), an industrial chemical that is also converted into GHB when ingested.
- GHB has a distinctive salty-soapy taste. GBL and B taste more "industrial," bitter, and unpleasant.
- Undiluted GHB is syrupy. GBL is slightly thinner. B has the consistency of water. In a household freezer, B easily freezes, while GHB and GBL remain liquid.

WHAT ARE THE EFFECTS?

- All three substances are central nervous system depressants and their effects are similar to alcohol, making users feel relaxed and sociable.
- At higher doses they can cause dizziness or sleepiness, nausea and vomiting, muscle spasms, and loss of consciousness during which breathing can be slowed to a dangerously low rate.
- GHB and GBL may be felt within 30 minutes, but peak effects can take up to 2 hours. Many overdoses have occurred from people not waiting long enough before taking more. Effects continue for about 2 hours from onset. B takes longer to feel, and its effects can last longer.

BE CAREFUL

- Combining GHB, GBL, and B with alcohol or sleeping pills, tranquilizers or sedatives is dangerous, even if taken several hours apart.
- IT IS EASY TO OVERDOSE WITH GHB, GBL, OR B. A teaspoon is a typical dose, while two teaspoons can cause unconsciousness. Doses of undiluted GHB or GBL should be ½ teaspoon or less.
- The bottle caps often used to measure doses vary from less than 1 teaspoon to 1½ teaspoons. Using a measuring spoon or syringe to accurately measure doses can reduce the risk of accidental overdose.
- Diluted GHB and GBL settle in the bottle and need to be shaken before use.
- Reactions to all three drugs vary depending on body weight and whether or not the user has eaten or is sleepy. Also, strength may vary greatly from one batch to the next. The right amount one time can cause an overdose another time.
- Additional doses increase the risk of overdose—a rule of thumb is to wait two hours between doses and take ½ the amount of the first dose.
- Because B takes longer to metabolize, more time should be allowed to feel its effects and between doses.
- Don't drive—the effects of these drugs can come on very fast and, unlike alcohol, cannot be controlled.
- Frequent (daily) use of these substances can lead to physical addiction. Withdrawal requires medical assistance.
- Some people dye their G blue with food coloring in order to distinguish it from regular water and help prevent accidental dosing.
- GHB and GBL are illegal under federal and state laws. B is banned under analogue laws in several states.

WHAT IF SOMEONE OVERDOSES?

- If you feel dizzy or sick, get help immediately—unconsciousness can happen very fast. Sit down or lay on your side.
- If someone falls unconscious and cannot be aroused or has a seizure, call an ambulance.
- Keep persons on their side or sitting up so they don't choke if they vomit. Make sure their air passage is clear and their chin is not pressed against their chest.

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SPEED

CRYSTAL METH

WHAT IS SPEED?

- Speed (amphetamine or meth-amphetamine) is a stimulant drug.
- It produces alertness, confidence and raises levels of energy and stamina.
- It reduces appetite and lessens the desire and ability to sleep.

IS SPEED ADDICTIVE?

- Regular use can produce a need to increase the dose to get the same effect, and can lead to physical dependence on the drug.
- Speed can produce a powerful craving for more of the drug.
- Long-term use can result in serious mental and physical problems.

HOW IS SPEED USED?

- Speed can be swallowed, snorted, smoked, or injected.
- Swallowing is the safest method of using speed. The effects come on gradually and last longer than with other methods.
- Snorting speed takes effect faster than swallowing but it can damage the nose.
- Smoking speed takes effect immediately and can more easily lead to addiction.
- Injecting is the riskiest method of using speed.

WHAT ARE THE RISKS OF INJECTING?

- The dose reaches the brain almost immediately, increasing the possibility of overdose.
- Impurities are introduced directly into the bloodstream and can cause septicemia and other infections.
- Repeated injections damage the veins, leading to thrombosis and abscesses.
- Sharing syringes can cause hepatitis and HIV, the virus that can cause AIDS.
- Clean needles are available from needle exchange programs.

BE CAREFUL

- The 'comedown' off speed can make you feel tired, lethargic and depressed. This may tempt users to take more, and can lead to dependency.
- Speed users are at higher HIV and Hepatitis risk through unsafe sex and needle sharing.
- Although rare, speed can cause seizures, heart attacks, strokes, and death from overdose.
- Many users become physically run down, which leaves them susceptible to a wide range of illnesses.
- Extended use of speed can cause psychosis. The user may think that everybody is out to get them, or that they are being followed or watched.
- Mixing speed with other drugs, particularly other stimulants, can increase the risk of adverse reactions.
- Speed is illegal. Possession can result in long prison terms.

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WHAT IS LSD?

- Lysergic Acid Diethylamide (LSD) is a hallucinogenic or psychedelic drug.
- It is usually found absorbed into tiny pieces of paper called "blotter," but is sometimes found as a pure liquid or absorbed into a sugar cube. It is almost always swallowed.
- LSD costs about $5 for a "hit."

WHAT ARE THE EFFECTS?

- The LSD experience is usually described as a "trip" because it is like a journey to another place. This experience may be broken up into four 'phases':

1. The Onset - Approximately 30 minutes after being taken, colors appear sharper, moving objects leave "trails" behind them, and flat surfaces may appear to "breathe."
2. The Plateau - Over the second hour, the effects become more intense. Imaginary visions can appear from nowhere--from shapes in smoke, to lines on the palms of the hand.
3. The Peak - Time is slowed almost to a standstill. Users may feel like they are in a different world, or a movie. For some this is profound and mystical, but it can be very frightening for others.
4. The Comedown - 5 or 6 hours after taking the drug the sensations begin to subside. After 8 hours, the trip is usually over, although residual effects may last until after sleep.

WHAT IF SOMEBODY IS HAVING A BAD TRIP?

- Take the person to quiet surroundings where they feel comfortable.
- Find a friend who can reassure them.
- Stress to them that their panic is caused by the drug, and will wear off in a few hours, if not sooner.
- If they become uncontrollable or hysterical and you cannot calm them down, you may want to call your local poison control center. They can provide you with "triage" information to help you decide whether the person needs to be hospitalized.

BE CAREFUL

- LSD can trigger underlying mental problems and produce delusions, paranoia and schizophrenia-like symptoms.
- It can also produce extreme anxiety states or panic attacks, not only while under the influence of the drug, but for some time after (flashbacks).
- In rare instances, LSD has caused a long-lasting perceptual disorder known as Post Hallucinogenic Perceptual Disorder (HPPD).
- LSD can impair judgement. Users should not drive or operate machinery while under the influence of LSD.
- LSD is illegal and possession can result in long prison terms. Supplying LSD to someone else (whether or not money was exchanged) carries even longer sentences.

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Mushrooms

WHAT ARE MAGIC MUSHROOMS?

- Magic mushrooms are mushrooms that contain psilocybin. Psilocybin is a psychedelic drug with effects similar to those of LSD.
- Psilocybin mushrooms have been used by many indigenous cultures to induce altered states of consciousness during religious rituals.

HOW ARE THEY USED?

- Magic mushrooms are either eaten raw, mixed with food, or brewed into a tea. They can be eaten fresh or dried for later use.
- There is no predictable way of estimating the amount of psilocybin in each mushroom. The amount is determined by the strain, size and age of the mushroom.
- Starting with a small amount before deciding to take more can prevent having too strong a trip, and minimize the chance being poisoned from the wrong type of mushroom.

WHAT ARE THE EFFECTS?

- At low doses, magic mushrooms produce feelings of relaxation, not dissimilar to those of cannabis.
- Users often report laughing a lot and finding things funnier than they would normally.
- At higher doses, the experience is closer to that of LSD, intensifying colors and producing visual hallucinations and feelings of euphoria.
- A mushroom "trip" tends to last about four to five hours.
- Users often report the mushroom experience to be more "earthy" than other psychedelics, increasing emotional awareness and causing less psychological confusion.
- Many users find the mushroom experience to be spiritually significant while others find it frightening.

BE CAREFUL

- The biggest danger associated with magic mushrooms is misidentification. Some mushrooms are poisonous and cause stomach pains, vomiting, diarrhea and even death.
- Some users report getting sick even after ingesting real psilocybin varieties.
- Magic mushrooms can impair judgement. Driving while under the influence of mushrooms is dangerous.
- Magic mushrooms, like all hallucinogens, can trigger underlying mental disorders and cause schizophrenic-type symptoms.
- Users sometimes have "bad trips," which can include confusion, anxiety and panic. In rare instances, users can experience recurring episodes of anxiety and panic (flashbacks) days, weeks or even months after a bad trip.
- Magic mushrooms are illegal. Possession can result in long prison terms. Supplying mushrooms to someone else (whether or not money was exchanged) carries even longer sentences.

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ecstasy

mdma

WHAT IS ECSTASY?

- Ecstasy is MDMA, or 3,4-Methylenedioxymethamphetamine. It belongs to a family of drugs called "entactogens," which literally means "touching within." Other drugs in this category include MDA, MDE and MBDB.
- Before it was made illegal in 1985, MDMA was used by psychiatrists as a therapeutic tool. Studies are currently underway in Spain and Israel assessing MDMA's effectiveness in the treatment of Post Traumatic Stress Disorder (PTSD).

WHAT ARE THE EFFECTS?

- MDMA is a "mood elevator" that produces a relaxed, euphoric state. It does not produce hallucinations.
- MDMA takes effect 20 to 40 minutes after taking a tablet, with little rushes of exhilaration which can be accompanied by nausea. 60 to 90 minutes after taking the drug, the user feels the peak effects.
- Sensations are enhanced and the user experiences heightened feelings of empathy, emotional warmth, and self-acceptance.
- The effects of 'real' ecstasy subside after about 3-5 hours.
- Users report that the experience is very pleasant and highly controllable. Even at the peak of the effect, people can usually deal with important matters.
- The effect that makes MDMA different from other drugs is empathy, the sensation of understanding and accepting others.

WHAT IS THE DOSAGE?

- E is almost always swallowed as a tablet or capsule. A normal dose is around 100-125 mg.
- Black market "ecstasy" tablets vary widely in strength, and often contain other drugs.

IS ECSTASY ADDICTIVE?

- Ecstasy is not physically addictive. However, the drug can often take on great importance in people's lives, and some people become rather compulsive in their use. Taken too frequently, however, MDMA loses its special effect.
- MDMA releases the brain chemical serotonin, elevating mood and acting as a short-term antidepressant. Compulsive users may be unconsciously trying to self-medicate for depression. Effective treatments for depression are available with the proper diagnosis by a qualified physician.

BE CAREFUL

- Ecstasy is illegal and a conviction for possession can carry long prison sentences.
- Frequent or high doses have been linked to neurotoxic damage in laboratory animals. It is still unknown whether such damage occurs in humans or, if it does, whether this has any long-term, negative consequences.
- Some people experience depression after taking MDMA. This is caused by MDMA's action on certain brain chemicals.
- There have been some deaths associated with MDMA. Usually these have been a result of heat stroke from dancing for long periods of time in hot clubs without replenishing lost body fluids.
- Much of what is sold as "ecstasy" on the black market actually contains other drugs, some of which can be more dangerous than MDMA, like PMA, speed, DXM and PCP.
- Mixing ecstasy with alcohol or other drugs increases the risk of adverse reactions.

DanceSafe
Promoting Health and Safety within the Rave and Nightclub Community

getting off right

A Safety Manual
for Injection Drug Users

HARM REDUCTION COALITION
working towards individual and community health

Contents

A compilation of medical facts, injection techniques, junky wisdom, and common sense, this manual reflects HRC's commitment to providing accurate and unbiased information about the use of illicit drugs with the goal of reducing harm and promoting individual and community health.

INTRODUCTION

One of the results of the United States' "zero tolerance" approach to drug policy is a serious lack of accurate information about drugs and drug use. This lack of information makes it extremely difficult for people to make rational and informed decisions about using drugs. "Just say no" is an inadequate message to give anyone about drugs, but is especially dangerous for those individuals already using them. Drug users and those thinking about using drugs need unbiased, non-judgmental, reliable information about the desired effects and undesired risks of the drug(s) they are using or contemplating using.

In addition to the benefits they may experience, some individuals experience extremely negative consequences as a result of using illicit drugs. Some of these harms may be attributable to the effects of the drug itself on the body and the mind. More often drug-related harm is the result of the numerous social, economic, legal, cultural, and political factors that shape the way illicit (illegal) drugs are made available and the conditions under which they are used. Poverty, racism, social isolation, past trauma, sex-based discrimination, and other social inequalities all affect people's vulnerability to and capacity for dealing with drug-related harm. Punitive laws, social policies, and the intense social stigmatization of and discrimination against illicit drug users serve to drive us away from friends and family, as well as health and social services. These are just a few of the factors that increase the dangers associated with using illicit drugs.

Contrary to popular opinion, there are many things that we as drug users can do to take care of ourselves and reduce the possible health and other risks associated with using illicit drugs.

Contrary to popular opinion, there are many things that we can do to take care of ourselves and reduce the risks associated with using illicit drugs. This manual challenges us to take a close look at all the steps we engage in when preparing and injecting drugs in order to figure out if that process can be made safer anywhere along the way. Even if you've been injecting for years, chances are that there are things you can change about the way you do it to help you avoid disease and maintain good health; reduce your likelihood of experiencing injection-related injuries or accidents; help make the fact that you inject drugs less noticeable (if this is something that concerns you); or ensure that injecting remains a viable, comfortable, and safe option for administering your drugs

in the future. Reading this manual might also make you decide that injecting drugs carries too many risks, and that snorting or smoking are more preferable alternatives. Such a decision would be a valid and important way of reducing drug-related harm.

Share this booklet and what you learn with other injectors! Most of us taught ourselves how to inject through a process of trial-and-error that undoubtedly included lost shots, painful misses, swollen limbs, and a great deal of frustration. This manual is intended to help minimize these problems. We need to take responsibility for helping each other live safer and more satisfying lives, free from unnecessary disease and illness and with dignity.

The Harm Reduction Coalition (HRC) does not condone or condemn the injection of illicit drugs. Rather, we recognize that drug injection is a potentially hazardous and intensely stigmatized behavior which many people already engage in and will continue to engage in — in many instances for years at a time — and a behavior that many others will experiment with or come to adopt in the future. A compilation of medical facts, injection techniques, junky wisdom, and common sense, this manual reflects HRC's commitment to providing accurate and unbiased information about the use of illicit drugs with the goal of reducing harm and promoting individual and community health.

This manual challenges those of us who shoot drugs to take a close look at all the steps we engage in when preparing and injecting drugs in order to figure out if that process can be made safer anywhere along the way.

Drug use is a complex experience and issue which affects those who use, their loved ones and the communities in which they live. We hope that this manual will serve to reduce the associat-

ed dangers for people who use drugs or who are affected by drug use. While we can't predict every possible scenario you might encounter, we hope the examples presented in this manual show you how common sense and planning can make any drug using experience safer.

As injectors, we should always be in control of our own drug preparation and intake and not have to rely on anyone else for this; we should always be in control of what goes into our own bodies and how.

The Harm Reduction Coalition (HRC) is committed to publishing non-judgemental information that is relevant to the lives and health of drug users. HRC will be following through on this commitment with future publications.

Please let us know what in this manual is useful, what isn't useful, what you would like more information about, and any other comments or suggestions you might have.

IN THIS CHAPTER

- Setting, Environment & Mood
- Choosing Your Materials
- Preparing Your Shot

There are many steps along the way where something can go wrong, but equally as many places where you can make the process safer.

CHAPTER ONE

GETTING READY: PREPARING YOURSELF & YOUR EQUIPMENT

Preparing for and planning your injection drug use (or any drug use) is one of the most important things you can do to achieve your desired results and to prevent potentially harmful mistakes from occurring in the process. Drug injection is a rather complex activity. There are many steps along the way where something can go wrong, but equally as many places where you can make the process safer. **Before injecting, you should (1) assess the safety of your setting and evaluate your state of mind; (2) make sure you have the best materials you can get, and enough of them; and (3) prepare your drugs as cleanly as possible.**

SETTING, ENVIRONMENT & MOOD

Unfortunately, we don't always have complete control over how we're feeling when we want or need to get high or the circumstances under which we use. **While we may not always be aware of it, where we use, who we use with (if anyone), and our state of mind when we're getting high can all have an impact on injection safety.**

WHERE YOU USE

Some places are safer for injecting than others, and you should always choose from among your options the safest one possible. The ideal location for injecting is one that is relatively clean, dry, warm, and well-lit, and where:

- your chances of getting caught by the police are minimal
- you feel comfortable that there will be no surprise interruptions or unwanted observers
- you can take as much time as you need
- you have adequate space for yourself and your equipment
- you have access to a sink or other source of clean water
- you are sheltered from the wind and weather.

All of these factors should be weighed against each other when choosing a place to get off. It is clear, then, that using in your own home (if you're fortunate enough to have one) or the home of a friend is safer than using in a public bathroom. However, a public bathroom—particularly if it's a single room with a door that locks—is usually safer than injecting in a place such as a public park or the stairwell of an apartment building. In general, but not

always, indoor locations are safer than outdoor ones, and definitely preferable in terms of wind and weather.

If you're injecting in a relatively public place, like a toilet stall in an public bathroom, try to make it look like you're changing your clothes or freshening up. If you know you'll have to be getting off in a location like this where there is no direct access to a sink, bring along a small bottle of water to mix your shot with (it's probably a good idea in any case to make water a permanent part of the works you carry). Most importantly, always try to stay as calm as possible no matter where you're injecting. While it can be nerve-wracking getting off in a public or semi-public place or somewhere else where you're afraid of getting caught, it's important to **keep your wits about you** so that you don't end up knocking over your shot, spilling your drugs, being unable to get a hit because you're so nervous, or getting blood all over.

Be considerate of others—no one likes coming across a used needle and syringe in their apartment building or seeing bloody tissue in a public toilet, and there's no reason they should have to.

So, use common sense and planning when choosing a location to inject. If at all possible, wait to get off until you've found a place where you feel relatively comfortable and can minimize the risk of getting arrested. Make sure you have all the materials you need before you begin, and don't assume you'll always have access to water. Finally, be considerate of others—no one likes coming across a used needle and syringe in their apartment building or seeing bloody tissue in a public toilet, and there's no

reason they should have to. Drug injectors have a bad enough rap as it is. **Let's not give people the ammunition to keep us marginalized and oppressed!**

WHO YOU USE WITH

Although it is not always (and for some people ever) desirable or possible to inject with someone else present, having another person around when you get high can be a safety net, particularly in terms of surviving overdose. For those who live alone, however, having someone else present every time you inject may be unrealistic; and some people simply prefer using by themselves. Another complication is that many of us use in secret for fear that we'll be rejected or judged by those we come out to. It is important to try to put together a support system of people who know you use and who you can rely on for support or in case of an emergency. This may be easier said than done, however, and even though injecting drugs may have become a mundane activity for you, it is frequently shocking for non-users to learn that someone they know engages in this activity. Disclosing your use to the wrong person could add untold stress to your life, so make this decision carefully.

It is important to try to put together a support system of people who know you use and who you can rely on for support or in case of an emergency.

Try to make yourself available to other users who may need support. If you're worried that a friend has been using too much, for instance, have them check in with you by phone after they get high to make sure everything is okay. And finally, avoid using with people you don't like or who could care less about what happens to you if you were to overdose.

ASSESSING YOUR MOOD

The quality of any drug experience is determined not only by the drug itself (including factors like potency and purity), but also depends on how the drug is administered, the environment in which it is taken, and the mood or mindset of the individual at the time he or she takes the drug. It is therefore important for anyone who is going to take a drug to assess their mood and mindset before they get high. You should always be aware of how you're feeling prior to altering your consciousness.

Feeling relaxed, confident, and calm will help insure that you will take your time to inject hygienically and properly. If you're in withdrawal, panicked about getting high in a public bathroom, or otherwise anxious and upset, the chances of something going wrong increase. Take a few deep breaths and try to gain some composure before you begin to prepare and inject your drugs in order to prevent accidents and make sure you get a hit without harming yourself in any way.

CHOOSING YOUR MATERIALS

There are a lot of materials needed to inject drugs—what those of us who use refer to as our "works." **Ideally, the type of equipment someone uses to inject will be appropriately matched to the drug they're using, where they plan to inject it, the condition of their veins (if they're mainlining), and other factors.** Unfortunately, drug injectors do not always have regular, legal access to the materials they need and are frequently forced to make do with what they can get. This section of the manual discusses what materials are best for injecting drugs and how to use

them safely; and offers suggestions for second-best options when the safest equipment is for some reason unavailable.

NEEDLES AND SYRINGES

The needle and syringe is arguably the most important piece of equipment needed to inject drugs. Due to legal restrictions on possession and over-the-counter sale, it can also be the most difficult piece of equipment to obtain.

Needles and syringes are **not** all the same. It is important to find a needle and syringe that you feel comfortable with, so if you have the opportunity, experiment with different types, sizes, and brands of injection equipment until you've found the one that works for you. Or you may find that you'll use different equipment at different times depending on what and where you're injecting. Among the things you should consider when choosing a needle and syringe are:

NEEDLE GAUGE, which refers to the size of the bore or hole in the needle. With needles it is important to remember that the higher the gauge, the thinner the needle (and the smaller the hole). A 28 gauge needle (abbreviated 28G) is therefore thinner than a 25 gauge needle, which is in turn thinner than an 18 gauge needle. Most intravenous injectors use either a standard insulin set which typically has a 27G or 28G needle (and an orange cap), or a standard tuberculin set with a 25G needle (frequently referred to as a bluetip because of its color).

The smaller gauge needle you use, the smaller the puncture wound, and therefore the less opportunity for infection to occur. Using a smaller gauge needle is also likely to

result in less bleeding. Intramuscular injections must be given with larger gauge needles (frequently 21G or 23G), and certain substances such as injectable steroids and hormones can only be administered intramuscularly. Intravenous injectors typically use needles no larger than 25G, and whenever possible, needle gauge should be matched to the size of the vein into which you're injecting. If you're using small, delicate veins like those in the hands, for instance, a thinner needle such as a 28G is the safest choice.

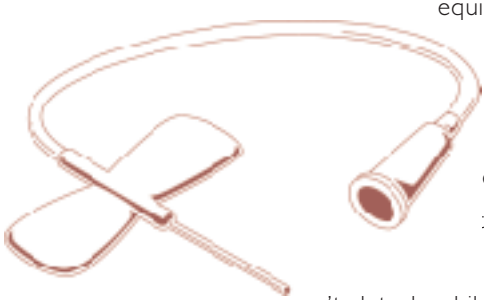
Drugs that are cut with a lot of impurities, like white powder or tar heroin, may clog the point of the syringe. The higher the gauge (therefore the thinner the needle and the smaller the hole), the more likely it is that the point may get clogged. This is particularly true with brown tar heroin.

Needle Length. Insulin needles are typically ½ inch in length and tuberculin needles are typically ⅝ of an inch in length—lengths that most intravenous drug injectors find adequate if not ideal. **A needle that is too short may miss your vein, and one that is too long may go right through it or be difficult to properly position.** Longer needles are often appropriate for intramuscular injections. As inscribed on packaging, needle length appears after the gauge number: 28G½ refers to a 28 gauge needle that is ½ inch long.

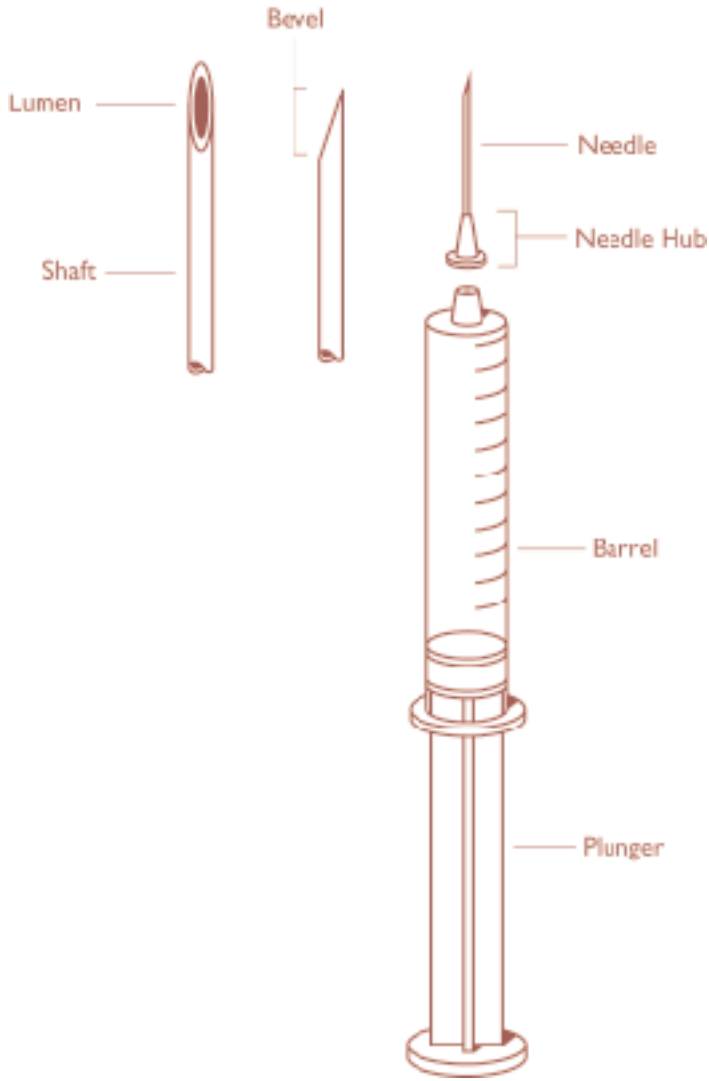
Brand. Most drug injectors find that, if given the opportunity to try out different brands of needles and syringes, they will find one that they prefer over all others. Different manufacturers create needles and syringes of varying quality. Some brands of needles are more comfortable to inject with than

others, and the plungers on some brands of syringes are easier to manipulate than on others.

ONE-PIECE SETS VERSUS TWO-PIECE, DETACHABLE SETS. With some types of injection equipment, the needle detaches from the syringe, resulting in two separate pieces. Standard insulin injection equipment is typically one piece, while tuberculin needles and syringes are often detachable. Detachable, two-piece equipment often has a larger reservoir above the needle in which a lot of blood can collect. If you're using a two-ece set, make absolutely sure : the needle is securely fas- to the syringe so that it does- n't detach while you're injecting, causing you to lose your shot. Lastly, you might find that using a butterfly set—often used for drawing blood from hospital patients—is helpful when getting off in the hands or feet, but this type of set can be difficult to obtain. (Ask your local exchange if they have any.)



SYRINGE SIZE. Standard insulin and tuberculin syringes are typically 1 cc in size and are calibrated by .10 cc's along the barrel of the syringe. Most drug injectors find this size ideal and would rarely need use of a larger syringe, although some drug injectors like to use ½ cc syringes. Syringes other than 1 cc in size may be difficult to obtain.



STANDARD, DETACHABLE, TWO-PIECE NEEDLE AND SYRINGE

GUIDELINES FOR SAFER INJECTING

As important as choosing an appropriate needle and syringe is how you use them. Below are some very important guidelines you should follow in order to make the process of injecting as safe as possible.

• ONE SHOT = ONE NEW NEEDLE AND SYRINGE.

In the same way that hospitals will use a needle and syringe only once and then dispose of it, this is the gold standard that anyone who injects drugs should also strive for. Needles dull quickly, even after just a few uses. Using dull needles causes unnecessary trauma to the veins and surrounding tissue, results in a larger puncture wound and increased bleeding, and is simply not as comfortable as using a new, sharp needle every time. **Attempting to sharpen a needle (on a matchbook, for instance) is dangerous because it can create a burr on the needle that can cause significant damage to the veins, or weaken the point and cause it to break off in your vein.** Also, new needles and syringes are sterile as opposed to simply clean, which means they're free of all biological matter that, if present, can cause infection. Using a new, sharp, sterile needle and syringe for every injection and then disposing of it is simply the safest possible way to go.

In the same way that hospitals will use a needle and syringe only once and then dispose of it, this is the gold standard that anyone who injects drugs should also strive for.

• AVOID SHARING NEEDLES, SYRINGES, OR OTHER DRUG INJECTION EQUIPMENT.

Blood or other matter that remains in a needle and syringe after someone has used it can be passed on to anyone else who uses that same injection equipment. **The same applies to cookers, cottons and spoons.** In this way, life-threatening viruses such as **hepatitis** and **HIV** can be transmitted from one injector to another. **The only to definite way to avoid disease transmission of this sort is to never share needles, syringes, or other injection equipment.**

It is therefore extremely important for every injector to have his or her own set of works, and an ample supply of needles and syringes so that they never have to share or re-use their own—but especially others'—injection equipment.

- **IF YOU *ABSOLUTELY MUST* SHARE NEEDLES, SYRINGES, OR OTHER DRUG INJECTION EQUIPMENT, BE SURE TO CLEAN IT THOROUGHLY BEFORE RE-USE.**

If you find yourself in a situation where you must use someone else's injection equipment or they must use yours, follow the cleaning instructions on page __ of this manual to reduce the likelihood of transmitting a blood-borne illness. Sharing injection equipment even after it has been cleaned is definitely a second-best choice because blood and other matter can remain in a needle or syringe even after cleaning. **Cleaning needles and syringes is a complicated process that, even if done according to the best scientific advice currently available, is not a 100% fool-proof method of avoiding harmful bacteria, viruses, and other blood-borne pathogens.**

- **FLUSH YOUR NEEDLE AND SYRINGE WITH WATER SEVERAL TIMES AFTER USE IF YOU PLAN TO RE-USE IT AT A LATER TIME.**

While it is safest to use a new needle and syringe for every injection, if you know that you'll have to re-use your injection equipment at some later time, be sure to flush it several times with cold or room-temperature water so that it doesn't become clogged with blood or other matter. **(see cleaning instructions on following page)**

HOW TO CLEAN A NEEDLE & SYRINGE

As already mentioned, the only sure way for drug injectors to avoid contracting blood-borne infections and diseases like hepatitis and HIV is to never use someone else's works (including needles and syringes, cookers, cottons, or water) or let someone else use yours. Even though injection equipment might look clean to

the naked eye, tiny amounts of blood can remain in the works which can result in infection.

If you find yourself in a situation where you *absolutely must* use someone else's works or they *must* use yours, you can reduce the likelihood of disease transmission by carefully cleaning the equipment before you use it. **Follow these instructions carefully:**

1. Rinse the needle and syringe with cold water several times (hot water will cause blood to clot, making it harder to remove). If you're using a detachable needle and syringe, you might want to take the equipment apart to clean it more thoroughly. Be sure to discard the water you use to rinse the equipment.
2. Flush the needle and syringe with undiluted household bleach. Be sure to fill the syringe all the way up. Keep the bleach in the syringe for a full two minutes while shaking it. Discard the bleach.
3. Thoroughly rinse the needle and syringe with clean, cold water to remove any remaining bleach. Discard the water.

If you do not have bleach, you can substitute hydrogen peroxide, a solution of dishwashing liquid and water, or rubbing alcohol. Use high-proof drinking alcohol, such as vodka or rum, if it's all you've got.

IMPORTANT: In order for bleach to kill hepatitis B that might be in the syringe and/or cooker, you *must* leave the bleach in the syringe and cooker for a full two minutes. It is unclear whether bleach kills hepatitis C, even after two minutes. **This should also kill any HIV that might be in the equipment.** (30 seconds is believed to do this.)

Be sure to clean the cooker with bleach if it's going to be shared. Split whatever cotton you have in two before you use it–it's virtually impossible to clean such a filter. And remember that sharing water is one of the

most efficient ways to pass on or contract a virus or other infection-causing organism.

Rinse your equipment with cold water after you've used it in order to prevent any residual blood from clotting, especially if you plan to re-use it later.

If you purchase needles and syringes on the street, clean them before you use them: sometimes dirty equipment is re-packaged and sold as new. Do **not** clean equipment that is sterile; something that is sterile is as clean as you can get it, and "cleaning" it could actually contaminate it.

COOKERS AND SPOONS

photograph: Kif Design

Cookers and spoons are used to dissolve (cook up) powdered and solid drugs for injection.

- If using a spoon, try to find one that is rounder and deeper than an average teaspoon or tablespoon—closer to

the shape of a ladle—to decrease your chances of spilling your drugs. You might want to bend the handle to prevent the spoon from rocking or tipping over.

- If using a bottle top or something similar, be sure you've removed any plastic or paper lining *without scratching the cap's finish.*

Always make sure that your spoon or cooker is as clean as possible; like needles and syringes, it should never be shared with anyone else because doing so can transmit viruses and infections from one person to another.

- You may want to fashion a handle for your cooker with a bobby pin, paper clip, bag twist tie, or something similar so that you don't burn your fingers when cooking your drugs. Be sure the handle is securely fastened to the cooker so it doesn't fall off, causing you to lose your shot.
- Always make sure that your spoon or cooker is as clean as possible; like needles and syringes, it should never be shared with anyone else because doing so can transmit viruses and infections from one person to another.
- Always place your spoon or cooker on a level surface and maneuver it carefully so that you don't spill your shot.

COTTONS (FILTERS)

Most injectors draw their drug solution from a cooker or spoon into a syringe through some type of filter—most often a piece of cotton or other absorbent material. The filter acts to keep out particulate matter and other foreign objects you don't want in

your shot, and enables you to get just about every drop of the drug solution into your syringe so that none of it is wasted.

- Clean, 100% cotton from a Q-Tip or cotton ball is the safest thing you can use to filter your drug solution. Filter paper or a small piece of tampon are safe alternatives.
- Rayon and other synthetic fibers often don't absorb liquid as well as cotton, and may prevent you from being able to adequately draw up all of your drug solution.
- **Cigarette filters are not safe to use** since they contain tiny pieces of glass, and, if from a cigarette that has already been smoked, substances from the smoke that can be harmful if injected.
- Pocket lint may work if it's all you've got.
- You might consider skipping the filter altogether if you have nothing safe to use.
- Use a fresh cotton every time you shoot up, and as with needles, syringes, and cookers, never use someone else's cotton or let them use yours; **infections, bacteria, and viruses can all be transmitted through sharing cottons.**
- Make sure your fingers are as clean as possible before you tear off and roll up your cotton.
- Finally, many of us cook up our old cottons to squeeze what we can out of them when we have no more money for drugs. Unfortunately, fungi and bacteria can live and grow in these old cottons (which, because they are moist after use, provide ideal environments for microbes) and cause "cotton fever" when re-used at a later time. Cotton

fever is an infection characterized by chills, sweating, fever, and other flu-like symptoms. It may go away on its own or, if it persists or worsens, require medical attention.

MIXING AND RINSE WATER

You'll need water in which to dissolve your drugs and to flush out your needle and syringe after you've gotten off. This is particularly important for people with HIV, AIDS, or other serious health conditions to use the cleanest water you can find. **Remember, you're putting the stuff straight into your bloodstream!**

- Using sterile water to dissolve (cook) your drugs is your safest option. You can buy it at any drug store or pharmacy. **DON'T** buy sterile saline (salt water) because your drugs may not dissolve in it.
- After sterile water, your next best option is using water that you boiled for at least 10 minutes and stored in a sealed jar. (Don't use water that you boiled several days ago and which has been sitting in a pot or kettle.)
- If sterile or boiled water are not viable options for you, fresh, cold tap water or bottled water are the next best choices.

Draw from the tank, discard to the bowl

- If you're getting off in a location without a sink or other fresh water source, try to find a toilet and **use the water from the tank (never use water from the bowl).**

- **Using water from a stagnant (non-moving) source like a puddle or old tire can cause serious infections;** instead, use water from a fire hydrant, stream, or other moving body of water (even water flowing in a gutter is safer than a puddle) if this is all you can find. **THIS WATER CAN STILL GIVE YOU VERY SERIOUS INFECTIONS.**

Don't contaminate your entire water source by sticking a used syringe in it.

- Be sure the glass or whatever you have your water in is clean. Don't contaminate your entire water source by sticking a used syringe in it. Pour some water into another container if you want to rinse your syringe out, and always be sure to discard the water you use to flush your injection equipment so no one else accidentally uses it.

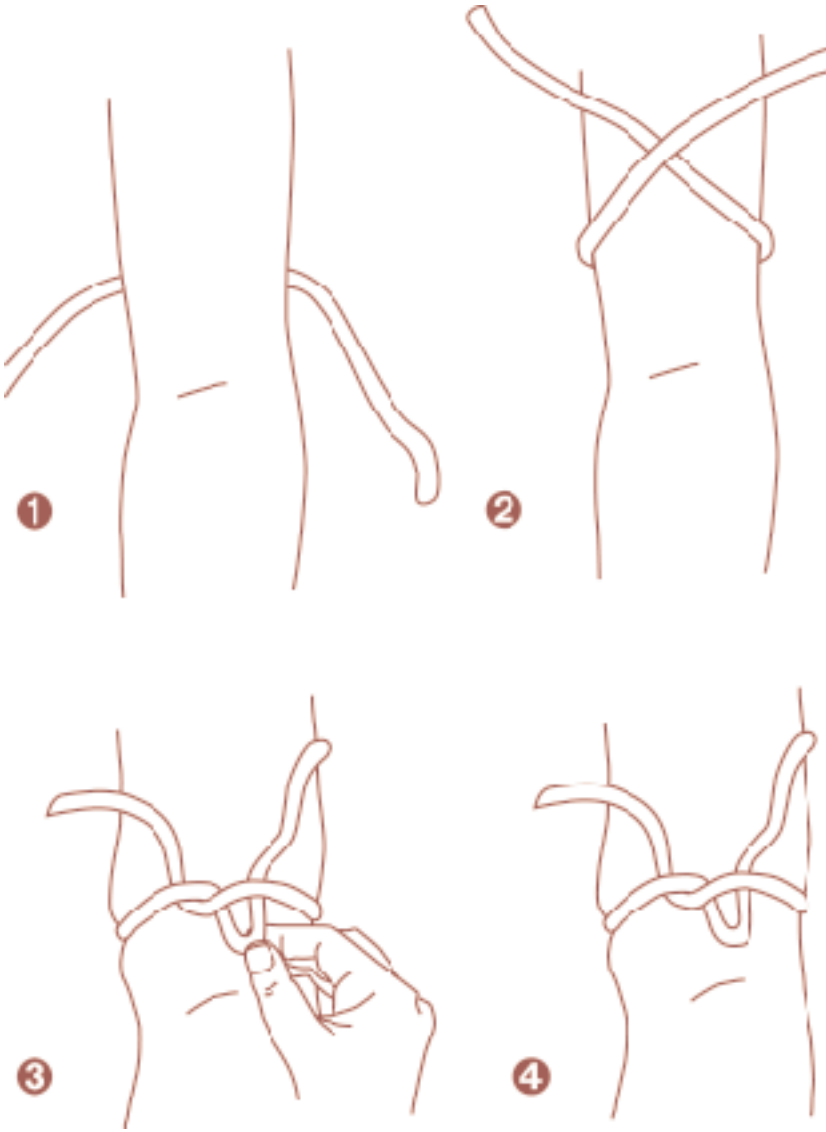
- **Sharing contaminated water can transmit viruses and bacteria.** Make sure everyone's got their own.

- Finally, as mentioned above, you might want to get into the habit of carrying a little bottle of water as part of your works in case you need to get off in a place where there's not a sink or other clean water supply.

TOURNIQUETS (TIES)

Intravenous drug injectors usually need something to "tie off" with that will restrict blood flow and cause the veins to bulge out, making them more accessible for injection.

- Elastic tourniquets (like the kind that are used in hospitals) or stockings are kinder to your skin than leather belts or similar ties. They're also better at securing rolling



TYING OFF

veins like the ones in your forearm. Neckties, lubricated condoms, and socks are other items that, because they're softer and more pliable than leather, make better tourniquets than a belt.

- Use a slip-knot when tying up so that you can remove the tourniquet quickly if necessary (see illustration). Never leave the tie on for too long to prevent your circulation from getting cut off. **If you lose sensation in your limb or notice it turning blue, remove the tourniquet immediately!** If you've already tied up but need to re-cook your shot or transfer it to another syringe, take the tourniquet off and re-tie it just before you're ready to inject. (See illustration on preceding page.)

LIGHTER OR MATCHES

If you're using tar heroin or crack, you'll need something to heat your drug solution with in order to make it dissolve.

- A gas stove works fine if you have access to one, although carrying your spoon or cooker to the stove after you've filled it may result in a spilled shot, so prepare everything at the (hopefully reasonably clean) stove.
- Lighters produce a larger, hotter, easier-to-control flame than matches do, and can be ignited using only one hand. Also, a lighter won't give off a sulfur smell like matches do, which could give you away if you're getting off in a public bathroom.

OTHER HELPFUL MATERIALS

While the needle, syringe, cooker or spoon, cotton, tourniquet, and a lighter or matches are all necessary for preparing and injecting drugs, there are a few other materials it's helpful to have if you can get access to them:

- Alcohol pads are extremely helpful for cleaning an injection site prior to getting off to prevent baceria and dirt on the skin from entering your bloodstream.
- To prevent blood from getting all over your shirtsleeves or clothes—a situation that will require a lot of explaining if you're at work or visiting a friend who doesn't know you use—carry tissues with you and maybe even a Band-Aid to apply after you've gotten off.

PREPARING YOUR SHOT

Preparing your shot as cleanly and as hygienically as possible can help you avoid of illnesses and infections, some of which can be quite serious and require hospitalization (see chapter 3). Every time you inject, you're creating the means by which bacteria and other infection-causing microbes can directly enter the body, and, if you mainline, the bloodstream itself. **The skin is the body's first immune system component, and we open ourselves up to potential infection every time we break it.** That's why it's so important that the equipment and the process we use to shoot up is as clean and safe as possible.

FIRST STEPS

There are a few common sense things you should do before preparing and injecting your drugs.

- First, if at all possible, **thoroughly wash your hands with soap and water.** Any bacteria or germs you have on your hands can contaminate anything you touch when preparing your drugs. At the least, rinse your hands with water, wipe them with a moistened towelette, or otherwise try to get your hands as clean as possible.
- Inject your drugs in as clean a place as you can find and always try to use a level surface so you don't tip anything over and lose your shot.
- If they're not brand new, make sure all of your materials are thoroughly cleaned, and don't unwrap or uncap your needle and syringe—especially if it's sterile—until you're going to use it.
- **If you're getting off with someone else, make sure each person's equipment is clearly separate from yours so that accidental mix-ups and sharing don't occur: needles, syringes, and water glasses all look the same!**
- Finally, calm yourself down if you're upset for some reason. Consider whether smoking or sniffing a little bit of your drug will help you relax if you're in withdrawal or otherwise freaking out.

COOKING YOUR SHOT

Powdered drugs must be dissolved into a liquid form before they can be injected—a process known as "cooking." Different drugs dissolve differently. If you're using something like injectable morphine or hormones that are already in liquid form, cooking is completely unnecessary. Some drugs will dissolve in water without being heated; some people cook their cocaine, for instance,

Inject pills only as a last resort; injecting the particles from a pill can cause all sorts of problems, particularly abscesses.

while many more do not because it can clot when heated, mess up your shot, and clog your needle.

Though brown heroin will dissolve without an acid, heating it along with an acid like powdered vitamin C will help dissolve it more easily. **DON'T USE LEMON JUICE** because it can cause fungal infections that can damage the eyeball. Finally, pills must be crushed up or pulverized as finely as possible before being dissolved for injection. Many drug manufacturers now formulate their pills so that they're not able to be dissolved in water at all but just sort of clump up when you heat them. If you're going to try to inject a pill, dissolve a small corner of it first so that you don't waste the entire thing. And **inject pills only as a last resort;** injecting the particles from a pill can cause all sorts of problems, particularly abscesses. For this reason, **you should avoid muscle-popping or skin-popping pills altogether**. (see pages 41 and 44)

Ideally, your drug solution will be clear and particle-free. If it's not, you may want to try to re-cook it, although sometimes street drugs contain cuts that will not dissolve no matter what you do. In this case, use your cotton to filter out as much of the cut as you can. Lastly, **don't re-cook a shot with a lot of blood in it as the blood can coagulate and clog your needle**.

After you've cooked up your drugs, draw the solution into your syringe through your cotton. Tap out all the air bubbles and push the liquid to the tip of the needle.

DIVIDING DRUGS

If you've bought drugs with someone else, you need to ensure that everyone gets their fair share in a safe way. There are several ways this can be done:

- The safest way to divide drugs is to split the powder or tar and have each person cook up their own drugs with their own materials.
- If this first option is for some reason not acceptable, the drugs can be cooked up first (using sterile equipment!) and then divided (using sterile syringes!) after they're in liquid form.
- **Backloading (Piggybacking):** A single, sterile syringe can be used to draw up equal amounts of the liquid which can then be carefully squirted into the back of each person's sterile syringe after the plunger has been removed. (See illustration on following page.)
- **Frontloading:** The drug is carefully squirted into the front of each person's syringe that still has the plunger in it but from which the detachable needle has been removed. (See illustration on following page.)
- Always be sure any equipment you use to cook up and divide drugs is new (preferably sterile) or, as a second-best option, properly cleaned.

BACKLOADING (PIGGYBACKING)

❶ Remove the plungers from two syringes. Using a third syringe, draw up the hit and empty half into each of the syringes.

❷ Carefully replace both plungers.

FRONTLOADING

Photograph: Jean Paul Grund and Rene Overbeek from "Drug Sharing and HIV Transmission Risks: The Practice of Frontloading in the Dutch Injecting Drug User Population" (Journal of Psychoactive Drugs, Vol. 23(1), Jan.-Mar. 1991).

IN THIS CHAPTER

- Taking Control
- Mainlining (Intravenous Injection)
- Hierarchy of Safety for Choosing Intravenous Injection Sites
- Veins vs. Arteries
- Veins vs. Nerves
- Exercises for Improving Vein Visibility
- Some Tips for "Getting Veins Up"
- Muscle-Popping (Intramuscular Injection)
- Skin-Popping (Subcutaneous Injection)

This section of the manual presents information on proper injection technique (intravenous, intramuscular, and subcutaneous injection).

CHAPTER TWO

GETTING OFF: THE BASICS OF SAFER INJECTION

As important as preparing your drugs as cleanly as possible is injecting them as safely and as carefully as possible. This section of the manual presents information on proper injection technique (intravenous, intramuscular, and subcutaneous injection). In addition to mastering proper injection technique, regular intravenous injectors must also be sure to practice good vein care, and all injectors should be aware of the various things they can do—like rotating injection sites—that will help them avoid infection and maintain good health.

TAKING CONTROL

It is extremely important for regular injectors—particularly those who are physically dependent—to be able to prepare and safely inject drugs on their own. Having to rely on someone else to get you off can open the door to all kinds of abuse: don't let anyone have this much power and control over you or your ability to function. Learn how to safely and properly inject yourself!

Having to rely on someone else to get you off can open the door to all kinds of abuse. Don't let anyone have this much power and control over you.

Learning how to inject properly, like mastering any other complicated activity, takes practice. After a while, you will no doubt be able to hit veins you've never used before on the first try, causing minimal trauma to the injection site and leaving a tiny puncture wound that barely bleeds. You will develop 'a feel' for where your veins are and how you need to position and insert your needle in order to get a good hit.

Perhaps the safest way to learn how to inject is to have someone who knows what they're doing teach you. An experienced injector can walk you through the process of injecting, or perhaps even demonstrate it, and prevent you from making any dangerous mistakes. If possible, find someone who you trust to mentor you through this process. And talk with other injectors about the various tips and wisdom about injecting they've picked up over the years.

Hopefully, there are things in this manual that will be new and helpful even to those of us who have been injecting for a long time. However, reading about how to inject and actually doing it are two different things. If you are new to injecting, we can only caution you to read this manual thoroughly before you begin and to go slow and be aware of everything you're doing. **If the risk of injecting drugs seems too dangerous after you've read this booklet, deciding not to administer drugs via injection is a harm reduction response that we whole-heartedly support.**

If the risk of injecting drugs seems too dangerous after you've read this booklet, deciding not to administer drugs via injection is a harm reduction response that we whole-heartedly support.

MAINLINING (INTRAVENOUS INJECTION)

Intravenous injection (mainlining), or injecting a substance directly into the bloodstream through a vein, is one of the fastest ways to deliver a drug into your system. **It is also the riskiest method to use in terms of overdose** (as opposed to sniffing, smoking, or oral administration) because the entire dose enters the body all at once and very quickly. Injecting intravenously usually gives the user a "rush" that many people report to be extremely pleasurable, a sensation that does not occur with intramuscular or subcutaneous injection. **While each injection method carries its own risks, mainlining is arguably the riskiest** since it creates a direct opening between the bloodstream and the outside world. Heroin, cocaine, and amphetamine are three drugs that are commonly administered intravenously.

CHOOSING AN INJECTION SITE

People who inject drugs often have one or two favorite places to inject—sites that feel the most comfortable, are easy to access, and where you almost always get a clean hit on your first try. While it may seem awkward at first, it is important to learn how to inject in other places that may not seem as comfortable or accessible on your first couple of tries. If you keep injecting in your favorite spots over and over without letting the veins repair themselves they will become leaky, making your shot less satisfying and harder to hit; could become seriously infected; and will eventually collapse or scar so badly that they become altogether unusable and interfere with circulation. So, it is very important to rotate the sites you use to inject. Try to use a new site for each new injection and go back to sites you've already used only after they've had time to rest and repair themselves.

In addition to learning to inject in new places, it is also important to learn how to inject with either hand so that if the veins on one side of your body need a rest or are otherwise unusable, you're able to inject into the veins on the other side of your body—even if you need to use your non-dominant hand to do it. The next time you're in withdrawal and really need to get off but can't find a vein in your usual spot, you'll be thankful you taught yourself how to inject into the other arm!

CLEANING THE INJECTION SITE

Any time you inject intravenously, you risk pushing bacteria, fungi, and any other infection-causing microbes that are on your skin directly into your bloodstream. **It is therefore extremely important to thoroughly clean your injection site prior to getting off.** Alcohol pads work well for this purpose, but be sure to wipe in

only one direction and not in a circular motion which will cause the dirt and germs to stay on your skin. Plain old soap and water also work fine, as do rubbing alcohol, hydrogen peroxide, or any other type of cleaning agent or disinfectant. Be sure not to touch the injection site with your fingers after you've cleaned it. **Routinely cleaning the skin prior to injection is one of the most important things you can do to reduce your risk of endocarditis, blood poisoning, and similar infections** (discussed in chapter 3).

TYING UP

Use gravity to bring blood to the limb you're going to use to inject before applying your tourniquet (tie): swing or hang your arms, make a fist, etc. Tie your tourniquet in such a way that it can be easily removed if necessary (see illustration p. 24). Try to secure 'rolling' veins like those in your forearms before you inject into them. Finally, be sure not to leave the tourniquet on for too long. If you feel your limb becoming numb or notice it turning blue, undo your tourniquet and don't retie it until you're ready to inject.

INSERTING YOUR NEEDLE

Insert the needle into your vein with the needle bevel opening facing up, at a 15 to 35 degree angle, and always in the direction of the heart. The more perpendicular the needle is to the injection site, the greater chance you have of sticking the needle through the vein instead of into it. (See illustration on following page.)

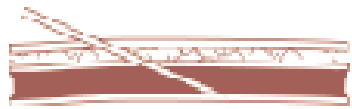
REGISTERING

Once you think you're in a vein, pull the plunger back to see if blood comes into the syringe. If so, and the blood is dark red and slow moving, you know that you've hit a vein. You can now untie your tourniquet and proceed to inject your drugs. If no

CORRECT NEEDLE INSERTION

Correct insertion technique; blood flows freely into needle.

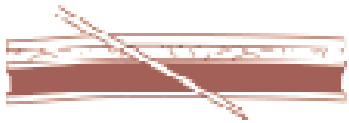
INCORRECT NEEDLE INSERTION



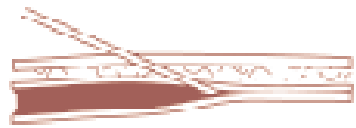
Bevel on vein lower wall does not allow blood to flow.

Needle partially inserted causes blood leakage into tissue.

Bevel on vein upper wall does not allow blood to flow.



Needle inserted too far.



Collapsed.

blood or only a very tiny amount of blood comes into the syringe when you pull back, you're not in a vein and will have to untie your tourniquet, pull your needle out, and try again. If you proceed to inject without being properly positioned in a vein, you'll be putting your drugs into the tissue surrounding the vein, under the skin, or some other place. It will probably be painful and become swollen, and the effects of your drugs will come on much more slowly. You also risk abscess formation and other possible problems.

If there's too much blood in your shot to tell if you're properly registering, split the shot into two and dilute each half with water.

Some people like to 'boot' their syringe after they've injected their drugs—that is, pull back the plunger, draw blood into the syringe, and re-inject it. Some injectors like to do this several times, ostensibly to rinse out any drug solution that remains in the syringe. **Because of all the blood involved, you might want to refrain from booting if you know you're going to be cleaning your needle and syringe and allowing someone else to use it.** Be sure to thoroughly flush your needle and syringe with water after booting if you plan to re-use it at a later time, so that blood doesn't clog the needle.

PULLING OUT

After you've successfully injected your drugs, carefully pull the needle out of the injection site at the same angle at which it went in. (To minimize bruising, you should have untied your tourniquet before you injected your shot.) Apply pressure to the injection site to stop any bleeding. If you're getting off in a public place, it is a good idea to have some tissue or Band-Aids around so you

don't get blood all over your clothes. **Don't use alcohol pads on a fresh injection wound: alcohol will cause it to bleed more, not less.**

MISSED SHOTS & AFTERCARE

Don't apply creams, salves or oils you use to treat your track marks or bruising until the injection wound has begun to close (a couple of hours after injecting, otherwise you might cause an infection. Treat missed shots (those that ended up somewhere other than in your vein) immediately with a warm water soak or compress to reduce the likelihood of irritation and abscess formation. Warmth will open the capillaries and bring disease-fighting white blood cells to the affected area.

MAINLINING COCAINE

Cocaine has a numbing effect on the veins and causes them to constrict (shrink), so **if you're shooting coke, you should be extra careful to register properly and make sure you're in a vein before you inject your drugs.** Also, chances are that if you're shooting coke, you'll be injecting many times in a short period of time with perhaps only several minutes elapsing between each injection. This can be traumatic on the veins and the surrounding tissues, and result in a lot of bleeding.

- Try to use a sterile, sharp needle for each injection;
- make sure you keep your injection equipment separate from anyone else's you're getting off with;
- and try to give the area a good rest for a few days.

You may experience some pain and swelling after such intense activity.

MAINLINING CRACK

Because crack comes in a solid form (rock), it is necessary to dissolve it first. The safest way to do this is with powdered citric or ascorbic acid–ask your local needle exchange or health food store where to find it. Avoid lemon juice or vinegar, as these can lead to serious infections.

To dissolve crack: put crack and citric or ascorbic acid (about a pinch to a slab) in the cooker; add plenty of water; mash and mix well.

SHOOTING SPEED

Because speed is often cut with such dangerous chemicals, **it is very important not to miss your shot.** Skin-popping speed is extremely painful, may cause an abscess, and will take a long time for the body to absorb. If you get the shakes after doing a few shots, it may be helpful to have a friend inject you if you are not using alone. Because the quality of speed varies so dramatically, a tester shot is a good idea.

Skin-popping speed is extremely painful, may cause an abscess, and will take a long time for the body to absorb.

HIERARCHY OF SAFETY
for Choosing Intravenous Injection Sites

The following is a breakdown of possible intravenous injection sites, beginning with the safest options and moving toward the least safe ones.

ARMS

Arms, first upper then lower, are the safest sites for injecting. You should be careful to secure the 'rolling' veins in the forearms before you inject into them. Arms are also good if you're concerned about hiding your injection or track marks (although wearing long sleeves in the summer can be a drag!).

HANDS

Hands are somewhat less safe than arms because the veins are significantly smaller and more delicate and therefore more likely to bruise or become damaged. Circulation is also slower in the hands, causing healing to take longer. If you're getting off in your hands, be sure to use the thinnest needle possible (highest gauge) or, if you can find one, a butterfly needle (see illustration on page 8). Be vigilant about rotating the sites, and keep in mind that it is difficult to conceal injection marks and bruises on the hands.

LEGS

Circulation in the legs may be poor, especially in people who don't use theirs a lot. **Veins in the legs are more likely than those in the arms to develop clots that can obstruct circulation and eventually break off and lodge in the lungs or heart.** Also, damaging the valves in the leg veins is more serious that damaging those in the arms since they play a greater role in getting blood back to the heart.

FEET

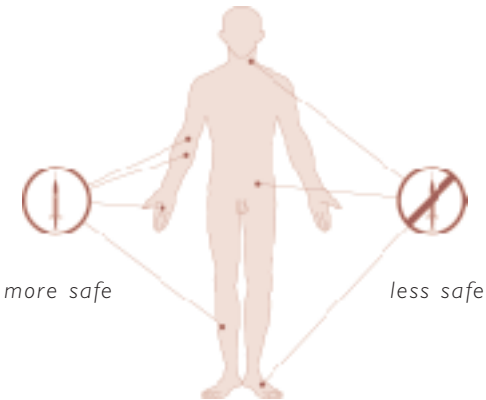
As with the hands, the veins in the feet are generally smaller than in other parts of the body, and close to nerves, cartilage, and tendons which you want to avoid hitting when you inject. Because they are farther from the heart than the veins in the hands, arms, and legs, blood circulates more slowly in the foot veins and they

HIERARCHY OF SAFETY Continued...

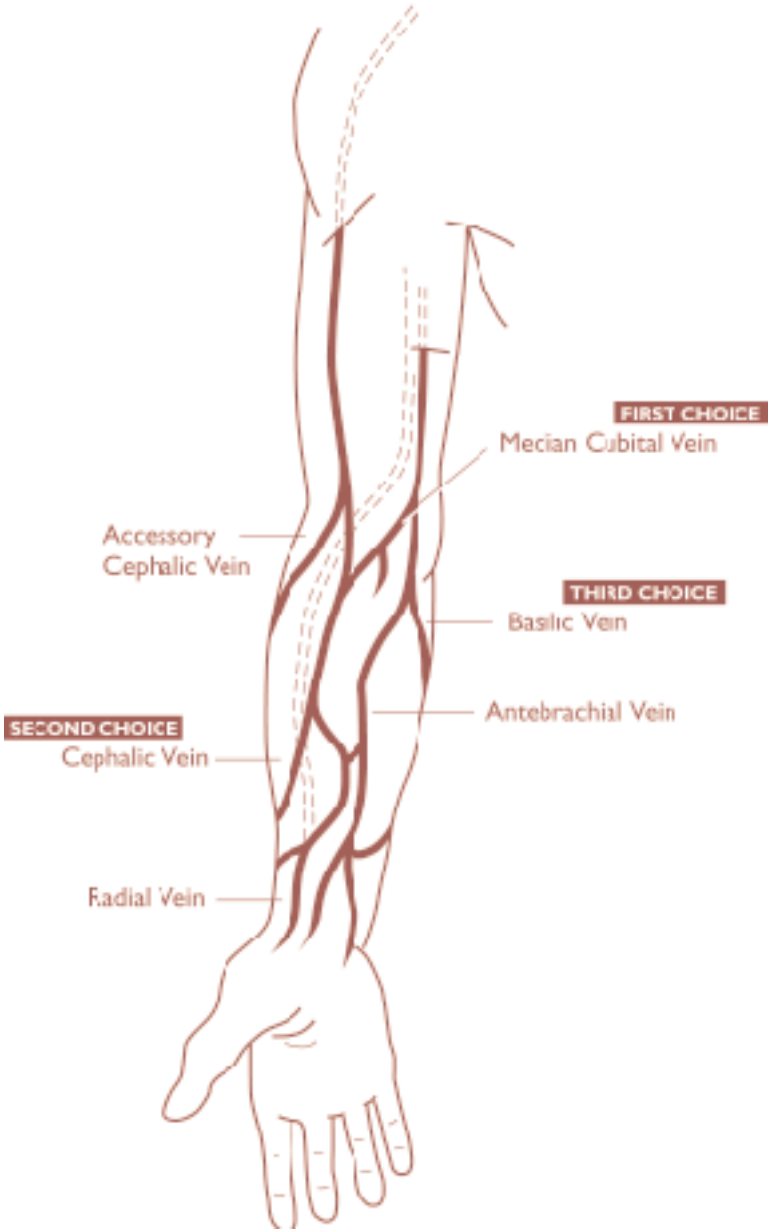
therefore require more time for healing and repair. In addition, foot sweat and dirty socks act prevent wounds from healing and increase the chance of infection from bacteria.

GROIN The femoral vein in the groin area is a large and fairly easy vein to access, but its location near the femoral nerve and the femoral artery make it quite a risky place to inject. Among the three, the femoral vein is located closest to the groin, with the artery and then the nerve located as you move outward. If you're going to inject into the femoral vein, first locate your femoral artery—where you do not want to inject—by finding the pulse. Then move a short distance toward the inside of your leg to find the femoral vein. Because it lies fairly deep, you will probably not be able to see it but will have to inject into it "blind."

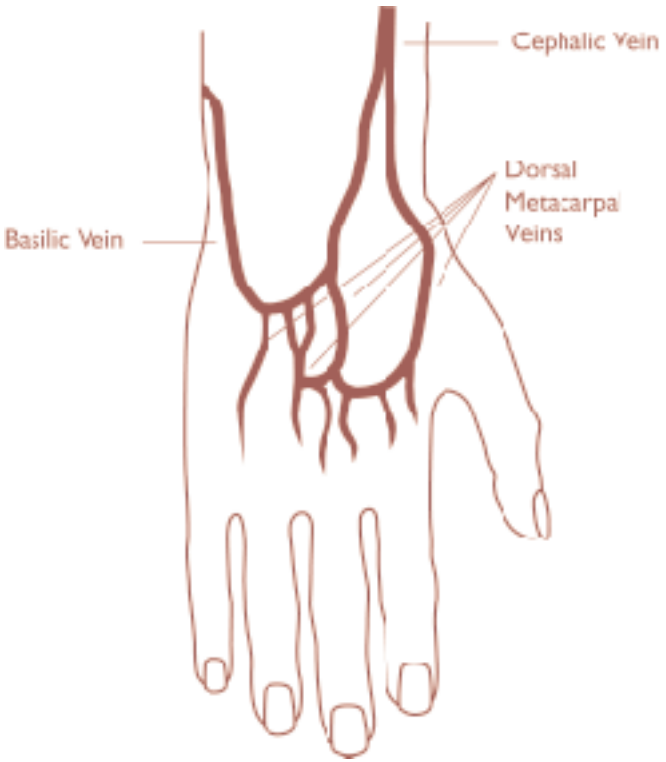
NECK The jugular vein in the neck is the riskiest place to inject because it lies very close to the carotid artery, a major blood vessel that brings blood directly to the brain. Accidentally hitting the carotid artery could be fatal, and damaging the jugular vein in any way can interfere with blood circulation to the brain.



HIERARCHY OF RISK



SAFEST INJECTING LOCATION: THE ARM
(Numbered in order of safety)



LOCATION OF VEINS IN HAND:
Know Where You're Hitting

more tips for Choosing an Appropriate Injection Site

- Taking proper care of the veins in your arms and other safer locations will prevent you from having to shoot up in more dangerous ones.
- You should avoid using veins that are tender, hardened, or inflamed until (and if) they heal. Warm compresses and the use of appropriate creams can help speed the healing process.
- The larger and more visible the vein, the easier and safer it usually is to hit. Deep veins are harder to hit, and trying to access them increases your chance of hitting a nerve or artery in the process. On the other hand, it may be difficult to keep a needle properly positioned in a very shallow vein, causing you to accidentally skin-pop your hit.
- Areas that are farthest from the heart, like the hands and feet, heal the slowest and have the poorest circulation. Areas nearest to the heart (like the groin and the neck) have veins that are located near major arteries and nerves which, if accidentally hit, can cause serious, life-threatening damage.
- Injecting near a bone increases the chances that swelling and pain will occur.

veins vs. arteries

You always want to inject into a vein and never into an artery. Veins are blood vessels that carry blood from the extremities of the body back to the heart and lungs where it becomes re-oxy-

genated. Veins have no pulse, and the blood they carry is a deep, dark red because it is low in oxygen. Arteries carry blood rich in oxygen from the lungs and heart to all the other parts of the body. Arteries have a pulse, and the blood in them is bright red and frothy. Arteries are located deeper in the body than veins and so are not visible as many of your veins are.

You'll know you've hit an artery if:

- The plunger of your syringe is forced back by the pressure of the blood.
- When you register, the blood in your syringe is bright red, frothy, and 'gushing.' Blood in veins is dark red, slow-moving, and "lazy."
- You feel an electric "burn" along your limb.

You can avoid hitting an artery by:

- Never injecting where you feel a pulse.
- Injecting only into surface veins and not trying to hit those that lie deeper.

What to do if you hit an artery:

- Untie your tourniquet and pull your needle out immediately.
- Raise the limb above your head to stop the bleeding, if possible.
- Apply firm pressure to the wound for at least 10 minutes.
- If bleeding continues, apply a bandage or cloth wrapped very tightly around the wound and seek medical attention immediately. The loss of blood from hitting an artery can be life-threatening if it's not stopped.

veins vs. nerves

Unlike some veins, nerves are not visible from outside the body, although you will definitely know if you've hit one while injecting because you'll experience extreme pain and no blood will enter the syringe when you pull back to register. Hitting a nerve can be very dangerous and result in paralysis or the loss of a limb. It's a good idea to know where your major nerves are so that you can avoid them when getting off.

exercises for Improving Vein Visibility

If you're the athletic type, engaging in the following activities can help make your veins more visible from outside the body.

- Push-ups, pull-ups, and other exercises that strengthen the arms
- Weight-lifting, particularly bicep exercises
- Squeezing tennis balls
- Wrist curls

some tips for "Getting Veins Up"

If you're having difficulty locating a vein to inject into, you might want try one of the following:

- Put a warm compress on your injection site for five or ten minutes to help bring a vein to the surface. When you're cold, it can be very difficult to access a vein. (If you're getting off in a bathroom or somewhere else

where there's not a lot of heat, don't unroll your sleeve or uncover your injection site until you're ready to inject.)

- Lower your arms below your heart or swing them in a circle.
- Lightly slap the injection site.
- Wrap your limb in Saran Wrap for a few minutes. This traps the heat and causes veins to rise to the surface.
- Remain calm. It can be extremely frustrating to be unable to get a hit, particularly if you're in withdrawal. Chances are getting upset will only increase your difficulty, so take a few deep breaths and start over again in a calmer state of mind.

MUSCLE-POPPING (INTRAMUSCULAR INJECTION)

Some drugs, including injectable steroids and hormones, must be injected into a muscle instead of a vein, but heroin and other opiates can also be administered using this method. The physical and psychoactive effects that result from an intramuscular injection of a drug come on much more slowly than those of an intravenous injection (half an hour to forty-five minutes versus almost immediately), although the overall, cumulative intensity of the effects and the experience are virtually identical. Also, the "rush" that is produced when drugs like heroin are administered intravenously is not experienced by individuals who inject intramuscularly.

Most, if not all, of the infection control and other safety precautions intravenous drug injectors should follow also apply to individuals who inject drugs intramuscularly.

Most if not all of the infection control and other safety precautions intravenous drug injectors should follow also apply to individuals who inject drugs intramuscularly. Muscle-popping produces much less bleeding than intravenous injection, if any at all, but the risk of transmitting viruses and other blood-borne bacteria as a result of needle-sharing is as serious as it is with intravenous injection. In addition, **muscle-poppers are at high risk for abscess formation,** especially if what they inject has any particles in it whatsoever. When muscle-popping, it is extremely important to inject only a solution that is as particle-free as possible.

Many of the substances that require intramuscular injection come pre-prepared in liquid form. To prevent contaminating your entire supply (especially if you're sharing it with someone else), be sure to use only a sterile needle and syringe when drawing the liquid up from the bottle in which it's stored. **Muscling speed or cocaine is very painful and dangerous, and is likely to cause an abscess.**

CHOOSING AN INJECTION SITE

The buttocks, thighs, and upper arms are the three best sites, respectively, for intramuscular injection. The best is in the deltoid, the muscle on your upper, outer arm where your shoulder and your arm meet. If injecting into the butt, mentally divide each cheek into four equal sections and inject into the top right or top left outer section of each cheek (see illustration below). You can also use the front surface of your thighs about six inches above your knee to about six inches below your hip, or the outer surfaces of your upper arms between your shoulder and your elbow. Always be careful to avoid nerves, blood vessels, or bones, and rotate injection sites to avoid bruising, abscess formation, and the

like. It is not uncommon for your muscle to be sore for a few days after an injection.

WHERE TO HIT THE BUTT & THIGH

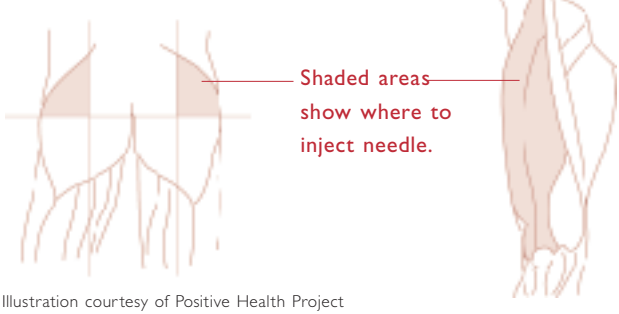


Illustration courtesy of Positive Health Project

CLEANING THE INJECTION SITE

Be sure to carefully clean the injection site prior to injecting (see 'Mainlining' section above for more detail).

INSERTING THE NEEDLE

Try to relax the muscle prior to injection. This will result in a less painful injection and may prevent the soreness you usually feel the following day or two. When injecting into a muscle, insert the needle in one quick stab straight into the injection site at a 90° angle to the body. Nearly the entire needle should enter the muscle. You definitely want to draw your plunger back **slightly** to make sure no blood comes into the syringe. If blood does appear, you've hit a blood vessel and need to pull out and try again. Inject your substance slowly.

You definitely want to draw your plunger back slightly to make sure no blood comes into the syringe.

PULLING OUT

Pull your needle out in the same direction and angle at which you inserted it. Because you injected into a muscle, there should be little if any bleeding. You might want to apply a Band-Aid in any case to prevent infection. Massaging the area lightly for a few minutes will help the drug absorb and reduce the pain.

MUSCLING HORMONES

Hormones are to be injected only into the thigh or buttock muscle. When injecting, be careful of nerves, veins, and bones. The buttock is the most common place people inject. You can switch buttock cheeks to avoid bruises and sores. After you inject into these muscles, you might be sore for a day or two.

Do not inject more than the prescribed amount; it will not speed up your treatment process. You can cause serious liver damage and increase the risk of blood clots. Blood clots can appear in the veins of the legs and can travel to the lungs; this is called Pulmonary Embolism (see p. 64), which can be fatal. People who smoke cigarettes and inject hormones are more likely to develop Pulmonary Embolism. (This section taken from Positive Health Project's "Safety Guidelines for Injecting Hormones.")

SKIN-POPPING (SUBCUTANEOUS INJECTION)

Skin-popping is the injection of drugs between the body's skin and fat layers. Like muscle-popping, the effects of your drug will come on much more slowly than if you'd injected it intravenously, and you will not experience a "rush."

Skin-poppers should follow all of the infection control and other safety precautions that intravenous and intramuscular

injectors should follow. Although like with muscle-popping, skin-popping results in little or no bleeding at the site of the injection, the risk for bacterial or viral infection is real if injection equipment is shared or drugs are not prepared and injected hygienically. Also, **skin-poppers are at greatly increased risk for abscesses**, especially if injecting crushed pills or another solution with particles in it. When skin-popping, it is critical to use only a solution that is as particle-free as possible.

When skin-popping, it is critical to use only a solution that is as particle-free as possible.

CHOOSING AN INJECTION SITE

The upper and lower arms and legs are probably the best locations for skin-popping.

CLEANING THE INJECTION SITE

As always, thoroughly clean the injection site with alcohol, soap and water, or other detergent or disinfectant prior to injection.

INSERTING THE NEEDLE

Slide the needle under your skin at a shallow angle, maybe 15° to 45° at the most. Inject no more than ½ cc of liquid (half of the volume of a 1 cc syringe) to form a little bubble under the skin. If your hit is more than ½ cc, inject into two or more sites. The bump from the solution you injected will slowly decrease as the liquid is absorbed into the body, and should disappear completely within a few hours. Skin-popping can be uncomfortable, and the bump you create may hurt a bit. If you skin pop where the skin is loose, pinch the skin between your thumb and forefinger and put the needle into the skin you've pulled up.

PULLING OUT

Pull your needle out in the same direction as it went in. There should not be much bleeding at the injection site when skin-popping, but you might want to apply a Band-Aid to prevent infection.

IN THIS CHAPTER

- Bacterial, Viral & Other Infections
- Injection-Related Injuries
- Taking Care of Your Health

This section of the manual describes some of the medical and health problems that can result from injecting drugs and offers suggestions for how to prevent them.

CHAPTER THREE

POTENTIAL HEALTH COMPLICATIONS OF INJECTION DRUG USE

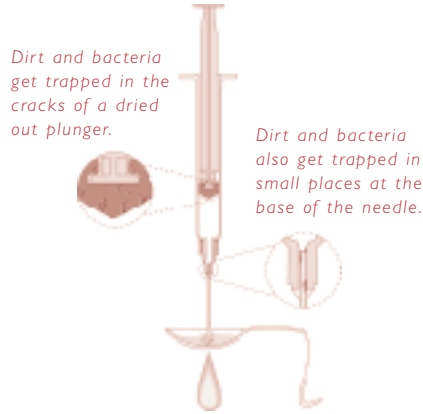
Many, if not all, of the things that can go wrong during the process of preparing and injecting drugs fall into one of three categories: drug-related, technique-related, and hygiene-related mishaps. Because we're forced to use blackmarket, unregulated drugs, we'll never have control over the quality or purity of the substances we use. But while we may not be able to do much about the actual drugs we use, we can work to improve our injection technique and hygiene which can have far-ranging effects on our health.

There are numerous and potentially very serious health complications associated with injecting illicit drugs, from injection-related injuries like tracking and bruising, to bacterial and fungal infections, from communicable diseases to drug overdoses and other medical emergencies. This section of the manual describes some of the medical and health problems that can result from injecting drugs and offers suggestions for how to prevent them. Overdose prevention and survival are addressed in chapter four.

BACTERIAL, VIRAL, AND OTHER INFECTIONS

DIRTY HITS

A "dirty hit" is a general term for a shot that makes someone sick or causes an abscess as a result of being contaminated with infection-causing microbes or toxic substances. Dirty hits can be caused by any number of things, such as:



Cutaway section of a syringe showing frequent dirty spots.

- contaminants in the water you used to dissolve your drugs;
- bacteria, fungi, or other microbes from old cottons;
- chemicals in a cigarette filter that was used to filter a shot;
- adulterants or contaminants in the drugs themselves; or
- not properly cleaning the skin prior to injection.

A dirty hit can result in a fairly quick and intense reaction or might take days or weeks to produce an effect. Symptoms often include sweating, headache, fever, and trembling. While the effects of a dirty hit may pass by themselves, you should seek medical attention if they are particularly strong or persistent.

BLOOD POISONING (Septicemia)

Blood poisoning (septicemia) is a bacterial infection of the bloodstream that can be caused by injecting with contaminated water, re-using old cottons, or failing to clean the skin prior to injection.

Early symptoms include chills, fever, and extreme fatigue. If you experience these symptoms, seek medical attention. Septicemia can be fatal!

ENDOCARDITIS

Endocarditis is an infection of the heart lining that is caused by bacteria, fungi, and other infection-causing microbes that enter the bloodstream during injection and build up around the valves of the heart, weakening them as well as other parts of the heart muscle. Endocarditis can eventually cause a heart murmur, as well as fever, chest pains, fainting spells, shortness of breath, and heart palpitations. It can be treated with antibiotics if detected early, but can be fatal if it goes untreated.

You can help prevent endocarditis, septicemia, and "dirty hits" by always using clean water (and a clean water glass) when preparing your shot; using new, clean cottons for every injection; making sure your spoon or cooker is clean; and thoroughly washing your hands and cleaning your skin prior to injection.

TETANUS

Tetanus is a bacterial infection that occurs when tetanus spores enter a wound and release tetanus bacteria, usually after a scab has already formed. The bacteria then enter the bloodstream and cause an infection, which is characterized by muscle spasms or rigidity, especially in the neck and jaw (tetanus is commonly called "lockjaw"). **Tetanus is fatal if not treated.**

Most local health departments offer free tetanus boosters, which will protect you from tetanus for five years, so you might consider getting one.

Tetanus spores live in the soil and on rust, which is why a tetanus shot is recommended if you step on an old nail or other rusty object. Most local health departments offer free tetanus boosters, which will protect you from tetanus for five years, so you might consider getting one. If your needle, syringe, or other injection equipment is contaminated with tetanus spores due to dirt or rust, you could infect yourself. **Skin-poppers and muscle-poppers are particularly susceptible to tetanus infection and should always use new, sterile equipment.**

NECROTIZING FASCIITIS (Flesh-Eating Disease)

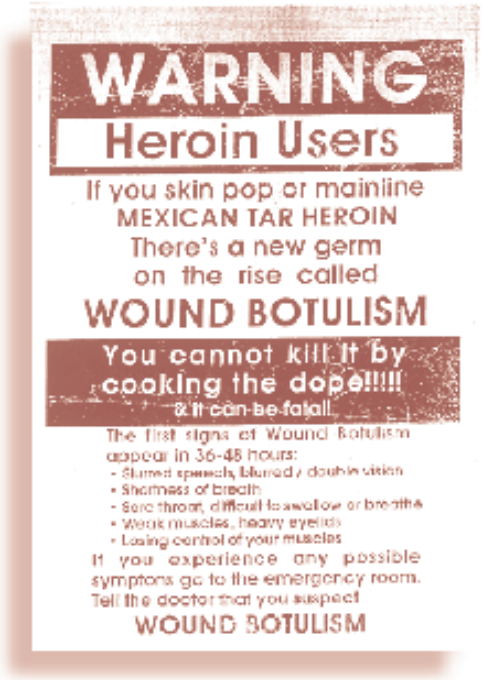
Necrotizing fasciitis is a bacterial infection commonly known as "flesh-eating disease" that enters the body through broken skin and then affects the surrounding tissue and nearby muscle. It can be transmitted by the exchange of blood during needle sharing, and has recently been traced to **"black tar" heroin** on the West Coast.

Symptoms of necrotizing fasciitis include increasing redness and swelling and extreme pain at the wound or injection site accompanied by a fever. **The flesh around the site of infection begins to decay and looks as if it had been "eaten" away**. Since this infection is fatal, **early treatment with antibiotics is crucial to survival**, although even appropriate therapy does not prevent death in all cases. Wounds must be kept impeccably clean.

Always using new, sterile injection equipment; never sharing injection equipment; thoroughly washing your hands and cleaning the skin prior to injection; and preparing your drugs on a clean surface will all help prevent necrotizing fasciitis infections.

WOUND BOTULISM

Wound botulism is caused by a bacteria that produces a toxin on the skin where a puncture would is made and that eventually **stops your breathing by paralyzing your muscles.** Recent cases have been associated with the subcutaneous injection of **"black**



tar" heroin on the West Coast. The source of the botulism could be the drug itself, a cut in the drug, dirty injection equipment, or contamination during the preparation process. **Wound botulism can be prevented in the same ways as necrotizing fasciitis—by following excellent sterile technique when preparing and injecting your drugs.**

Symptoms of wound botulism include droopy eyelids, blurred or double vision, and a dry, sore throat which may progress into difficulty speaking and swallowing, a weakness of the neck, arms, and legs, and difficulty breathing.

If untreated, wound botulism will cause death by paralyzing the muscles used for breathing. **Early treatment for wound botulism is essential. If you experience any of the symptoms listed above, seek medical attention immediately.** Treatment usually involves an antibiotic regimen and the draining of any abscesses or infected wounds.

HEPATITIS

Hepatitis is an inflammation of the liver that can be caused by certain toxic drugs, alcohol, or street drugs (iatrogenic or chemically-induced hepatitis); or that is the result of infection with a hepatitis virus (viral hepatitis). While there are numerous types of hepatitis viruses, hepatitis-B and hepatitis-C are the two that most frequently affect injection drug users, with hepatitis-A coming in third.

By preventing hepatitis you can prevent most other infectious diseases transmitted by injection drug use.

General symptoms of hepatitis include fatigue, loss of appetite, nausea, mild fever, and muscle aches, and if you smoke cigarettes, you'll notice that they taste unpleasant. **More severe symptoms of hepatitis** include dark (tea-colored) urine, light-colored stools, and jaundice (a yellowing of the skin and the whites of the eyes).

HEPATITIS-A (also called "infectious" hepatitis) is excreted in feces (shit) and spread by fecal-oral contact (feces-to-hand-to-mouth contact). Hepatitis-A can be spread from contaminated food, water, hands, and eating utensils, for example, by

a restaurant worker who didn't wash his hands after using the bathroom and who then prepared food. Unlike hepatitis-B and -C, hepatitis-A is not transmitted by blood-to-blood contact that occurs when needles or other drug injection equipment is shared, and is not generally spread through sexual contact unless rimming (oral-anal contact) is involved. Hepatitis-A illness resembles the flu and can last from four to six weeks. It causes an acute (short-term) infection only and never develops into a chronic condition like hepatitis-B or -C. You develop antibodies to hepatitis-A after you've been infected with it, so your chances of ever getting it again are slight. A hepatitis-A vaccine (gamma-globulin) should be administered within 72 hours after exposure to the virus. Gamma globulin is often used as treatment after an exposure, but can also be used as a preventative vaccine. The most complete prevention is a two-shot regimen, with the second injection taken 6 to 12 months after the first.

Hepatitis-B (also called "serum" hepatitis or "HBV") is spread through blood-to-blood contact of the kind that occurs when drug injection equipment is shared; contact with infected body fluids like semen, blood, urine, saliva, and mucous; sex that involves contact with semen; and from a mother to her infant at birth. Hepatitis-B infection can be acute (short-term and intense) and/or chronic (long-term); chronic HBV can cause serious liver damage, including cirrhosis (scarring), liver cancer, and death from liver failure, and results in premature death in about 15 to 25 percent of individuals affected. **Hepatitis-B is much more infectious than HIV, which means it is spread much easier.** It is one of

the most important reasons drug injectors should never share injection equipment of any kind.

A vaccine that will protect you against hepatitis-B if you're exposed to it is available, and all drug injectors should think about getting it.

A vaccine that will protect you against hepatitis-B if you're exposed to it is available, and all drug injectors should think about getting it. The vaccine involves a series of three intramuscular injections, with the second shot being administered 30 days after the first, and the third shot being administered 4 to 6 months after the second. The vaccine is safe and effective. If you've had hepatitis-B in the past, you've developed antibodies to it and will not catch hepatitis-B again in the future and do not need the vaccine. You can get your blood tested to see if you've ever been exposed to the hepatitis-B virus, and get the vaccine at your local Department of Public Health or your doctor.

HEPATITIS-C (formerly known as "non-A, non-B" hepatitis and also referred to as "HCV") **is spread mainly through blood-to-blood contact and is very infectious,** which means you can acquire it quite easily if exposed to it. There is a blood test (ELISA) available that detects whether or not you have antibodies to the hepatitis-C virus in your blood, which, if positive, should be confirmed with a second test called the RIBA; the only way to test whether or not you have the actual virus in your blood is by getting a polymerase chain reaction (PCR) RNA test, but these tests are not terribly sensitive and interpretation of the results may differ depending on who's reading them. **There is as yet no vaccine for**

hepatitis-C, and antibodies are not protective—that is, they don't make you immune to re-infection as with HBV. Scientists estimate the arrival of a vaccine in 1 to 2 years. Currently, there is only prevention with use of sterile injection equipment, by not sharing injection equipment, and through safer sex.

Hepatitis-C can either be chronic but asymptomatic (without symptoms, which means you barely even notice you have it), or chronic-active, which means disease will develop over a long period of time–several years or perhaps even decades. Unlike acute HBV infection, HCV is never completely cleared from the body. People with active hepatitis-C may have elevated liver function tests (LFTs), fatigue, and jaundice, and active disease can result in cirrhosis, liver cancer, and ultimately liver failure, all of which can be fatal. **Hepatitis-C is an extremely serious health risk for injection drug users,** many of whom—it is now being discovered—have been exposed to the virus at some point in their lives.

Currently, there is only prevention with use of sterile injection equipment, by not sharing injection equipment, and through safer sex.

Interferon alfa-2B is the only therapy currently approved for the treatment of chronic hepatitis-B and -C in the United States. However, many people use a variety of alternative therapies for hepatitis treatment including western and Chinese herbal therapies or acupuncture. *The Hepatitis C Handbook* by Matthew Dolan is a very comprehensive book covering a variety of hepatitis therapies from Western to Chinese medicine and other alternative therapies.

It is available through Catalyst Press, P.O. Box 13036, London, NW1 3 WG, or you can call (802) 655-3415 to order it.

HUMAN IMMUNODEFICIENCY VIRUS (HIV)

Human Immunodeficiency Virus (HIV) is the virus believed to cause AIDS (Acquired Immune Deficiency Syndrome), an immune system disorder that causes the body to lose its ability to ward off infection and fight disease. HIV can be spread through the exchange of infected semen or vaginal fluids during unprotected sex; the exchange of blood via the sharing of drug injection equipment or accidental needlesticks; and from mother to infant during pregnancy, childbirth, or breastfeeding.

Blood-to-blood contact is one of the most efficient means of transmitting HIV from one individual to another, and the sharing or re-use of drug injection equipment is extremely risky in terms of HIV transmission. It is important to point out that injection drug use itself does not cause HIV; rather, HIV is transmitted (like hepatitis and other viruses) when infected blood from one individual is left in a needle, syringe, cooker, cotton, or water and injected into the bloodstream or body of a second individual who uses those same works. **HIV from injection drug use is therefore 100% preventable as long as you always use your own sterile works and never share them with anyone.**

Anonymous or confidential HIV-antibody tests are available from virtually all municipal, county, and/or state health departments, local health and family planning clinics, AIDS service organizations, needle exchange programs, and many other types of providers.

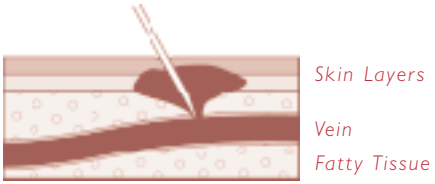
General symptoms of HIV infection may include a low-grade fever and fatigue. The longer a person is HIV-infected,

the more likely they are to develop one of the many bacterial, fungal, or viral infections, cancers, neurological disorders, or other conditions that afflict people with HIV and AIDS. Traditional Western and alternative therapies are available for fighting replication of the HIV virus in the body and for preventing and treating some of the numerous opportunistic infections that people with HIV and AIDS commonly get. There is no cure for HIV or AIDS at this time.

INJECTION-RELATED INJURIES

TRACKING AND BRUISING

Track marks are the scars that appear along the veins of someone who injects frequently and repeatedly uses the same injection sites.



How a bruise is formed

Bruising occurs when blood leaks out from the vein under the skin in the process of injecting. **Damage to the veins, including tracking and bruising, can be minimized or prevented altogether by practicing the following safer injection guidelines.** (These are especially important for those individuals who are worried about family, friends, an employer, or someone else finding out about their drug use. Track marks are one of the most visible signs that you use.)

- **Use a sharp, sterile needle for every injection.** Using dull needles will cause trauma to the veins and surrounding tissue, cause a much larger puncture wound, and increase bleeding at the site.

Sharpening a used needle can cause it to develop a burr, which will tear the vein and surrounding tissue and result in unnecessary trauma to the injection site. If you keep resharpening your point, it becomes less flexible and can break off into your vein. If this happens, *seek medical attention immediately!*

- **Use the highest gauge (thinnest) needle you can find** to make the smallest puncture wound possible.
- **Alternate and rotate your injection sites.** Always try to inject at least one inch from your previous injection site. Give your veins a chance to rest in between injections. Stay away from veins that are red or tender until they heal.
- **Always inject in the direction of the body's blood flow (toward the heart).**
- **Use a soft, flexible, easy-to-open tourniquet and remove it after you've registered but before you inject to help prevent bruising.**
- **Use emollient-rich or antibiotic creams on injection sites once they've closed or scabbed over.** Aloe vera gel and vitamin E oil are two commonly-available preparations that can help reduce the appearance of track marks.

VEIN COLLAPSE

Vein collapse occurs when veins close up due to repeated injections into the same site, repeated local infections, or trauma to the veins and surrounding tissues. **Using barbed or dull needles can precipitate vein collapse.** You know you have a collapsed vein when you can't draw blood from it or when the vein "disappears." Thrombosis is the formation of an obstruction of a blood vessel by

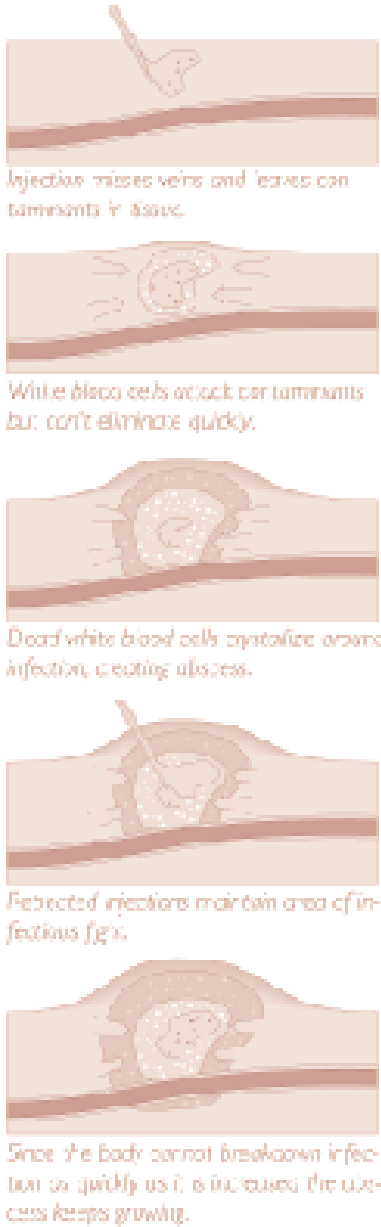
a blood clot. **Don't use veins that do not bend when pushed as they may have blood clots that can break off and lodge in the lungs or other parts of the body and cause serious damage.**

You can avoid vein collapse by always rotating and alternating your injection sites and by injecting in the direction of the body's blood flow (toward the heart). **Using the same injection site over and over without letting the vein heal is one of the surest ways to cause vein collapse.** Also, insert your needle at a 15 to 45 degree angle with the bevel of the needle facing upwards. **Taking oral vitamin C may help your veins repair themselves and reduce bleeding and bruising. NEVER inject viatamin C, only swallow it.**

ABSCESSES

Abscesses begin with redness, swelling, and tenderness at an injection site and develop into an infection with a hard, pus-filled core. Abscesses result from missed hits (injecting into the tissue surrounding the vein), injecting a solution with a lot of particles in it, failing to clean the injection site prior to injecting, using dirty injection equipment, or skin-popping drugs like coke or speed that cause damage to muscle tissue and skin.

If you notice a hard, warm lump developing at an injection site, apply warm compresses at least three times a day to either make the abscess that is forming go away or come to a head (soften and fill with pus). If it comes to a head, you can get the abscess opened and drained at a hospital or clinic. **If you experience fever, chills, extreme fatigue, or pain associated with an abscess, seek medical attention immediately because you could have a blood infection.** Pain in the groin or armpits also means



HOW AN ABSCESS IS FORMED

you most likely have an infection for which you should seek medical treatment.

If you're unable or unwilling to seek medical care for an abscess, take the following steps:

1. Clean the area with soap and water, and be sure to keep it as clean as possible at all times.
2. If the abscess is draining, let it continue to do so.
3. Keep the area covered with sterile gauze you can buy in a pharmacy, and change the dressing twice a day until the pus stops draining and at least once a day until the abscess is completely healed. Dressings that directly touch the wound should be dampened with sterile saline (which you can also purchase at a drug store) and then covered with dry gauze and tape. Properly dressing an abscess will help keep it free from further infection and speed healing.
4. When removing the dressing, dampen the gauze that's touching the wound so you don't pull off newly formed tissue.
5. Warm compresses and salt soaks will encourage the abscess to drain and promote healing. **Do not soak or use a compress once the wound is open or draining.** After the abscess has drained and scabbed over, antibiotic creams and preparations like aloe vera gel can be helpful.
6. Let the area heal completely. If the abscess refuses to drain completely or pain and swelling persist, seek medical attention.

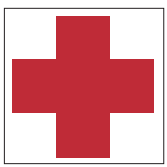
Only use the emergency room as a last resource for getting your abscess drained. Chances are the trauma or surgery doctor you

see will not be too sympathetic to your plight, under-medicate you for pain, make a large incision, and provide no follow-up or after-care. Instead, try to go to a community clinic where the care might be more humane (although there are certainly no guarantees when it comes to people's views about injection drug use!). Try to find a wound clinic where you can get your dressing changed on a regular basis and make sure the abscess is healing properly. This will help insure that minimal scarring occurs.

EMBOLI

An embolism is something such as air, fat, impurities, dirt, or other particles that can obstruct a blood vessel which results in the blockage of blood flow. Particles from injected pills that were not completely pulverized and clumps of bacteria are two examples of things that can cause emboli. Emboli can be extremely serious, particularly if they travel through the blood vessels to the heart or lungs or lodge in the small capillaries of the fingers, eyes, or toes where severe circulation damage can occur. **Emboli can be avoided by filtering out any particles in your shot and refraining from injecting pills, no matter how pulverized they appear to be.**

TAKING CARE OF YOUR HEALTH



Because they're involved in the daily struggle to procure their drugs, many users often aren't able to fully care for their health, and the added stress to the body of injecting daily results in chronic poor health. Each new injection of drugs potentially showers your bloodstream with all sorts of infectious agents and contaminants which can weaken your immune system. Not getting proper

nutrition or adequate fluids, enough sleep, and regular medical care can compound this situation. To the extent possible, follow basic, common sense steps to take care of your health. **In the near future, the Harm Reduction Coalition will be creating a small booklet that reviews basic health maintenance and first aid suggestions for drug users.**

Proper nutrition, adequate fluids, enough sleep, and regular medical care are essential to maintaining anyone's health.

IN THIS CHAPTER

- What Is an Overdose?
- How Do O.D.s Happen?
- How Can You Tell if Someone Has Overdosed?
- What to Do if Someone Overdoses
- What You Should Not Do if Someone Overdoses
- Narcan
- Accidental Needlestick Injuries

Whether or not an individual survives an overdose depends mostly on what those present do or don't do to help.

CHAPTER FOUR

OVERDOSE AND OTHER MEDICAL EMERGENCIES

One of the most serious health consequences associated with using illicit drugs is the risk of overdose. While overdose is indeed serious, it doesn't have to be fatal. Anyone who uses illicit drugs should take the time to talk with friends and develop an overdose plan in the event that something happens. Whether or not an individual survives an overdose depends mostly on what those present do or don't do to help. All users should learn how to perform cardio-pulmonary resuscitation (CPR), for example, and be aware of the necessary steps they should take if someone they're with overdoses. Most overdoses occur in the presence of another person, so often we have the opportunity to help our friends and loved ones survive if we

know what to do. Read the following section carefully and do what you need to do to **feel confident that you could help someone who has overdosed survive. We owe it to ourselves and to each other.**

WHAT IS AN OVERDOSE?

Drugs that people take to get high work by affecting the brain. Because the brain controls other parts and functions of the body (like the lungs which enable oxygen to get to the blood, the kidneys and liver which remove toxins from the body, and the heart which pumps blood to all parts of the body), using drugs can affect one or more of these crucial activities in addition to making you high. For example, cocaine speeds up your heart rate and heroin slows down your breathing. A person's body can usually adjust to these changes, but if you take too much of a particular drug, such changes may overwhelm the body's ability to adjust to them and very dangerous side effects can occur.

Some side effects that occur from taking a lot of drugs are often serious but not immediately life-threatening, such as the damage that can result to the liver and kidneys from making them work hard to remove drugs from the body over a period of years. But **if too much of a drug gets to the brain or other organs too fast, dangerous side effects such as unconsciousness, stopped breathing, heart failure, or seizures may occur — any of which can be deadly.** This is what is known as a drug overdose (o.d.).

Overdoses are very serious but do not have to be fatal. Often, the difference between life and death depends on who is around and what actions they take to care for a person who has overdosed.

This chapter will help you or someone you love avoid overdosing in the first place and give you some basic information about what to do in case you're with someone who overdoses. There is no reason you should die just because you get high!

HOW DO O.D.'s HAPPEN?

Anyone who uses drugs can overdose, from the first-time user to the person with many years' experience. There are numerous reasons a person can overdose:

- One of the effects of drugs being illegal is that there is no quality control; in other words, you don't know what you're getting. Drugs you buy on the street — especially drugs like heroin that, unlike pills, are not made by drug companies — can be a different strength from day to day. Sometimes a drug may be cut a lot, and sometimes it's hardly cut at all and therefore much stronger. **If you're using drugs of unknown strength** (and you are every time you purchase from a different dealer or new batch), **do a tester shot first to see how strong they are.** You can always do more later. Many people overdose when they do a full hit of a strong drug.

> Warn people you're using with, or have gotten drugs for, if you come across something that's unusually potent.

- Sometimes dope, speed, and coke are cut with other, cheaper drugs which can be dangerous and unpredictable and increase your chances of overdosing. If possible, **try to purchase your drugs from a regular source** that, to the extent possible given the situation, you can trust. Establish

a relationship with a dealer who you feel you can talk to about his or her product.

- Some people overdose because they simply do too many drugs which build up in their system. Let your drugs work first before you do more, and perhaps plan to use only a certain amount (maybe even purchasing just the amount you're going to use at a given time). Take your time to prepare your drugs right, even if you're in withdrawal or in a hurry. Minimize uncertainty by thinking through each step of your drug-taking. Deep breathing may help focus you, and sniffing or smoking a little bit of the drug may help calm you before preparing your injection.

- **Take control of your own drug preparation and intake.** Different users have different tolerances to drugs, so a dose that's fine for one person could be lethal to someone else. Make sure you know what you're putting into your own body.

- A person can overdose if they haven't used for a while, even for a short time. After detoxing or spending some time in a rehabilitation center, your body is no longer used to the same amount of drugs. One of the consequences of jailtime is that your tolerance decreases and you're a lot more sensitive to dope, so be careful if you're getting high after release. Take a smaller dose if you're using after a break until you figure out how much you need. Someone who's using a drug for the first time should also be extremely careful, since they will have no tolerance to it at all. You might try using the drug in a way that makes it come on more slowly (sniffing heroin

or cocaine rather than injecting it, for example). And make sure you use with someone who knows what they're doing and has experience with the drug.

- **Mixing drugs like heroin, pills, and alcohol can be very dangerous. One of the most common reasons for death from an o.d. is mixing drugs,** since drugs that are taken together can be much stronger than if they're taken alone. You may get a stronger high when you mix, but you're also putting yourself at much greater risk of having an overdose. Mixing drugs also increases the risk of passing out and vomiting, and vomit can block your airways and cause you to suffocate. Finally, some pharmaceuticals may interact with "street" drugs in dangerous ways. If you feel comfortable doing so, you might want to talk to your doctor about this issue.

  Alcohol is one of the most common & most dangerous drugs mixed with other drugs.

- **Changes in your health may cause you to be at higher risk for an o.d.** If you have lost a lot of weight, a smaller amount of a drug will get you high; and if your liver or kidneys aren't working well, you can overdose easier. **Your body is less able to protect itself after you've been sick, so help it out by using less and giving it a chance to recover**. Eat and sleep well, always drink a lot of fluids, and get that annual physical.

- Using drugs alone increases the chance that if you overdose, it will be fatal because you can't take care of yourself or call for help. **If you find yourself alone in an overdose situation and have called 911, remember to**

unlock your door so that the paramedics can get inside. If possible, use with people who care about you and who you trust, and sit down and talk with them about an overdose plan. Try to put together a support system for yourself of people who know you use and will be there for you if something happens.

HOW CAN YOU TELL IF A PERSON HAS OVERDOSED?

DEPRESSANT DRUGS like opiates (e.g., heroin and Dilaudid) and sedatives (e.g., Valium and alcohol) slow down the body's functions. **A person who overdoses on a depressant will experience respiratory arrest—that is, their breathing will become life-threateningly slow or stop altogether, leading to heart failure.**

STIMULANT DRUGS, such as cocaine and speed, **can cause** a person who has overdosed to have a **heart attack** or experience **cardiac arrest,** collapse from exhaustion, have a **seizure,** or become so disoriented that they accidentally hurt themselves.

One of the clearest signs that someone is overdosing is that their face or lips will turn blue. They may also look very pale; be very limp; be able to breathe and look at you, but not be able to talk; be breathing, but very slowly and shallowly; stop breathing altogether; have a slow pulse (heartbeat) or no pulse at all; foam at the mouth; vomit; be shaking or have a seizure; complain of chest pain, pressure, tightness, or shortness of breath; or suddenly collapse and become unconscious. **You have about 4 minutes from the time your lips turn blue to coma.**

A person who is overdosing isn't usually aware of what is happening because of the effects of the drug they're on. They are helpless and need someone to act quickly. **If a person stops breathing, it can take only a few minutes for them to die. Just waiting for them to "get over it" is the worst thing you can do if someone is overdosing. Immediate action must be taken to help them survive.**

WHAT TO DO IF SOMEONE OVERDOSES

Anyone who uses drugs should develop an overdose plan in the event that something happens. If someone is overdosing, follow these steps:

1. **Check to see if the person is able to open their eyes or speak to you.** Shake them and call their name.
2. **Check the person's pulse and breathing.** Does a mirror held under their mouth fog up? Can you feel their breath on your hand? Is their chest moving up and down? Can you detect a heartbeat when you put your ear to their chest?
3. **If the person doesn't respond or seems to have stopped breathing, try to bring them around by pinching their earlobes or rubbing their breastbone with your knuckles.** Try to get them up and walking around, even if you have to hold them up. Talk to them. **It is important to keep someone who has overdosed as alert as possible.**
4. **If the person has stopped breathing, they need attention immediately or they will die within minutes** if they don't get air. **Keep them alive by giving them mouth-to-mouth resuscitation.** Helping with breathing is relatively harm-

less–it's the pumping the chest that can be harmful and that should only be done by someone who knows how. **Call 911 and tell them that the person has stopped breathing. Put them in the "recovery position" on the floor.**

The Recovery Position

5. **If you can't get them in the "recovery position," tilt the body forward instead of leaning back so that their airway will be clear and fluid will come out of their mouth.** REMEMBER, vomit carries virtually no communicable diseases as it's acidic and kills bacteria. So, clean out their mouth with your hand (don't use water because they may choke), and GET TO IT. It may be gross, but it could save someone's life.

6. **If the person is unconscious,** (that is, you can't wake them up no matter what you do), **call 911 immediately!** If they are going to have a seizure or stop breathing, you want them to be in an ambulance or at a hospital when it happens. **Don't wait for them to just "come out of it."**

7. **If the person is conscious but experiencing nausea, chest tightness, shortness of breath, or other such symptoms, convince them to call 911 or call 911 for them.**

8. When you call 911, you don't have to tell the operator that the person has overdosed. This will prevent a lot of police from arriving with the ambulance. **While you're waiting for the ambulance, check to see if the person's airways are clear, but do not stick anything into their**

mouth unless you can see something blocking their throat, like vomit or food.

9. **Never leave someone alone who has overdosed.** If you need to remove drugs or smoking or injection equipment before the ambulance arrives, don't let the person out of your sight. If you absolutely must leave the person alone for some reason, put them in the recovery position, call 911 before you leave or from another nearby location, and make sure the ambulance technicians will be able to gain access to where the person is.

10. **When the ambulance arrives, tell the emergency medical technicians (EMTs) that the person sometimes uses 'x' drug.** They can best help the person if they know what has happened. The EMTs will need to know how to treat the person, but you don't have to tell them you used drugs with your friend. The ambulance service will generally not call the police unless they are physically threatened. Be respectful of the EMTs and they will usually just do their job.

WHAT YOU SHOULD NOT DO IF SOMEONE OVERDOSES

There are also some things you should NOT do if someone you're with has overdosed:

- **Do NOT inject a person who has overdosed with salt water.** This is an old junky myth and will do nothing to help revive the person.
- **Do NOT inject a person who has overdosed on heroin with cocaine or speed, or vice versa.** It will just waste valuable time and probably make them worse.
- **Do NOT give CPR (this is the heart compression part—the pumping the chest) unless you know how.** You may do more harm than good. *Mouth to mouth resuscitation is okay.*

If you want to learn CPR, call your local Red Cross or see if your needle exchange offers classes. Learning CPR is one of the most important things you can do to help someone survive an overdose. Every user should learn CPR!

- **Do NOT put the person in a cold water bath because it may cause them to go into shock or to drown.** You can put them in a cool shower to wake them up, but you must stay there with them. Do NOT put ice on their genitals (down their pants).
- **Again, do NOT leave someone alone who has overdosed, even after you've called an ambulance.** Your friend will need you to see them through this very scary experience.

NARCAN

Narcan (naloxone) is an opioid antagonist that, when injected into a person who is overdosing on heroin, methadone, or other synthetic opiates, immediately counters the effects of these drugs and brings the person 'to.' Narcan can be given intravenously or by intramuscular injection. Ambulances and other emergency response vehicles often carry Narcan to use in the event of an opiate overdose, and some detox programs still use Narcan to initiate withdrawal when a patient is admitted. Narcan is restricted for use by medical and health professionals only, and will only help someone who has overdosed on heroin or another opiate.

Giving someone who has overdosed an injection of Narcan can get pretty hectic because the person's body is thrown into severe withdrawal almost immediately, causing them extreme dislocation and discomfort. The person who is overdosing may become quite upset, begin to thrash around and scream, become physically aggressive, and even refuse to go to the hospital. Encourage medical personnel to administer Narcan slowly to make the transition to withdrawal less painful and more gradual. Because Narcan is short-acting and wears off relatively quickly, the person can revert back to a state of euphoria and, if they still have enough drugs in their system, begin to overdose again. It is therefore important to have an adequate supply of the drug on hand and experience in properly administering it.

Some clinicians prefer not to administer Narcan in the event of an overdose because of its disturbing and harsh effects. The major problem for people overdosing on opiates is that they stop breathing; as long as emergency measures are taken to keep an overdose victim breathing, most people will wake up and "come

to" within a few minutes without the profound shock caused by Narcan administration.

ACCIDENTAL NEEDLESTICK INJURIES

The risk of infection from hepatitis and tetanus is far greater than the risk of HIV from an accidental needlestick.

There is a **remote** chance of being infected with HIV if you are pricked or scratched with a used needle. The risk of infection from hepatitis and tetanus are far greater if the needle was contaminated with either of these pathogens, both of which are much more infectious than HIV. If you are accidentally stuck with a needle that was used by someone else, try not to panic and take the following precautions:

1. Encourage the wound to bleed by squeezing the puncture site. This will help keep any pathogens from entering your body.
2. Wash the wound with soap and water as soon as possible.
3. Apply an antiseptic and a sterile bandage.
4. Seek medical attention from an emergency room or clinic. If the person whose needle you were stuck with is HIV+, you may be encouraged to take a short regimen of anti-viral drugs to prevent infection with the virus. You may also be offered a tetanus shot. If not, you may want to request one if your vaccination is not current.
5. If you're around needles and syringes regularly, you may want to get a tetanus booster every five years and be vaccinated against hepatitis-B.

There is no reason that accidental needlesticks should happen.

- If at all possible, never handle injection equipment that was used by someone else, especially if it is uncapped.
- NEVER try to re-cap a needle that was used by someone else.
- ALWAYS re-cap your own needle immediately after use.
- Do NOT break the needle off with your fingers.
- Always store your used needles and syringes safely (see chapter 5).

IN THIS CHAPTER

- Safe Storage & Handling of Injection Equipment
- Proper Disposal of Used Equipment
- Where to Get New Materials

For your safety and the safety of others, it is extremely important to store and dispose of used injection equipment properly.

CHAPTER FIVE

TOOLS OF THE TRADE: WHERE TO GET NEW EQUIPMENT AND WHAT TO DO WITH THE OLD

For your safety and the safety of others, it is extremely important to store and dispose of used injection equipment properly. There is no excuse for being lazy or sloppy about how you get rid of your potentially contaminated needles and syringes. Throwing your equipment in an empty lot, park, public bathroom, playground, or anywhere else where someone might get stuck endangers the health of others, gives all of us a bad name, and fuels discrimination against drug users. Be considerate of the people who take away your garbage, and think about where those needles and syringes that you flush down your toilet end up! **Take the time to dispose of your equipment right.**

SAFE STORAGE AND HANDLING OF INJECTION EQUIPMENT

Particularly if you have small children, always store your injection equipment—dirty or clean—in a location where others are not likely to come across it. Keep your new equipment in its package until you're ready to use it so that it remains sterile, and store your needles and syringes in a cool, dry place.

Always carefully store your used needles and syringes in a coffee can, spaghetti sauce jar, sharps container, polyurethane soda bottle, or similar container to prevent accidental needlesticks. If you live with another injector, be sure to keep your equipment separate to prevent accidental sharing. You might also want to mark your syringes so you can tell them apart.

PROPER DISPOSAL OF USED EQUIPMENT

It's best to take your used equipment to a needle exchange program or some other place where it will be properly disposed of. If you don't have access to such a program, throw it in the garbage but only after you've securely packaged it in a puncture-proof container. Don't flush your used equipment down the toilet because it may end up on a beach or in the ocean somewhere or stick the plumber who has to unclog the pipes.

WHERE TO GET NEW MATERIALS

Fortunately, many communities now have needle exchange programs where you can get new, sterile equipment for free and dispose of your used works. Definitely check out your local needle exchange if

there is one, and get involved! It's a great way to help out yourself and other users.

You may live in a place where you can buy injection equipment over the counter. Try to find a cooperative pharmacist and let him or her know you appreciate their assistance. Let other users know what drug stores will sell equipment to them.

If there are no other options, you can usually find injection equipment on the black market. **If you purchase needles and syringes on the street, however, clean them before you use them; sometimes dirty equipment is re-packaged and sold as new.**

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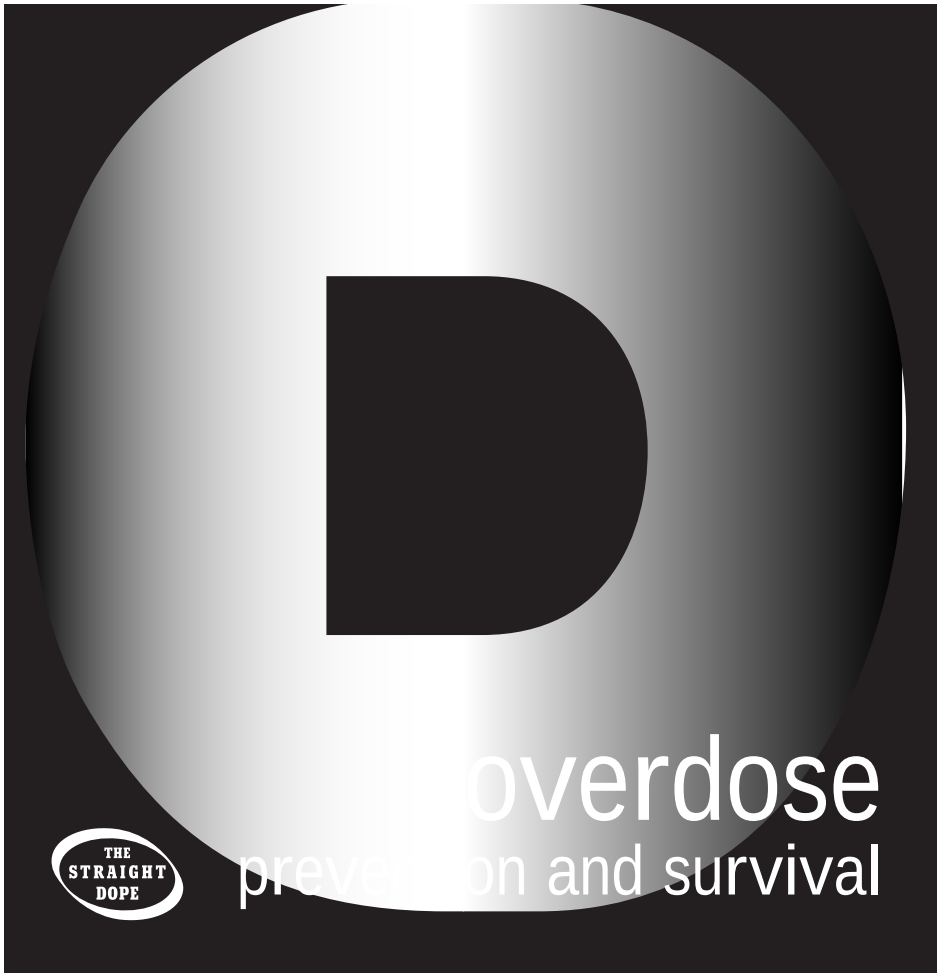
Local Contact:

The Straight Dope Education Series was created to provide accurate information about drugs so that people can make rational, safer and informed decisions about their drug use.

Special thanks to Dan Bigg of the Chicago Recovery Alliance, Raquel Algarin, L.P.N. of the Lower East Side Harm Reduction Center and the focus group participants from Citiwide Harm Reduction in Bronx, NY.



What is an Overdose?

Overdose (OD) happens when you take too much of a drug (or a combination of drugs), and it overwhelms your body—especially your brain and other important organs like your liver, heart, lungs and kidneys. When this happens your body looses the ability to cope with the drug: you may pass out, stop breathing, have heart failure or have seizures. All of these can kill you. But overdoses don't have to be fatal!

Anyone who uses drugs can overdose; from the first-time user to the veteran. There are many risk factors for overdose: some aren't even drug-related. Problems caused by poor health, depression/low self esteem, homelessness, drug prohibition/ scarcity and lack of syringes don't have immediate solutions. While it's good to be aware of them (thinking about how and why you use can lead to safer use), this brochure focuses on simple steps you can take to reduce your risk of overdosing. It also tells you how to keep someone alive if they OD.

Overdoses do not have to be fatal. The difference between life and death often depends on how you take care of the person who has overdosed.

How ODs Happen and Tips to Prevent Them.

Mixing drugs (like heroin, pills and alcohol) is the most common cause of death by overdose. Drugs taken together can interact in ways that increase their overall effect. With depressants (drugs that slow you down), the risk of passing out or stopping breathing increases. With stimulants (drugs that speed you up), the risk of seizures or heart attacks increases.

- Avoid mixing drugs that have the same effects, such as heroin with other depressants (like alcohol, Xanax or Clonopin) or cocaine with other stimulants (like speed and ecstasy).

Heroin and alcohol and/or downs are a particularly deadly combination. The more alcohol and/or downs you have in your system, the less heroin you need to overdose. Alcohol also affects your judgement, which can lead to mistakes in dosing.

If you plan to drink and do heroin too, take smaller amounts, do the heroin first and pace your drinking. If you do the heroin and then drink over a period of hours, it may give your body a chance to clear some of the heroin from your system before the effects of the alcohol fully build up. Plus, your mind is clearer when you're measuring your heroin dose. (The same goes for downs.)

Remember, the more you plan out in advance, the less room there is for error and panic in the event of an actual OD.

Tolerance has a lot to do with overdosing. If you are using a drug for the first time your body will not be used to it. If you haven't used for a while—like time in jail or detox—your tolerance decreases and your body can't take as much as it could before.

Many people who overdose have just come out of jail or detox. Be especially careful if you use after you've been away for a while: not only has your tolerance gone down, the strength of the dope may have risen.

- Do a little less if you haven't used lately. Even if it's only been a few days, your body may react to the drug like it did when you first began to use. If your health has worsened or you've lost weight since your last use, consider that too when measuring your dose.
- Take the drug in a way that gets you high more slowly—snorting heroin or cocaine rather than injecting it, for example.
- Try to use with someone who knows what to do in case you go out. If you must use alone, let a friend know so they can check in on you.
- Try to find out as much as you can about the stuff you plan to use: it may have gotten stronger since the last time you tried it.
- Be careful if you're using a new drug, as it will be hard to know how much to do. Try to use with someone who has some experience with the drug you're doing, *and with new users*.

Some people OD because they just do too much in a short time period, and the drugs build up in their system, leading to an overdose.

- Let your drugs work first before you do more. If you don't give your body enough time, you will overwhelm it.
- Purchase just the amount you plan to use. If you have to buy more than you need, see if you can stash it somewhere, like with a non-using friend.
- Keep track of how much you've used. Remember that each time you do more, you are increasing the amount of drugs in your system.
- Take control of your own preparation and intake. You are the only one who really knows how much you can handle.

There is no quality control with illegal drugs. Basically, you don't really know what you're getting. Street drugs vary in purity from day to day. They are often cut with cheaper drugs (or other materials) that can be dangerous, unpredictable and increase your chances of overdosing. Every time you buy from a different dealer or new batch, it's a gamble.

- Check out anything that's new: does it taste, smell and look OK?
- If you have doubts about what you just bought and you normally shoot-up, snort a bit first instead. Or…
- Do a tester shot first to see how strong the drugs are. You can even push a little in, and once sure it's ok, do the rest.
- If you get something that's really strong, let your friends know. If you get your needles at an exchange, see if they can put up a bulletin board or make up a hot sheet warning users of especially strong (or bad) dope.
- Try to buy from a regular source that you trust. Establish a relationship with a dealer who will talk to you about their product. Talk to the other buyers; the more information you have about potency, the better.

Changes in your health or body can put you at risk for an OD. Getting sick or losing weight affects your tolerance and your body's ability to adjust to the drug.

- Use less when you are sick or while you are recovering from illness.
- If you have lost weight, do a tester shot or take less to see how much you need.
- Women usually weigh less than men. If you're a woman getting high with a man, make sure your needs are taken into account when your dose is measured.
- Maintain your health by eating and sleeping well, drinking lots of juice and water and getting an annual physical.

Although not necessarily a cause of overdose, using alone increases the chance of fatally overdosing because there is no one there to call for help or take care of you if you go out. When you can, use with people you trust and talk with them about an overdose plan (see opposite).

- Put together a support system of people who know you use. Let them know when you plan to use alone and ask them to check in on you.
- If you are alone and overdosing, or afraid you might, call 911 or one of your supportive friends while you still can.
- If you do use alone, unlock your door so the paramedics or your friends can get inside.
- Think through each step of your drug-taking. This will lessen the likelihood of making a mistake that can lead to overdose.

Talk With Your Partners: Make A Plan For Dealing With Overdoses

The time to talk is when *all of you can talk.*

Questions to consider:

- When should someone take action? (Do you wake your friend if he's in a heavy nod? Do you call 911 if his breathing is erratic?)

What about…

- calling 911? (Immediately, or should resuscitation be tried first?)
- the use of rescue breathing? (If it's not working, at what point is 911 called? Narcan used?)
- trying narcan? (Where/how administered? How much - 1cc or less, multiple doses?)
- after the person resumes breathing? (What kind of support is desired? Will you take the person to the ER? Who will stay to make sure they don't OD again?)
- when the naloxone wears off? (Do you go to the ER? Who will stay with the person? What's to be done if the person's really dopesick afterwards?)
- Is it ok to remove an overdosing person's I.D—just in case they have any warrants? Some people have medical conditions, and an ID card or bracelet could help doctors save such a person's life, especially if the medical condition contributed to their collapse.

How can you tell if a person has Overdosed?

What happens when someone overdoses depends on the kind of drugs they have taken.

Depressant drugs like opiates (like heroin and Dilaudid) and sedatives (like Valium and alcohol) slow down your heart rate and breathing. A person who overdoses on a depressant may pass out, stop breathing or choke on their vomit—any of which can lead to death. Sometimes you can hear a person's raspy breathing and know they're having problems. Often, you don't know they've stopped breathing. If their face turns blue they are very close to death and need immediate attention—rescue breathing, or the Heimlich Maneuver (to clear a blockage in their windpipe) or CPR (if their heart has stopped). Call 911 immediately!

Stimulants (like speed and cocaine) speed up the body's functions. A person who has overdosed on any of these may collapse from exhaustion, have a seizure or become so disoriented that they accidentally hurt themselves. They can also have a heart attack or experience cardiac arrest.

Someone who is overdosing isn't always aware of what is happening. They may be helpless; if so, you need to act quickly. If a person stops breathing, it only takes a few minutes for them to die. Don't wait for them to "get over it": they could die, or suffer permanent brain damage from lack of oxygen.

Symptoms of an Overdose	
Depressants • Awake, but unable to talk • Body is very limp • Face is very pale • Pulse (heartbeat) is slow, erratic or not there at all • Breathing is very slow and shallow, erratic or has stopped • Passing out • Choking sounds, or a gurgling noise • Throwing-up	Stimulants • Foaming at the mouth • Pressure, tightness or pain in chest • Shaking, or seizures • Passing out • Choking sounds, or a gurgling noise • Throwing-up

What To Do If Someone Overdoses.

If someone looks like they are overdosing, act quickly and follow these steps:

First, find out if the person is conscious. See if the person can open their eyes or speak to you: shake them and call their name. If that doesn't work try to bring them around by causing pain: rubbing their breastbone with your knuckles really hard, or twisting a pencil up against the space between their fingers. Don't worry about either of these methods hurting too much! It is more important that the person wakes up.

Heimlich maneuver

Place fist just above navel and give 5 quick upward thrusts until object is removed.

Check Pulse

If the person is conscious:

1. Do they know what's happening to them? Get them up and walking around, even if you have to hold them up. Talk to them; it's important to keep them as alert as possible.
2. If they are experiencing nausea, chest tightness, shortness of breath, choking or similar symptoms, call 911 (see p. 13 for tips on how to call).
3. If they are choking, use the Heimlich Maneuver (see picture, left).
4. Stay with them and keep an eye on them. Otherwise, they could pass out, stop breathing and die.

If the person is unconscious:

1. Check their pulse (if you know how) and breathing
   - Does a mirror held under their mouth fog up?
   - Can you feel their breath on your hand?
   - Is their chest moving up and down?
   - Can you hear their heartbeat when you put your ear to their chest? Feel a pulse on their neck?
2. If the person's breathing is erratic or has stopped altogether, or they have blue skin or no pulse, call 911 immediately. If you don't know how to give first aid put them in the recovery position. While you wait for help to come, continue trying to wake them.

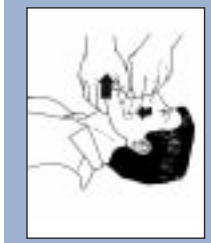
If you know how to do first aid, start right away. *If they have a pulse, just do rescue breathing.* (see picture, right). *If there is no pulse (and you know how to perform CPR) begin now* (see 7, below).

3. Begin Rescue Breathing: Tilt head back and lift chin. Pinch nose shut. Give one slow breath every 5 seconds. If your breaths don't go in retilt head and repeat breathing. *If air still won't go in...*
4. Give Abdominal Thrusts: Sit on their legs. Placing hands a few inches above belly button (but below breast bone's notch) press in and up, 5 quick independent thrusts. (see illustrations, right). *If air still won't go in...*
5. Check to see if the person's airway is clear.
6. If there is something blocking their throat, like vomit or food, do a finger sweep. Hold down chin. Use the forefinger of your other hand as a scoop and remove the object—see illustration, left. (Don't worry about them swallowing their tongue—that is a myth.)

Once airway is clear, restart breathing, or if there is no pulse...

Rescue Breathing

Abdominal Thrusts



Airway Check

CPR

NOTE
Performing rescue breathing/CPR is one of the most important things you can do to help someone survive an od. Because a brochure like this cannot be a substitute for actual first aid training, HRC urges users to contact their local red cross, YMCA or needle exchange for rescue breathing or CPR instruction classes.

7. Begin CPR
   - Find hand position on center of breastbone, above the notch. (See picture, left)
   - Compress chest 15 times with arms locked at elbow, then give 2 slow breaths (repeat whole cycle 5 times a minute).
   - Repeat until heart restarts or help arrives.
8. If you have narcan and know how to use it, give them 1mg. While you wait for the narcan to take effect remember to continue with the rescue breathing. If they don't respond after a few minutes, give them another 1mg. If they haven't responded after 3-5 mg most likely there is something else causing their present condition that requires immediate medical intervention. In such cases, continuing to give them narcan wastes valuable time.
9. Stay with them, and keep an eye on their condition, as it can suddenly get worse. If you must leave—for a minute or permanently—put them in the recovery position (see picture below).

Recovery Position

When you call 911, say "my friend is unconscious and not breathing." If you don't tell the operator that the person's overdosed, they may not send the police.

Calling 911

Many of us are afraid to call 911 when someone we know ODs. You may have had a bad experience with paramedics, or heard stories about people being arrested when the cops came too. But if you don't know how to do rescue breathing and/or CPR (or don't want to), and you don't have narcan, calling 911 may be the only way to save the person's life. Here are a few tips for your call:

When you make the call…
- Be as calm as possible: the more things appear to be under control the less likely the cops will be sent.
- Be clear and concise. Telling the dispatcher someone's stopped breathing should get the paramedics zipping over. If you're asked if it's an overdose, don't lie. Say you think the person took something, but you're not sure what it was.
- Make sure you've given them the address, phone number (if there is one) and instructions on how to get into the building. (If you're squatting, send someone out to the street to wait, if you can.)

If you're afraid of the cops, absolutely cannot stay and no one else is around…
- You can still call 911. If you're on the street or in a park, calling from a pay phone is pretty anonymous.
- If you can do it without hurting your friend, take her into the street, or the building doorway. The easier it is for the paramedics to get to her, the better. Remember to put her in the recovery position!

- If your friend is outside, try to get a passerby to help before you leave.
- If you can't move your friend, you can stay until you hear the sirens get really close, then split. Just make sure help can get to your friend: leave the door open, put a note up, etc. Again, remember to put her in the recovery position before you leave. A final suggestion: if it's not your place and there's a fire escape or back door, you can always wait until the last minute and duck out the back way.

If your friend wakes up: A person can OD again, so it's important to stay with your friend, or take her to the emergency room.

When help arrives…

If it's just paramedics: The paramedics are there to help. Give them as much info as possible: what the person took, any medical conditions you know about, etc. (You don't have to tell them you used, or that you saw your friend use.) Be respectful of the paramedics and let them do their job; they will usually only call the police if they are physically threatened.

If the cops come too: Most times paramedics can figure out what's wrong with someone. Sometimes, though, when a person is really overdosed, or has taken drug combinations, it's not as obvious. Even if you have to pull the paramedic to the side to tell them what was taken, this can make a difference—especially if more than one drug is involved! Just remain calm, don't have an attitude and be as honest as you can without getting yourself into trouble.

For many of you, hiding cookers, cottons, empty bags, etc. before anyone comes is standard practice. Remember to put the person in the recovery position while you do this!

About Narcan

Narcan is the drug paramedics use to revive people who've ODed on opiates. Narcan restarts a person's breathing by blocking the opiates in their system. If you don't have a habit narcan may make you feel a little uncomfortable but it shouldn't hurt you. Giving narcan to someone who has a habit may send them into withdrawal, so be prepared to support them until the narcan wears off. And remember, since narcan only lasts about an hour, another dose may be needed to keep the person from ODing again. Although you need a prescription for narcan, some harm reduction activists are working to make it freely available. Ask your local needle exchange if they teach you how to use it. (For more information, contact HRC for copies of our Fall 1999 newsletter, which has a bunch of articles on ODs and narcan, or see HRC's website, www.harmreduction.org.)

Narcan's effects only last for about an hour. Once it wears off, the person can OD again.

What NOT to do if someone overdoses.

Do NOT inject the person with salt water, or milk. Neither will help revive the person, and the time you spend looking for a vein could be better spent doing rescue breathing or trying to wake them up.

Do NOT inject the person who has overdosed on heroin with cocaine or speed, or vice versa. It wastes valuable time and can make them worse: it's one more drug that their body has to deal with..

Do NOT put the person in a cold water bath—they may drown. If they are still breathing, you can put them under a cool shower to wake them up, but stay there with them and keep the water away from their nose and mouth.

Do NOT leave someone who has overdosed alone, even after you've called an ambulance. If you must go, leave them in the recovery position.

Warning To Parents!

A form of tattoo known as "Blue Star" is being sold to our school children. Resembling the star of the Dallas Cowboys, it is made of paper, is approximetly the size of a pencil eraser, and is soaked with LSD.

The drug is absorbed through the skin simply by handling the paper tattoo.

There are also bright colored paper tattoos resembling postage stamps that have the picture of the following :

Superman
Mickey Mouse
Clowns
Disney Characters
Bart Simpson
Butterflies

These too are laced with drugs. If your child gets any of the above, do not handle them. These are known to react quickly and some are laced with STRYCHNINE.

Symptoms: Hallucinations, Severe vomiting, uncontrollable laughing, mood changes, changes in body temperature.

Please feel free to reproduce this article and distribute it throughout your community... WE must get the word out about this danger to our children. Make copies for your friends, neighbors, church, school,etc....

PLEASE HELP....TATTOOS HAVE ALREADY TAKEN THE LIVES OF MANY YOUNG CHILDREN !

Rx

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OCT 1988

HEALTH ADVISORY-DRUG WATCH

A form of tatoo called "BLUE STAR" is being sold to school children. It is a small sheet of white paper containing a blue star, the size of a pencil eraser. Each star is soaked with LSD!!!

Each star can be removed an placed in the mouth. THE LSD CAN ALSO BE ABSORBED THROUGH THE SKIN BY HANDLING THE PAPER!!!!

There are also brightly colored tabs resembling postage stamps that have pictures of Superman, butterflies, clowns, Mickey Mouse, and other Disney characters on them. These stamps are packed in a red cardboard box wrapped in foil. This is a new way of selling ACID by appealing to young children.

A young child could happen upon these and have a disastrous or even fatal "trip". It also has been learned that little children have been given a free "tatoo" by other children who want to have some "fun" or by others who are trying to cultivate new customers.

A red stamp called "RED PYRAMID" is also being distributed along with "MICRO DOT" in various colors and another kind called "WINDOW PANE" which has a grid that can be cut out.

THESE ARE ALL LACED WITH DANGEROUS DRUGS.....Please advise you children, friends, and neighbors about these drugs. If you or your child should see any of the above items...DO NOT HANDLE THEM!!! THESE DRUGS ARE KNOWN TO HAVE A RAPID ACTION AND SOME ARE LACED WITH STRYCHNINE.

Symptoms are: hallucinations, severe vomiting, uncontrolled laughter, mood changes, and changes in body temperature. If anyone is exposed to these get them to the hospital as quickly as possible and call the police.

This is very scary information but it is important for everyone to be aware of the dangers of these drugs.

Presented as a public service by Mark Pharmacy.

To Our Valued Customers

WARNING! WARNING!
TO
PARENTS AND STUDENTS!

A Form Of Tattoo Called "Blue Star"

is being sold to school children. It is a small piece of paper containing a "Blue Star". They are the size of a pencil eraser, and each star is soaked with LSD.

The Drug Is Absorbed Through The Skin Simply By Handling The Paper!

There are also Brightly colored paper tattoos resembling postage stamps that have the pictures of the following:

Superman, Mickey Mouse, Clowns, Disney Characters, Bart Simpson, Butterflies, Etc.

Each one is wrapped in foil.
This is a new way of selling acid by appealing to young children!
They are laced with drugs! If your child gets any of the above,
Do Not Handle Them! These are known to react quickly
and some are laced with Strychnine!

Please feel free to reproduce this article and distribute it. Get The Word Out!
Copy it! Post it! Give it out! Mail a copy! Give it to friends, at school, at work.
This is very serious. Young lives have already been taken. This is growing fast!

Brought to you by Black Pages as a Public Service Announcement

USED TiE GUY

The • Village • Voice

JUNE, 1996 • Published monthly for *The Villages of Marlborough Community Association, Inc.*

INSIDE

This article was recently received by e-mail over the military's Internet by [redacted] *of the U.S.A.F.*

For all of you that have children, regardless of their ages. Please give this your widest possible dissemination.

A form of tattoo called "Blue Star" is being sold to school children. It is a small piece of paper containing a blue star. They are the size of a pencil eraser, and each star is soaked with LSD. **The drug is absorbed through the skin simply by handling the paper.** There are also brightly colored paper tattoos resembling postage stamps that have pictures of the following: Superman, Mickey Mouse, Clowns, Disney characters, Bart Simpson, Butterflies, etc.

Each one is wrapped in foil. This is a new way of selling acid by appealing to young children! They are laced with drugs!

If your child gets any of the above, do not handle them. They are known to react quickly and some are laced with **strychnine.** Please feel free to reproduce this article and distribute it within your community and work place. Get the word out about this danger to our children.

FROM: J. O'Donnell
Danbury Hospital Outpatient Chemical Dependency Treatment Service

Please copy and post at your work, give to friends, send a copy to your local schools. This is very serious, young lives have already been taken. This is growing faster than we can warn parents and professionals.

YAHOO! NEWS

Back to Story - Help

REUTERS

U.S. marijuana grows stronger than before: report

By Maggie Fox, Health and Science Editor*Wed Apr 25, 10:05 PM ET*

The marijuana being sold across the United States is stronger than ever, which could explain a growing number of medical emergencies that involve the drug, government drug experts on Wednesday.

Analysis of seized samples of marijuana and hashish showed that more of the cannabis on the market is of the strongest grade, the White House and National Institute for Drug Abuse said.

They cited data from the University of Mississippi's Marijuana Potency Project showing the average levels of THC, the active ingredient in marijuana, in the products rose from 7 percent in 2003 to 8.5 percent in 2006.

The level had risen steadily from 3.5 percent in 1988.

National Institute on Drug Abuse Director Dr. Nora Volkow fears the problem is not being taken seriously because many adults remember the marijuana of their youth as harmless.

"It's really not the same type of marijuana," Volkow said in a telephone interview.

"This could explain why there has been an increase in the number of medical emergencies involving marijuana."

According to the Substance Abuse and Mental Health Adminstration, marijuana was involved in 242,200 visits to hospital emergency rooms in 2005. This means that the patient mentioned using marijuana and does not mean the drug directly caused the accident or condition being treated, SAMHSA says.

The number is up from 215,000 visits in 2004.

The pharmacy department at Mississippi has compiled data on 59,369 samples of cannabis, 1,225 hashish samples, and 443 hash oil samples confiscated since 1975. "The highest concentration of (THC) found in a cannabis (marijuana) sample is 33.12 percent from Oregon State Police," the report reads.

'THIS IS POT 2.0'

Hashish and hash oil concentrations are far higher, as they consist of processed plant product.

"Researchers and treatment experts have argued for some time that today's more powerful marijuana has more harmful effects on users. This report underscores that we are no longer talking about the drug of the 1960s and 1970s -- this is Pot 2.0," John Walters, director of National Drug Control Policy, said in a statement.

Volkow said demand has driven growers to cultivate the stronger stuff. "It is the market," she said. "Like in the market you favor the best tomatoes. When people buy marijuana, they don't want a weak cigarette."

Volkow's institute has been studying the effects of cannabis, whose active ingredients are very similar to important brain chemicals called endogenous cannabinoids. "It clearly is addictive," she said.

If children and adolescents use marijuana, it could affect their still-developing brains, she said.

The report said more than 60 percent of teens receiving treatment for drug abuse or dependence report marijuana as their primary drug of abuse.

"Although the overall number of young people using marijuana has declined in recent years, there is still reason for great concern, particularly since roughly 60 percent of first-time marijuana users are under 18 years old," Volkow said.

According to the National Survey on Drug Use and Health 4.1 million Americans, or 1.7 percent of the population, report they use marijuana.

Spreading the light of science

Guidelines on harm reduction related to injecting drug use

International Federation
of Red Cross and Red Crescent Societies

2003

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Foreword

When the International Federation of Red Cross and Red Crescent Societies was founded in 1919, a major goal was to 'spread the light of science and the warmth of human sympathy into every corner of the world', particularly in the field of health care. Today, the message of the International Federation is the same as it was 84 years ago.

Sound scientific evidence and human compassion must be the guiding force in our response to the humanitarian challenges we face. But sadly, political imperatives, donor demands, and ignorance and fear continue to impede the work of preventing and alleviating suffering and protecting human dignity.

Nowhere, is the gap between a humanitarian response based on compassion and scientific evidence and the inadequacies of actual practices, more evident than in the inhumane treatment of injecting drug users. These people are in need of care and compassion, and real alternatives. Instead, they routinely face harassment, stigmatization, violence and social exclusion. The stigma attached to drug use is causing further marginalization of this most vulnerable group and this is directly impeding efforts to prevent the spread of HIV.

Forcing people who use drugs further underground and into situations where transmission of HIV/AIDS is more likely, and denying them access to life-saving treatment and prevention services is creating a public health disaster. This happens even though the evidence from scientific and medical research on best practices and cost benefit analyses is overwhelmingly in favour of harm reduction programming. This includes needle exchange, drug substitution treatment and condom distribution as part of the response to HIV/AIDS.

The message is clear. It is time to be guided by the light of science, not by the darkness of ignorance and fear. If we are to put a stop to this trend, communities need to treat drug users in a more humane way, respecting them as people with rights and needs. The Red Cross and Red Crescent is well placed to advocate for the just treatment of drug-users and for harm reduction in general. Our respected name and emblem enable us to reach a wide audience the world over and our compassion and concern for human health and dignity have earned us the trust of the most marginalized groups.

From this perspective, it is very appropriate that the theme of the International Conference of the Red Cross and the Red Crescent in 2003 is Protecting Human Dignity. The Agenda for Humanitarian Action emerging from that conference is one more step in the promotion of humanitarian values, and building the climate to reduce marginalization so the risk and impact of HIV/AIDS and other infectious diseases can be reduced. It demonstrates that the Red Cross and Red Crescent values every life by extending humanitarian assistance to where is it most needed, without discrimination.

Juan Manuel Suárez del Toro Rivero
President
International Federation of Red Cross and Red Crescent Societies

Contents

Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
ANCD	Australian National Council on Drugs
ARV	Anti-retroviral
CBO	Community-based organization
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human Immunodeficiency Virus
IDU	Injecting drug user
NEP	Needle exchange programme
NGO	Non-governmental organization
PHC	Primary health care
PLWHA	People living with HIV/AIDS
STI	Sexually transmitted infection
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

Introduction

The purpose of this document is to outline the rationale for harm reduction programmes. It outlines generic approaches that National Societies can adapt to the realities of their countries in the development and implementation of harm reduction programme and in conducting advocacy for the acceptance and realization such programmes.

The guidelines are designed for National Society staff and volunteers working at all levels and for those involved in planning, organizing, implementing and assessing harm reduction programmes, as well as those involved in advocacy. The document also sets out ideas related to programme development, ways to facilitate programme implementation, as well as ways to plan and realize advocacy activities.

These guidelines were compiled at the request of the Governing Board. The request was made at the same meeting at which the board adopted the International Federation's HIV/AIDS policy, in 2002. It is expected that the guidelines will be used to give strategic direction to all National Societies intending to address the challenges of HIV/AIDS among injecting drug users (IDUs). The document is based on an extensive literature review related to the impact of harm reduction programmes and to the lessons learned concerning the implementation of harm reduction programmes by various organizations over the last decade.

Andrew MacColl/Federation

These guidelines are part of the International Red Cross and Red Crescent Movement's response to the HIV/AIDS epidemic and should be read in conjunction with other relevant International Federation documents, including:

- the 2003-2005 International Federation global programme: Reducing household vulnerability to HIV/AIDS and other infectious diseases [1], and update 2003;
- AIDS, Health and Human Rights manual; [2]
- Orphans and other children made vulnerable by HIV/AIDS. Principles and Operating Guidelines for Programming; [3]
- Community home-based care for persons living with HIV/AIDS: A framework for National Society programming; [4]
- the Fundamental Principles of the International Red Cross and Red Crescent Movement; and
- Operational Guidelines for Planning.

There are other supporting International Federation documents:

- The International Federation HIV/AIDS Policy, 2002, approved by the Governing Board, provides a framework to support National Societies in the implementation of HIV/AIDS related activities. It states, "Guided by sound public health and humanitarian principles, promote and where appropriate facilitate harm reduction strategies for high risk behaviours and traditional practices, including advocacy for law reform as necessary". [5]

1 http://www.ifrc.org/what/health/hivaids/vulnerability/index.asp.
2 Publications, Geneva: International Federation of Red Cross and Red Crescent Societies, Harvard School of Public Health, 1995, available in English, French and Spanish. To order, e-mail guidera@ifrc.org.
3 http://www.ifrc.org/what/health/tools/index.asp#hivaids.
4 http://www.ifrc.org/what/health/tools/index.asp#hivaids.
5 http://www.ifrc.org/who/policy/hivaids.asp.
6 http://www.ifrc.org/cgi/pdf_berlin.pl?health.pdf.
7 http://www.aprc.net/map2002.htm.
8 http://www.ifrc.org/what/health/hivaids/antistigma/declaration.asp.
9 Millennium Declaration signed by 189 countries, September 2000. www.un.org/documents/ga/res/55/a55r2002.pdf.
10 UNGASS, Paragraph 34 http://www.unaids.org/UNGASS/.
11 See footnotes 50, 51 and 52 and text.
12 UN Economic and Social Council, Commission on Narcotic Drugs, forty-fifth session, E/CN.7/2002/L.3/Rev. 1, 12 March 2002.

- The European National Societies Conference in Berlin, April 2002, unanimously supported implementing harm reduction strategies, marking a major step forward to addressing the rapid increase in infection in the region.[6]
- The Manila Action Plan, which concluded the Manila Conference in December 2002, requires all National Societies in the Asia, Pacific and Middle East regions to develop culturally appropriate harm reduction programmes.[7]
- The International Federation 13th General Assembly Declaration of 2001 states, "Recognizing that the HIV/AIDS epidemic is a devastating health and socio-economic crisis; following the Fundamental Principles of humanity, impartiality and neutrality; acknowledging the commitment to serve and involve the most vulnerable people, including people living with HIV/AIDS; and recognizing the need to build partnerships at all levels in order to be successful, the Assembly declared that HIV/AIDS will be confronted through prevention, care, treatment and support, and the promotion of dignity of those affected".[8]

These guidelines are in conformity with:

- the Millennium Declaration[9], Goal 6, in which states committed to halting and beginning to reverse the spread of HIV/AIDS by 2015;
- the Declaration of United Nations General Assembly Special Session on HIV/AIDS (UNGASS), 2001, which recognized the work of the Federation. "Further acknowledging the efforts of international organizations combating the epidemic, including the volunteers of the International Federation of Red Cross and Red Crescent Societies in the most affected areas all over the world."[10] The Declaration also makes specific reference to harm reduction, drug using behaviour, and stigma and discrimination[11]; and
- the United Nations Commission on Narcotic Drugs resolution on HIV/AIDS and drug abuse which "recognizes that effective prevention, care and treatment strategies require behavioural changes and increased availability of and non-discriminatory access to, inter alia, vaccines, condoms, microbicides, lubricants, sterile injecting equipment, drug therapy, including anti-retroviral therapy, diagnostics and related technologies, as well as increased research and development, encourages Member States to strengthen efforts to reduce the demand for illicit drugs and to ensure that a comprehensive package of prevention, education, treatment and rehabilitation measures are accessible to all individuals who use and abuse illicit drugs, including those infected with HIV/AIDS, and encourages Member States to; implement measures that reduce or eliminate the need to share non-sterile injecting equipment.[12]

The guidelines outline the epidemiological data concerning injecting drug use and HIV infection; the increasing drug and injecting drug use; and needle sharing. The human rights, humanitarian and public health rationales as well as cost effectiveness of harm reduction programmes are laid out. Finally, information and possible activities for National Societies are outlined.

Federation

Background

People have used psychoactive substances since time immemorial. Consumption has been through inhalation or smoking as well as ingestion of fluid or solid substances. Manufactured drugs and modernized methods of administration are relatively new phenomena beginning in the last decades of the 19th century. Needles and syringes are a relatively recent invention, now routinely used to administer drugs in both medical settings as well as for many illegal drugs.

The availability of drugs, human curiosity, pleasure, peer pressure, economic deprivation, social and religious traditions, a lack of objective information on drugs and their effects, psychological illness, and possibly genetic factors, play roles in people's use and abuse of drugs. Substance use and abuse are not isolated behaviours and failure to see them, possibly, as part of larger patterns of risk taking may create barriers to effective interventions. In addition, IDUs are affected by problems such as high rates of homelessness, unemployment, low educational levels and little information on HIV and other health problems associated with injecting drug use.

Australian Red Cross

Over the past century, and increasingly in the last decades, governments in many countries have adopted strict policies against the provision, sale and use of illegal drugs as well as on the possession of drug use paraphernalia.[13] The objective has been to create a society free of illegal drugs. At the same time, most cultures accept other drugs of addiction such as tobacco, alcohol, quat, bettlenut and caffeine. And these are used by governments to raise revenue through taxes, even though conclusive medical evidence exists that some of these drugs can cause serious social and health problems, including death.

Since the early 1990s, the changed geo-political climate has seen the opening of borders which were previously closed, creating new drug trafficking routes and markets, and opening up old ones. The effects of these developments have been enhanced by the globalization of drug markets and distribution networks, and by the increase of informal economies including the drug market as an unwanted by-product of drug suppression activities.

In spite of laws and governmental measures, such as intensive policing, imprisonment and, in some countries, 'war on drugs', illegal drug use is on the increase. This approach, which includes imprisonment and harassment by law enforcement agencies, drive many drug users underground, away from social support services, including health services, making contact, providing HIV education and prevention as well as and health care difficult.

In addition, legalistic approaches and government policies which aim at criminalizing the behaviour of people who use drugs have created and reinforce the stigma and discrimination faced by people who use substances. In some countries, this has been transferred to people living with HIV/AIDS (PLWHA) or specifically to PLWHA who use drugs.

Furthermore, discrimination faced by IDUs can also be found in the medical setting. It has been reported in many countries where there are HIV-positive IDUs, that doctors are refusing to proscribe anti-retroviral (ARV) therapy to IDUs on the basis that they are unlikely to adhere to the complicated drug regimes, which may result in the formation of drug resistant mutations of HIV, which in turn will be transmitted to other drug using or sexual partners. Studies have shown that HIV-infected drug users who receive comprehensive assistance usually have good ARV adherence.[14] Such paternalistic and discriminatory approaches are compromising the health of HIV-positive as many HIV-positive IDUs are delaying HIV treatment much longer than non-users.

Finally, another problem faced by HIV-positive IDUs is pain management, since IDUs usually have a very high tolerance for depressant drugs and need higher, not lower, dosages for effective pain management.

13 United Nations Single Convention on Narcotic Drugs, 1961 aims to combat drug abuse by coordinated international action. There are two forms of intervention and control that work together. First, it seeks to limit the possession, use, trade, distribution, import, export, manufacture and production of drugs exclusively to medical and scientific purposes. Second, it combats drug trafficking through international cooperation to deter and discourage drug traffickers.
United Nations Convention on Psychotropic Substances, 1971, establishes an international control system for psychotropic substances. It responded to the diversification and expansion of the spectrum of drugs of abuse and introduced controls over a number of synthetic drugs according to their abuse potential on the one hand and their therapeutic value on the other.
United Nations Convention against the Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988, provides comprehensive measures against drug trafficking, including provisions against money laundering and the diversion of precursor chemicals. It provides for international cooperation through, for example, extradition of drug traffickers, controlled deliveries and transfer of proceedings http://www.unodc.org/unodc/un_treaties_and_resolutions.html.

14 IDUs taking part in methadone maintenance programmes have an increased adherence and long-term ARV success. Linking drug therapy programs with ARV treatment and using directly observed therapy where possible may also contribute to antiretroviral success. Providing IDUs with frequent, careful medical and psychosocial follow-up with constant reinforcement of the need for ARV treatment and the ability of the clinician to manage ARV-related side effects and potential toxicities are also keys to success. Mulcahy F, *Antiviral therapy and management of HIV in intravenous drug users*, Program and abstracts of the Fifth Congress on Drug Therapy in HIV Infection, Glasgow, Scotland. Abstract PL3.3, October, 2000.

Chapter 1 Injecting drug use

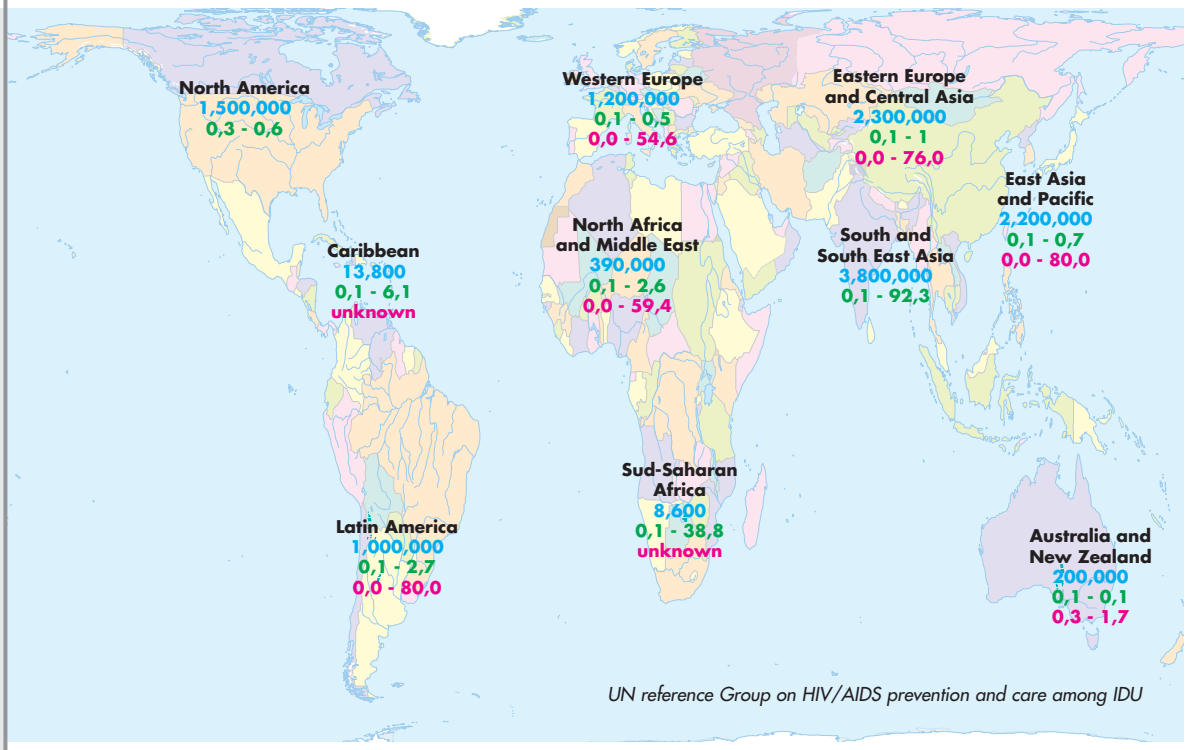
Section 1.1

Injecting drug use and HIV epidemiological data

Many injecting drug users are occasional or opportunistic recreational users. They do not fit the stereotype of the 'drug addict'. However, such delineation does not protect recreational users from HIV infection. Some individuals report being able to regulate their drug use for long periods and maintain work and family responsibilities, and this is referred to in the literature as 'functional drug use'.

Nevertheless, it is clear that many people, even when they are well informed about the risks associated with drug use, continue to use them. Most individuals who are regular IDUs do become addicted over time, and this often adversely affects their own lives, their partner's and the community in which they live. Recovery from drug addiction is at best a long-term process, usually involving relapse. Considerable courage and support is needed to face the pain and personal growth involved. It is clear that this recovery process usually needs to be undertaken voluntarily to be effective and sustained.

Some of the worst public health problems associated with drug use involve the sharing of injecting equipment. Of all the modes of HIV transmission, directly injecting a substance such as opiates like



Estimated global IDU population, 1998/2003 - 12,600,000 IDU
Global HIV prevalence (%) among adults (15-49), in 2001*
and HIV prevalence (%) among IDU, 1998/2003

* UNAIDS Report on the global HIV/AIDS epidemia 2002

heroin, methadone or morphine, or other drugs such as cocaine, amphetamines, barbiturates, anabolic steroids, antibiotics or vitamins contaminated with HIV into the blood stream is by far the most efficient.

The risk of HIV infection or infection with other blood borne viruses such as hepatitis B virus (HBV), hepatitis C virus (HCV) is not through drugs themselves, but rather their mode of administration. Some IDUs, frequently, others, occasionally, share needles and syringes or other equipment used in the process of preparing drug mixes for injection.

The sharing of contaminated drug injecting equipment and drug preparations is a highly efficient means of spreading HIV. Usually, small amounts of blood enter the needle and syringe when drugs are injected. In addition, the blood can then be transferred to other drug injecting equipment such as 'cookers', filters and drug containers, as well as water used for mixing and rinsing.

Only a small amount of infected blood is needed to pass on the virus from one drug user to another, so any type of equipment sharing poses a high risk of HIV transmission. The worst situations for the spread of HIV are when many IDUs are using the same needle and syringe, such as in the 'shooting galleries' of North America and with some 'professional' injectors in Asia, eastern Europe and Latin America, as well as in prisons.

In the last decades, long standing patterns of drug injection in developed countries have been joined by the emergence of injecting drug use in many developing countries. This has occurred even in countries which were thought to be resistant to injecting because of their drug using tradition, cultural behaviours, or religious or spiritual beliefs.[15]

In some developing countries, injecting is found in many social groups, in rural and urban areas, and among township dwellers and hill tribes. The spread of injection has been followed by harmful health and social consequences including the rapid spread of HIV infection among IDUs, now reported in 114 countries of the 136 countries which report IDU, HIV transmission to sexual partners and their children, economic costs to families and communities, and loss of liberty or life for drug users from penal or community sanctions.

Currently, it is estimated that there are more than 10 million people globally who inject drugs. Of these, 2-3 million people are estimated to be HIV-positive. This translates to an estimated 10 per cent of HIV infections globally, resulting from shared injecting equipment. In 1992, the number of countries which reported HIV infection associated with injecting drug use was 52. However, by 1999 this had increased to 114.[16]

Asia is estimated to have the largest number of injecting-drug-related HIV cases. Injecting drug use is also a major factor in HIV epidemics in North America, western Europe and in parts of Latin America, the Middle East and North Africa. In some eastern European countries, especially in countries of the former Soviet Union, shared injecting equipment is driving major HIV/AIDS epidemics among young people, and many outreach programmes report rising numbers of sexually active teenage drug users.

Injecting-drug-related HIV epidemics do not remain limited to injecting drug users. Most injecting drug users are young, male and sexually active. They are likely to acquire or transmit the HIV virus not only by sharing injecting equipment but also through sexual intercourse with regular or casual partners. Injecting drug use also overlaps profoundly with the sex trade, with users often buying sex or selling sex to finance their drug dependencies.

15 *Report on the Global HIV/AIDS Epidemic*, UNAIDS, 2002.
16 *Report on the Global HIV/AIDS Epidemic*, UNAIDS, 2002.

In 2000, in Hanoi, Viet Nam, 20 per cent of street-based female sex workers reported recent drug injection, while 23 per cent of male injecting drug users bought sex. In Bangladesh, the corresponding figures were 14 per cent and 50–75 per cent, respectively. Similarly, in some cities of the Russian Federation and Ukraine, up to 30 per cent of female injecting drug users are also involved in commercial sex work. More generally, recent studies in Donetsk, Moscow and St Petersburg have revealed HIV prevalence rates of 13-17 per cent among sex workers.

The remainder of this section draws on the findings of the 2002 Joint United Nations Programme on HIV/AIDS (UNAIDS) Report on the Global HIV/AIDS Epidemic.

Asia

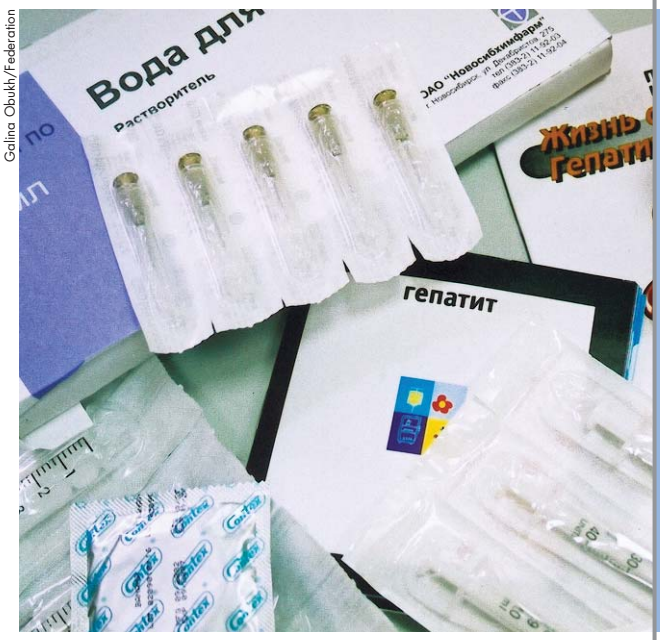
Throughout the region, injecting drug use offers the epidemic huge scope for growth. Upwards of 50 per cent of injecting drug users have already acquired the virus in parts of Malaysia, Myanmar, Nepal, Thailand, Indonesia, and in Manipur in India. Very high rates of needle sharing have been documented among users in Bangladesh and Viet Nam, along with evidence that a considerable proportion of street-based sex workers in Viet Nam also inject drugs (a phenomenon detected in other countries, too).

The epidemic in China shows no signs of abating. Serious localized HIV epidemics are occurring among injecting drug users in nine provinces, as well as in Beijing municipality. The most recent reported outbreaks of HIV among injecting drug users have been in Hunan and Guizhou provinces (where sentinel surveillance among users has revealed HIV prevalence rates of 8 per cent and 14 per cent, respectively).

S. Noorani/UNAIDS

Eastern Europe and central Asia

Eastern Europe and central Asia have the unfortunate distinction of having the world's fastest-growing HIV/AIDS epidemic. In recent years, the Russian Federation has experienced an exceptionally steep rise in reported HIV infections. In less than eight years, HIV/AIDS epidemics have been discovered in more than 30 cities and 86 of the country's 89 regions. Up to 90 per cent of the registered infections have been officially attributed to injecting drug use, reflecting the fact that young people face high risks of HIV infection as occasional or regular drug injectors. Also in the region, 70 per cent of HIV infections in Ukraine, 80 per cent in Belarus, 83 per cent in Kazakhstan and 84 per cent in Moldavia are estimated to be the result of injecting drug use.



Galina Obukh/Federation

The HIV epidemic is growing in Kazakhstan, where a total of 1,926 HIV infections were reported as at June 2001. A more substantial spread of HIV is now also evident in Azerbaijan, Georgia, Kyrgyzstan, Tajikistan and Uzbekistan. In the latter two republics, recent evidence of rising heroin use heightens concerns that they could be on the brink of larger HIV/AIDS epidemics. Already, a steep rise in reported HIV infections has been noted in Uzbekistan, where 620 new infections were registered in the first six months of 2002 – six times the number of new infections registered in the first six months of 2001.

Reported HIV incidence is rising sharply elsewhere. In Estonia, reported infections soared from 12 in 1999 to 1,474 in 2001. Relative to population size, Estonia now has the highest rate of new HIV infections in this region – 50 per cent higher than the Russian rate. A burgeoning epidemic is also visible in Latvia. New reported infections rose from 25 in 1997 to 807 in 2001. A further 308 new HIV cases were registered by the end of June 2002.

The other Baltic state, Lithuania, experienced a major HIV outbreak in one of its prisons, where 284 inmates (15 per cent of the total) were diagnosed HIV-positive between May and August 2002. This confirms the important and often overlooked role of prisons in the spread of HIV in many countries of the region.

Latin America and the Caribbean

The spread of HIV through the sharing of injecting drug equipment is of growing concern in several countries, notably Argentina, Brazil, Chile, Paraguay and Uruguay (in South America), the northern parts of Mexico, and Bermuda and Puerto Rico (in the Caribbean). Injecting drug use accounts for an estimated 40 per cent of reported new infections in Argentina and 28 per cent in Uruguay. In both countries, an increasing number of women with HIV are either injecting drug users or sexual partners of male drug users.

North Africa and the Middle East

Significant outbreaks of HIV infections among injecting drug users have occurred in about half the countries in the region, notably in North Africa and in the Islamic Republic of Iran.

In Iran, most HIV transmission is occurring among the country's estimated 200,000-300,000 injecting drug users, about 1 per cent of whom are believed to be living with HIV. High-risk behaviour is widespread in this largely male population; about half of the users share injecting equipment, and as many are believed to have extramarital sexual relations. According to some estimates, a significant percentage (more than 30 per cent) of them is married. Yet condom use is very rare. In addition, about 10 per cent of prisoners are believed to inject drugs and more than 95 per cent of them share needles. HIV prevalence among imprisoned drug injectors was 12 per cent in 2001.

Developed countries

Most high-income countries are also contending with concentrated HIV epidemics, including in the United States, where injecting drug use is a prominent route of HIV infection (accounting for 14 per cent of all reported HIV diagnoses). Reported HIV prevalence among injecting drug users in Spain in 2000 was 20-30 per cent. In France, prevalence rates ranged between 10 per cent and 23 per cent. Portugal's serious epidemic among injecting drug users accounted for more than half of the newly diagnosed HIV infections in both 2000 and 2001, though the number of reported HIV infections among injecting drug users declined significantly in 2001.

Sub-Saharan Africa

Injecting drug use is a global phenomenon including, most recently, in Africa, which is also, increasingly being used for the trafficking of heroin and cocaine. According to the 2001 UN Office on Drugs and Crime (UNODC) World Drug Report, the opiate use prevalence in Nigeria was 0.3 per cent. The joint study between the World Health Organization (WHO), the ministry of health and the University of Ilorin on drug abuse concluded that injecting drug use with associated health consequences was an emerging problem in Lagos, Nigeria.

The knowledge base of the drug abusers on HIV was generally low; treatment and rehabilitation services were few and non-affordable. HIV prevalence rate among the total sample of drug users was higher than in the general population (9.8 per cent versus 5.4 per cent). There was no significant difference between the HIV rates obtained for non-injectors and ever-injectors, however, female users were significantly more likely to be HIV-positive compared with their male counterparts, regardless of their injecting status. [17]

Injecting drug use has already been described as a major problem in Mauritius. Reports indicate increasing numbers of IDUs in Kenya.[18] And there is strong anecdotal evidence from Tanzania of an evolving drug problem.[19]

Section 1.2
Increases in injecting drug use

Coinciding in part with pressure on countries to submit to international restrictions on drug use, illegal drugs are increasingly administered through injection, especially in regions where poverty, homelessness, migration and other socio-economic problems are common. Several factors may be important, including local drug production and transit, and unintended consequences of enforcement activity and drug user migration. Such factors are in turn related to global drug markets, income inequalities between nations, trade and cultural links, urbanization, social dislocation, modernization and internal political conditions.

Other reasons for the spread and increasing popularity of injecting are complex:

- Injecting offers the most cost-effective way of using a drug – a smaller quantity of a given drug is needed to achieve the same effect provided by another mode of administration.

- Injecting a drug is a faster route than other methods for achieving a high.
- Drugs and injecting paraphernalia may be easier to conceal than other methods of taking drugs.
- Injecting is often described as the 'normal' was of taking a given drug.
- Injecting is the only way of using some preparations and there may not be a choice of preparations on the market.
- There is a greater availability of a drug which can be injected.
- Peer pressure to use drugs may occur as the drug-taking rituals can create a sense of social inclusion.
- There is a custom of injection for self medication.
- There is an influence of migratory drug users.
- There is increasing involvement in cultivation and manufacturing drugs.
- People live in proximity to drug trafficking routes.

Efforts to discourage injecting and to avoid the associated health and social costs are hampered by social, structural, economic and political factors. These include:

- over investment in supply reduction rather than demand and harm reduction;
- tough law enforcement against drug users;
- benefits to producer and transit countries from continued production and distribution;
- populations with low levels of education;
- lack of access to media;
- poor transport and communications;
- competing health and social priorities;
- lack of medical and public health resources;
- lack of resources for treatment and harm reduction;
- marginalization and repression of drug users;
- national 'immunity' myths; and
- antipathy towards public health approaches to help IDUs and social costs of drug use.

Thomas Morley/Exile Images

Section 1.3

Sharing needles and syringes

The extent of HIV epidemics among IDUs and the speed with which a given epidemic spreads within IDU communities, and thereafter into the general population, depends on the degree of social mixing in the population. This includes the number of different people shared with, the degree to which IDUs move between social networks, and how large these sharing networks are.

Given the wrong conditions, the transmission of HIV among IDUs can be rapid, with up to 40-90 per cent of all IDUs in a given community infected in a matter of months. This has happened in places as geographically and culturally remote as New York, Milan, Edinburgh, Bangkok, Santos, Odessa, Ho Chi Minh City, Yunnan Province in China and Manipur State in India.[20]

17 *World Drug Report,* UNODC, 2001, in *Assistance to country responses on HIV/AIDS associated with injecting drug use by the UN and other agencies*, Report for the Interagency Task Team on injecting drug use, 2003.

18 The prevalence rate of opiate abuse in Kenya is 0.1 per cent, *World Drug Report*, UNODC, 2001, in *Assistance to country responses on HIV/AIDS associated with injecting drug use by the UN and other agencies*, Report for the Interagency Task Team on injecting drug use, 2003.

19 *Assistance to country responses on HIV/AIDS associated with injecting drug use by the UN and other agencies*, Report for the Interagency Task Team on injecting drug use, 2003.

20 Rhodes T, Stimson GV, Crofts N, Ball A, Dehne K and Khodakevich. L, *Drug injecting, rapid HIV spread, and the 'risk environment': implications for assessment and response,* 13 (suppl A), AIDS 1999; Ball AL, Rana S and Dehne KL., *HIV prevention among injecting drug users: Responses in developing and transitional countries,* 113, sup1:170-181, Public Health Reports, 1998; Stimson G, Des Jarlais DC and Ball A (Eds), *Drug Injecting and HIV Infection: Global Dimensions and Local Responses,* London UCL Press, 1998.

Some of the reasons for sharing needles and injecting paraphernalia include:

- lack of information about associated risks of injection and about safe injection;
- sharing behaviour as a form of bonding or as a culturally or socially accepted practice;
- intoxication during injection;
- lack of injecting skills, particularly during the initiation period;
- fear of procuring or carrying injecting equipment because it is illegal or because of police harassment;
- difficulty in accessing new injecting equipment because of prohibition, physical isolation or limited hours in which to procure it; and
- lack of money to buy injecting equipment.

After more than two decades of experience in HIV transmission among IDUs, there are a number of epidemiological, geographical and social factors that are known to contribute to the rapid spread of HIV among injectors. These include:

- the presence of HIV in the population;
- a recent and rapid spread of injecting drug use;
- proximity to drug supply routes;
- widespread unemployment and economic dislocation;
- social change;
- regular sharing of injecting equipment among members of social networks;
- high levels of mixing between social networks of injectors; and
- sale and distribution of drugs in syringes.

The dual problems of injecting drug use and HIV transmission ultimately affect all members of society. In countries with injecting drug use related HIV epidemics, HIV infection rates amongst IDUs, who have shared injecting equipment or had unprotected penetrative sexual intercourse, have risen and continue to rise sharply. In fact, in some parts of the world, injecting drug use has kick started the HIV epidemic. This was the case in Thailand, where during the first nine months of 1988, HIV prevalence rates among IDUs in Bangkok rose from around zero to almost 40 per cent. Before that, there were few people known to have HIV in Thailand. Afterwards HIV prevalence rates increased dramatically, mainly through sex.[21]

This means that countries with little HIV infection but with IDUs can go from few people infected to many thousands in a short space of time, forming an epicentre for further spread of HIV. IDUs who are sexually active may transmit HIV to their sexual partners and their children. This situation is compounded by the involvement of many IDUs in commercial sex work, often to support their drug use. It is also compounded in prisons which mix many different IDU populations, and are also a setting in which drug use and injecting drug use is frequently initiated. Experience has shown, without effective immediate harm reduction programmes, IDU-based HIV epidemics can rapidly become self-sustaining generalized HIV/AIDS epidemics.

Section 1.4

The most affected populations

In general, injecting drug use is associated with pre-existing socio-economic deprivation. Due to the amount of resources necessary to provide drugs, most injecting drug users live in poverty. Many IDUs come from low-income households. When HIV infection leads to illness, this brings reduced income from the person with HIV and often further economic and social costs associated with families caring for their relatives. This in turn leads to further poverty and increased likelihood of other family members engaging in risky HIV behaviours.

In addition, there are some populations particularly susceptible to injecting drug use and HIV infection. Female IDUs are at a higher risk of HIV infection mainly due to drug mixing or commercial sex work [22], while injecting drug use is a severe problem among street youth.[23] Migrants, because of their proximity to drug cultivation or trafficking routes, or because of their general situation, are often over represented in drug use.[24] Existing data also indicate that indigenous people are often over represented in groups most vulnerable to HIV, such as sex- workers and prisoners. In particular, indigenous people are over represented among inner city IDU communities, including among clientele using needle exchange programmes and counselling or referral sites.[25]

Injection drug use is also a problem among prisoners (a population whose welfare is specifically within the mandate of the Movement and an area in which the Red Cross and Red Crescent has a comparative advantage). Once in prison, many IDUs continue injecting and prisons are also a setting where many people have their first experience of using or injecting drugs.[26] Sex, forced or consensual, is common in prison and is generally unprotected. Another often forgotten aspect of prison life is the past time of tattooing using needles.

In many countries, current prison practices effectively promote the transmission of HIV and tuberculosis (TB) infections within prisons and thereafter into the general community upon prisoner release. Few countries have implemented harm reduction measures in prisons. The main reasons given are that sex and drug use is illegal and that needles and condoms may be used as weapons.

Europe leading the way on needle and syringe exchange programmes in prisons

Needle and syringe exchange programmes are still rare but on the increase. Since the first prison-based syringe exchange programme was set up at the Oberschöngrun prison for men in Switzerland in 1992, studies of similar programmes have confirmed their effectiveness.

Needle sharing has declined dramatically, there have been no reported cases of inmates acquiring HIV, HBV or HCV in any of the programmes, and no serious unintended consequences were encountered. By 2001, sterile needles were being distributed in seven Swiss prisons.[27]

German and Spanish authorities have also successfully introduced needle exchange schemes in several prisons. HIV prevalence among Spanish prisoners has declined from 23 per cent in 1996 to 17 per cent in 2001, due largely to innovative programmes for heroin users (methadone programmes). Nine of the country's prisons have begun introducing needle and syringe exchange programmes complemented by education, counselling and condom distribution.[28]

21 Drug Use and HIV/AIDS, UNAIDS statement presented at the United Nations General Assembly Special Session on Drugs, 9 June 1999.

22 Spittal PM, Craib KJ, Wood E, Laliberte N, Li K, Tyndall MW, O'Shaughnessy MV, Schechter MT, *Risk factors for elevated HIV incidence rates among female injecting drug users in Vancouver,* British Columbia Centre for Excellence in HIV/AIDS, St. Paul's Hospital, Vancouver, 166(7) pp. 894-9, CMAJ, 2 April 2002. Barnard M, Risky Business, 43 The International Journal of Drug Policy, 1993. *HIV/AIDS Among Injecting Drug Users in Canada,* Health Canada, April 2003.

23 For example, one study found that one-third of a sample of Montréal street youth had injected drugs in the previous six months. Among those who were regular injectors, 47 percent had shared needles in this time frame Risk Behaviours Among Injection Drug Users in Canada, supra, note 1 at 3, with reference to E Roy, N Haley, J Boivin et al. *Injection Drug Use among Street Youth: A Dynamic Process.* Paper presented at the 6th Annual Conference on HIV/AIDS Research, Ottawa, May 1997. Canadian Journal of Infectious Diseases 1997; 8 (Suppl A): 29A (abstract 225).

24 Stimson GV, Adelekan M, Rhodes T, *The Diffusion of Drug Injecting in Developing Countries,* The Centre for Research on Drugs and Health Behaviour, University of London. This article is based on a presentation at the Sixth International Conference on the Reduction of Drug Related Harm, Florence, Italy, 1995. http://www.drugtext.org/library/articles/96745.htm.

25 Stimson GV, Adelekan M, Rhodes T, *The Diffusion of Drug Injecting in Developing Countries,* The Centre for Research on Drugs and Health Behaviour, University of London. This article is based on a presentation at the Sixth International Conference on the Reduction of Drug Related Harm, Florence, Italy, 1995 http://www.drugtext.org/library/articles/96745.htm.

26 For example, in a federal prison in British Columbia, 67 percent of inmates responding to one survey reported injection drug use either in prison or outside, with 17 percent reporting drug use only in prison. T Nichol. Bleach Pilot Project. *Second unpublished account of the introduction of bleach at Matsqui Institution,* dated 28 March 1996. On file with Legal Network. In the 1995 inmate survey conducted by the Correctional Service of Canada, 11 percent of 4285 federal inmates self-reported having injected since arriving in their current institution. Correctional Service of Canada. 1995 *National Inmate Survey: Final Report.* Ottawa: The Service (Correctional Research and Development), No SR-02 at 138, 1996.

27 *Report on the Global HIV/AIDS Epidemic,* p 98, UNAIDS, July 2002.

28 *Report on the Global HIV/AIDS Epidemic,* p 98, UNAIDS, July 2002.

Generally, refugees and people involved in conflict situations are at an increased risk of HIV/AIDS. In the turmoil that leads people to become refugees, health-care information and related services for HIV prevention usually do not exist. However, injecting drugs by IDUs before an emergency is likely to continue. Given the circumstances, if drugs are available, this is likely to increase. Unfortunately, injecting drug use in emergency settings is little understood.

Section 1.5

Effective responses

Emerging evidence with regard to successful approaches has demonstrated that HIV transmission among IDUs can be prevented. There are three complementary strategies:

- Decrease the social marginalization and the subsequent vulnerability of IDUs.
- Increase the access of IDUs to health and social care, including drug education, comprehensive package of interventions for HIV prevention and treatment services.
- Promote a non-repressive approach to IDUs based on human rights and public health principles. [29]

Latvain Red Cross

In spite of existing proven strategies for curbing the transmission of HIV related to injecting drug use, most countries to date have failed to introduce comprehensive harm reduction programmes. Since the first needle exchange programme (NEP) was introduced in Amsterdam in 1984, at least 46 regions, countries, and territories reported having at least one NEP by December 2000. However, only one-third of countries where HIV has been reported among IDUs, and only 40 per cent of countries where injecting drug use is known to occur, have introduced at least one NEP. [30] Furthermore, there are also no cases globally of transmission of HIV or hepatitis as a result of a needle-stick injury from an inappropriately discarded needle and syringe. [31]

The failure to introduce effective HIV prevention measures such as comprehensive harm reduction programmes for IDUs costs lives. For example, it is estimated that for each year without increased access to sterile syringes for IDUs, as many as 12,350 persons in the United States are becoming infected with HIV. [32]

Some of the reasons for the lack of an effective response include:

- marginalization and stigmatization and discrimination against injecting drug users;
- antipathy towards public health approaches to reducing the individual and social costs of drug use;
- lack of political will to develop the necessary policy dialogue and programmatic response;
- drug use viewed as a criminal rather than a public health issue;
- failure to recognize injecting drug use as a factor in the HIV epidemic;
- denial of international evidence on effective responses;
- failure to address the legal, ethical and human rights issues concerning IDUs;

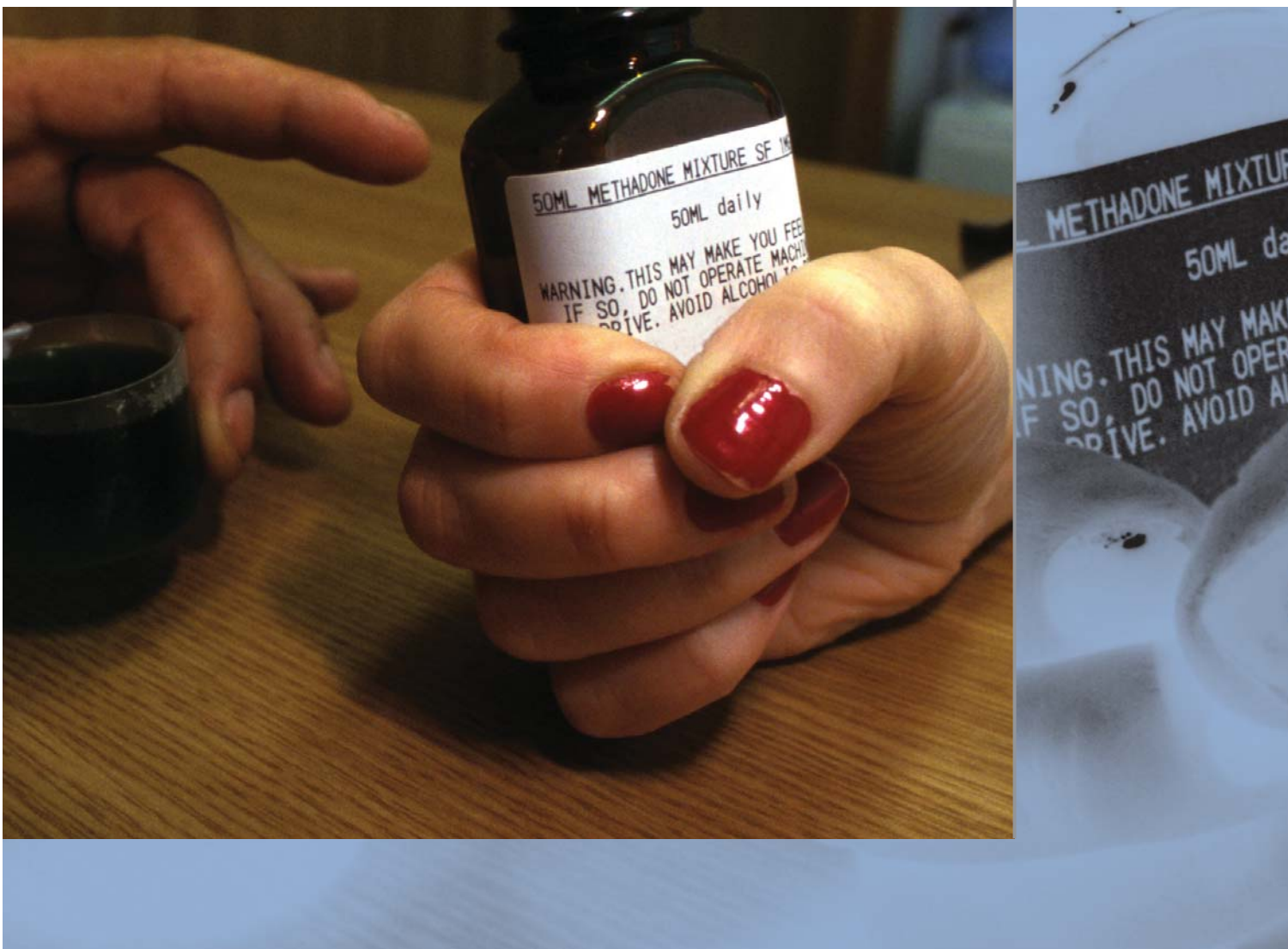
29 *Preventing the Transmission of HIV among Drug Abusers,* position paper of the United Nations System, 2000.
30 Steffanie A. Strathdee and David Vlahov *The effectiveness of needle exchange programs: A review of the science and policy,* Vol. 1, No. 16, AIDScience, December 2001.
31 Dolan, K., Topp, L. and MacDonald, M., NSP: *needle and syringe programs: a review of the evidence.* In NSP: Needle and Syringe Programs [Information kit], Canberra: Australian National Council on AIDS, Hepatitis C and Related Diseases, p. 18, 2000.
32 Holtgrave, David R., Pinkerton, Steven D., Jones, T. Stephen, Lurie, Peter., and Vlahov, David., 1998, *Cost and cost-effectiveness of increasing access to sterile syringes and needles as an HIV prevention intervention in the United States,* Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology, 18 (supplement), pp. S133-S138.
33 Steffanie A. Strathdee and David Vlahov *The effectiveness of needle exchange programs: A review of the science and policy,* Vol. 1, No. 16, AIDScience, December 2001. Strathdee, S. A. et al., *Needle exchange is not enough: Lessons from the Vancouver injecting drug use study.* 11, F59-F65, AIDS, 1997.
34 Tyndall MW, Currie S, Spittal P, Li K, Wood E, O'Shaughnessy MV, Schechter MT, *Intensive injection cocaine use as the primary risk factor in the Vancouver HIV-1 epidemic,* British Columbia Centre for Excellence in HIV/AIDS, St. Paul's Hospital, Vancouver, Canada, 17(6):911-3, AIDS, 11 April 2003.

- lack of easily accessible, quality treatment service;
- insufficient understanding of the impact of HIV on society;
- poor networking and integration between sectors and agencies responsible for drug control and HIV prevention; and
- limited skills, resources (both human and financial) and experience in understanding and responding to IDUs and HIV.

To be effective, harm reduction programmes must fit local conditions. For example, research in Canada has shown that cocaine injectors tend to inject much more frequently than heroin injectors, and therefore require much greater quantities of needles and syringes than usually provided by needle-syringe programmes.[33] In addition, the time to HIV infection was accelerated among regular cocaine injectors independent of concurrent heroin use. Injecting cocaine use was a strong, dose-dependent predictor of HIV seroconversion in this poly-drug using population. Injecting cocaine users remain particularly vulnerable to HIV infection and while treatment options for cocaine dependency remain woefully inadequate.[34]

Harm reduction programmes that only reach a minority of injecting drug users may yield benefits for those participating but are unlikely to significantly influence the course of the HIV epidemic in a country. For example, Nepal introduced needle exchange programmes in 1991. By 1995, some researchers were claiming that the interventions had averted an HIV epidemic among injecting drug users. But by 1997, almost half the users tested in Kathmandu were infected with HIV. The needle exchange programme was too limited and too localized to have a powerful, lasting impact. Appropriate coverage of all injecting drug users is an important target for national HIV/AIDS programming. To be effective, it needs to include IDUs involved in sex work, living in prisons, from ethnic minorities, migrants and refugees.

Andrew MacColl/Federation



Chapter 2
Rationale for harm reduction

Section 2.1
Harm reduction

In public health harm reduction is used to describe a concept aimed at preventing or reducing negative health consequences associated with certain behaviours. In relation to HIV and injecting drug use, harm reduction aims at preventing the transmission of HIV and other infections that occur through sharing of non-sterile injecting equipment and drug preparations.[35/36] Harm reduction takes a morally neutral stance to drug use, neither condoning nor opposing drug use. It focuses on actual harm and assumes that some people will continue to use injecting drugs despite government repression and therefore they should be given the possibility to do so in an in a way that reduces the risks and causes least harm to themselves and others.

While many governments, organizations and individuals would like to see drug free societies, the role of harm reduction is not to work directly towards this. If individuals who inject drugs go into rehabilitation programmes as a result of contacts made through harm reduction programmes, this is a welcome spin off effect but it is not an aim of harm reduction strategies. Demand reduction is a separate strategy which seeks to reduce the use of drugs. Harm reduction acknowledges drug use without condoning it, and seeks to minimize the harm to the individual and by correlation to the society as a whole.

A hierarchy of objectives for harm reduction has been put forward:

- Enter into drug dependence treatment. Those offering long-term medications such as methadone maintenance are more effective.
- If drug dependence treatment is not an option switch from injecting to non-injecting drug use.
- If injecting continues always use sterile injecting equipment and do not share equipment or drug solutions.
- If it is not possible to use sterile injecting equipment clean and reuse your own equipment and do not share it.
- If sharing does occur, clean injecting equipment between each use (using bleach, for example).
- Do not share 'cookers', drug containers or filters used for injecting, and do not use or share water for rinsing or mixing.
- Avoid unprotected sex. Always use condoms.[37]

Harm reduction can consist of various measures including:

- needle and syringe exchange programmes;
- the provision of condoms;
- medical treatment using opiate substitutes;
- psycho-social counselling; and
- strategies for reaching out to the most vulnerable populations and those with no access to health care systems.

35 Injecting Drug Use and HIV/AIDS: World AIDS Campaign, UNAIDS, 2001.
36 Harm reduction encompasses a wide range of drug user services including needle and syringe exchange, injecting drug rooms, drug substitution, health education, medical referral and support services.
37 Pecheny, Mario, *Argentina: Discrimination and AIDS Prevention,* in Peddro: Drug Abuse and AIDS – stemming the epidemic, UNESCO, European Commission and UNAIDS, Special Issue, December 2001.

HIV education; voluntary and confidential testing for HIV infection; and adequate pre- and post-test counselling and treatment for HIV infection, including ARV treatments, should all be considered as other interventions which can mitigate the impact of HIV/AIDS on individuals and communities. The creation of safe injecting environments with medical backup as well as the decriminalization of drug use are both strategies that have been successfully introduced to minimize drug related harm.


Italian Red Cross

In many countries injecting drug users are marginalized, stigmatized and discriminated members of the society. Many states have taken punitive measures against IDUs with the objective of preventing illegal drug use, but with little success. International conventions, declarations and humanitarian principles obligate states to respect, protect and fulfil, equitably and in a non-discriminatory manner, IDUs' human rights, which includes comprehensive harm reduction programmes as well as providing treatment, care and support, including anti-retroviral therapy for HIV-positive IDUs, if medically recommended.

In addition, public health imperatives support the introduction of comprehensive harm reduction programmes as a proven way to protect public and individual health. Furthermore, scientific evidence shows that harm reduction strategies including needle and syringe exchange are cost-effective measure to prevent and control HIV transmission, do not lead to higher rates of drug use and protect the individual's right to health.

Section 2.2

Humanitarian rationale

2.2.1 Humanitarian action, National Societies and injecting drug users

Most IDUs are at a high risk of contracting HIV/AIDS, HBV, HCV and other infections. They often suffer stigma and discrimination and face high levels of incarceration. IDUs are vulnerable groups that require Red Cross and Red Crescent support. Too often, the issues of drug use, HIV transmission and harm reduction methods are entangled in political, religious and moral debates to the detriment of prevention and care efforts.

The Red Cross and Red Crescent, as the largest and oldest humanitarian organization established with the objectives of preventing and alleviating human suffering without judgement wherever it may be found, can take an active role in education. It can ensure a clear understanding of the scale of the HIV/AIDS epidemic, and advocate for appropriate and effective prevention, treatment, care and support measures. Of the seven Fundamental Principles of the International Red Cross and Red Crescent Movement, three – humanity, impartiality and neutrality – are particularly important for prevention and for rendering treatment, care and support to IDUs.

At the Governing Board meeting held in November 2002, The International Federation adopted a new HIV/AIDS Policy, which states

"guided by sound public health and humanitarian principles, promote and where appropriate facilitate harm reduction strategies for high risk behaviours and traditional practices, including advocacy for law reform as necessary."

In April 2002, the European National Societies Conference in Berlin unanimously supported implementing harm reduction strategies, marking a major step forward to addressing the rapid increase in infection in the region. Similarly, the Manila Action Plan, adopted at the Manila Conference in December 2002, requires all National Societies in the Asia, Pacific and Middle East regions to develop culturally appropriate harm reduction programmes.

Several National Red Cross and Red Crescent Societies have already initiated harm reduction strategies in collaboration with governments or other organizations. The Australian, Croatian, Italian, Portuguese, Russian and Spanish National Societies are demonstrating workable programmes. The Vietnamese and Chinese Red Cross Societies also have initiatives underway. Many National Red Cross and Red Crescent Societies have capacities and networks which can be utilized to support IDUs and advocate for the acceptance, introduction and maintenance of harm reduction programmes.

2.2.2 Humanitarian action, National Societies and injecting drug users in prisons

According to the fundamental principle of humanity, the Red Cross and Red Crescent "endeavours, in its international and national capacity, to prevent and alleviate human suffering wherever it may be found". Its purpose is to protect life and health and to ensure respect for the human being.

Marko Kokic/Federation

The role of National Societies has grown from serving as auxiliaries to an army's medical services in times of war, to include welfare activities[38] developed in favour of families and children, the elderly, sick people and people with disabilities (mental, physical and social disadvantaged) in times of peace. The last of these groups includes detainees.

In its efforts to implement the principle of humanity, the Red Cross and Red Crescent pays particular attention to the most vulnerable people. The Red Cross and Red Crescent philosophy and doctrine and its fundamental principles provide basic guidelines for the social welfare work of National Societies in favour of prisoners and their families. The reasons for National Society activity in prisons are individual assistance to the prisoners as human beings; help and assistance to their families; and to assist as much as possible during the period of separation from normal conditions of life.

National Societies are auxiliaries to the public authorities and must maintain their independence, impartiality (non-discrimination) and autonomy in relation to states, and must be neutral and impartial. That is they must be non-discriminatory as to nationality, race, religious beliefs, class or political opinion; and proportional in the manner in which assistance to prisoners is distributed.

National Societies cannot take the place of the state, which has the task of providing assistance to underprivileged individuals since they are the only entity with the necessary authority and sufficient resources to cope with an undertaking of this magnitude.

The provision of health services is the most common activity of National Societies work in prisons. Some National Societies provide care, medicine and other services to sick persons. A few National Societies are providing assistance to drug dependants. Some organize courses such as first-aid training or seminars on HIV/AIDS for health personal and/or prisoners. Some National Societies also provide medical care to family members of prisoners, cover medical costs or conduct campaigns against particular diseases.

There is ample scope for National Societies to build on existing activities in prisons to provide HIV/AIDS related services. National Societies can advocate with governments, prison services and wardens for the acceptance, introduction and maintenance of harm reduction programmes. And giving due regard to its auxiliary role, National Societies may be in the position to facilitate harm reduction measures in prisons.

At the request of National Societies or on its own initiative, the International Federation secretariat can contribute to the activities of National Societies by providing guidance in social welfare, including health service provision and harm reduction measures for IDUs in prisons. The International Federation can also provide information on the activities of the National Societies and promote cooperation and exchange of experience. National Societies requiring background information on mandates for work in prisons are referred to the publication *Activities of National Red Cross and Red Crescent Societies in Prisons* (International Federation and Henry Dunant Institute, 1994).[39]


Thomas Morley/Exile Images

Section 2.3

Public health rationale

The sharing of needle and syringes and other drug injecting equipment is the most important factor fuelling the HIV epidemic among drug users. Drug control laws and policies should aim to reduce, not increase, the HIV risk faced by injecting drug users. Popular strategies of suppression or elimination have not contained the fast growth of HIV epidemics. Experience has shown that HIV epidemics among IDUs can be halted, or if IDUs are appropriately supported through a comprehensive harm reduction approach at an early stage, epidemics can be minimized or avoided.

A global review of needle and syringe exchange programmes implemented between 1993 and 1998 in 29 cities has shown that the HIV prevalence rate among IDUs decreased by an average of 58 per cent per year while the number of users did not increase. By contrast, in 52 cities, where similar harm reduction programmes did not exist, the HIV prevalence rate increased by almost 6 per cent annually.[40]

Effective public health interventions to limit the transmission of HIV are required for several reasons:

- Currently, it is estimated that there are more than 10 million people globally who inject drugs. Of these, 2-3 million people are estimated to be HIV-positive.
- The number of countries reporting injecting drug use has increased from 80 in 1992 to 138 in 1998 with 114 countries reporting HIV infection among the IDU population.

38 Social welfare, material assistance, health services, organization and arrangements relating to work in and outside prisons, training, education, entertainment, leisure, sport, special care for young prisoners and children of prisoners, facilitation of contacts by foreign prisoners with their country and families, intervention in favour of nationals imprisoned abroad, development of alternative measures to imprisonment and social rehabilitation and reintegration.

39 To order, e-mail guidera@ifrc.org.

40 UNAIDS.

- The reuse of contaminated needles and syringes by different people as well as the communal use of equipment for injecting preparation are common practices among IDUs.
- HIV and other blood borne infections are efficiently transmitted by sharing injecting equipment.
- HIV can rapidly spread through drug using populations and can stabilize at high prevalence rates. Studies indicate that in the absence of preventive measures the prevalence rate can rise up to 40 per cent or more within 1-2 years of introduction of HIV into a community.
- Transmission of HIV also occurs through sexual contact both between IDUs and with other sexual partners, including through sex work, facilitating the transmission of HIV to their children and into the general community.

Section 2.4

Human rights rationale

2.4.1 Human rights, health and injecting drug users

The right to health is enshrined in international human rights law, even if these rights do not appear under the explicit title of 'the right to health'. Although subject to progressive realization and resource constraints, this right imposes certain obligations. These immediate obligations include the guarantees of non-discrimination and equal treatment, as well as the obligation to take deliberate, concrete and targeted steps towards the full realization of the right of everyone to the enjoyment of the highest attainable standard of physical and mental health. This might include the preparation of a national public health strategy and plan of action. Progressive realization means that states have a specific and continuing obligation to move as expeditiously and effectively as possible towards the full realization of the right.

The preamble of the Constitution of the World Health Organization states,

> "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition. The health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and States. The achievement of any State in the promotion and protection of health is of value to all… Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures."[41/42]

The right of everyone to the enjoyment of the highest attainable standard of physical and mental health, is reflected in Article 25(1) of the 1948 Universal Declaration of Human Rights;[43] Article 12 of the 1966 International Covenant on Economic, Social and Cultural Rights;[44] Article 24 of the 1989 Convention on the Rights of the Child;[45] and Article 12 of the 1981 Convention on the Elimination of All Forms of Discrimination against Women[46].

The right to non-discrimination is enshrined in Article 5(e)(iv) of the 1965 International Convention on the Elimination of All Forms of Racial Discrimination.[47] The guarantees of non-discrimination and equal treatment in the fulfilment of human rights means that everyone has the right to the enjoyment of the highest attainable standard of physical and mental health. This by definition applies to people who inject drugs, including HIV-positive IDUs.

The interpretation of existing human rights treaties confirms this. The resolutions passed by the UN Commission on Human Rights in 1999, 2001 and 2003, invited UN bodies, international organi-

zations and NGOs to take all necessary steps to ensure the respect, protection and fulfilment of HIV-related rights.[48]

In May 2000, the UN Committee on Economic, Social and Cultural Rights adopted a general comment on the right to health which proscribes,

> any discrimination in access to health care and the underlying determinants of health, as well as to means and entitlements for their procurement, on the grounds of race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth, physical or mental disability, health status (including HIV/AIDS), sexual orientation, civil, political, social or other status, which has the intention or effect of nullifying or impairing the equal enjoyment or exercise of the right to health.[49]

In the Declaration of Commitment, unanimously accepted at the 26th UN General Assembly Special Session on HIV/AIDS, 2001, states made specific commitments relevant to IDUs.

> By 2005, ensure that a wide range of prevention programmes which take account of local circumstances, ethics and cultural values, is available in all countries, particularly the most affected countries, including...expanded access to essential commodities, including male and female condoms and sterile injecting equipment. [50]
>
> By 2003...to promote and protect the health of those identifiable groups which currently have high or increasing rates of HIV infection or which public health information indicates are at greatest risk of and most vulnerable to new infection as indicated by such factors as the local history of the epidemic, poverty, sexual practices, drug-using behaviour, livelihood, institutional location, disrupted social structures and population movements, forced or otherwise. [51]
>
> By 2003, all States will have eliminated any laws, policies and practices that discriminate against people living with HIV/AIDS and other highly vulnerable groups. [52]

41 The Constitution of the World Health Organization was adopted by the International Health Conference held in New York from 19 June to 22 July 1946, signed on 22 July 1946 by the representatives of 61 states http://www.who.int/governance/en/.

42 Governments have made commitments to ensuring progressive realization of the Human Right to Health at nearly every major Conference during the past decades including:
- Ottawa Charter for Health Promotion, First International Conference on Health Promotion, Ottawa, 21 November 1986 - WHO/HPR/HEP/95.1 http://www.who.int/hpr/NPH/docs/ottawa_charter_hp.pdf
- Cairo Programme of Action, Principle 8 and para. 8.6, International Conference on Population and Development, Cairo, 5-13 September 1994. http://www.iisd.ca/linkages/Cairo/program/p00000.html
- Habitat Agenda, paras. 36 and 128, United Nations Conference on Human Settlements (Habitat II), Istanbul, Turkey, 3 - 14 June 1996. http://www.unhabitat.org/unchs/english/hagenda/ist-dec.htm
- Copenhagen Declaration, Commitment 6, World Summit for Social Development, Copenhagen, Denmark 14-15 October 1999. http://www.un.org/esa/socdev/wssd/agreements/

During its session in May 1998, the World Health Assembly endorsed the new World Health Declaration and the new global health policy Health for All in the 21st Century. Health for All in the 21st Century guides action and policy for health at all levels and identifies global priorities and targets for the first two decades of the 21st century. Key values such as human rights, equity, ethics and gender sensitivity should underpin and be incorporated in all aspects of health policy. A key feature is the strengthening of the participation of people and communities in decision- making and actions for health.
Important global "health for all" targets by 2020 include: "... the worldwide burden of disease will be substantially decreased. This will be achieved by implementation of sound disease-control programmes aimed at reversing the current trend of increased incidence and disability caused by tuberculosis, HIV/AIDS, ...all countries will have introduced, and be actively managing and monitoring, strategies that strengthen health-enhancing lifestyles and weaken health-damaging ones, through a combination of regulatory, economic, educational, organizational and community-based programmes".

43 Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.

44 The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.

45 States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services.

46 States Parties shall take all appropriate measures to eliminate discrimination against women in the field of health care in order to ensure, on a basis of equality of men and women, access to health care services, including those related to family planning.

47 In compliance with the fundamental obligations laid down in article 2 of this Convention, States Parties undertake to prohibit and to eliminate racial discrimination in all its forms and to guarantee the right of everyone, without distinction as to race, colour, or national or ethnic origin, to equality before the law, notably in the enjoyment of the following rights: Economic, social and cultural rights, in particular: The right to public health, medical care, social security and social services.

48 1999/49 of 27 April 1999; 2001/51 of 24 April 2001 and 2003/L.64 of 16 April 2003. http://www.unhchr.ch/html/menu2/2/sessions.htm.

49 General Comment 14, Paragraph 18. http://www.unhchr.ch/tbs/doc.nsf/(symbol)/E.C.12.2000.4,+CESCR+General+comment+14.En?OpenDocument.

50 UNGASS, Paragraph 52 http://www.unaids.org/UNGASS/.

51 UNGASS, Paragraph 64 http://www.unaids.org/UNGASS/.

52 UNGASS, Paragraph 58 http://www.unaids.org/UNGASS/.

The above outlines the legal basis for states to respect, protect and fulfil, equitably and in a non-discriminatory manner all IDUs' human rights. This includes comprehensive harm reduction programmes as well as providing treatment, care and support, including anti-retroviral therapy for HIV-positive IDUs, if medically recommended.

In keeping with the fundamental principles and the role of the Red Cross and Red Crescent in protecting and promoting the health of the most vulnerable populations, IDUs as a vulnerable population merit the strong and privileged voice of social conscience. The International Federation can advocate governments to fulfil IDUs' right to the enjoyment of the highest attainable standard of physical and mental health.

2.4.2 **Human rights, health and injecting drug users in prisons**

As with all HIV infection of IDUs, HIV transmission between IDUs in prisons is largely preventable. Furthermore, the principal international human rights documents clearly obligate states to protect the human rights of prisoners.

Article 7 of the International Covenant on Civil and Political Rights (ICCPR) and Article 16 of the Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT) both prohibit torture and cruel, inhuman, or degrading treatment or punishment, without exception or derogation.

Furthermore, Article 10 of the ICCPR mandates that "all persons deprived of their liberty shall be treated with humanity and with respect for the inherent dignity of the human person". It also requires that the reform and social readaptation of prisoners be an essential aim of imprisonment. Finally, Articles 2 and 26 of the ICCPR contain, respectively, provisions concerning the discriminatory application of the convention and a general right to equality.

Other UN standards applicable to the treatment of prisoners include:
- United Nations Standard Minimum Rules for the Treatment of Prisoners, 1957;
- Body of Principles for the Protection of All Persons Under Any Form of Detention or Imprisonment, 1958;
- Basic Principles for the Treatment of Prisoners, 1990;
- Code of Conduct for Law Enforcement Officials, 1978; and
- Principles of Medical Ethics Relevant to the Role of Health Personnel, Particularly Physicians, in the Protection of Prisoners and Detainees against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, 1982.

With regard to juvenile prisoners applicable UN standards include:
- United Nations Standard Minimum Rules for the Administration of Juvenile Justice, 1985;
- United Nations Guidelines for the Prevention of Juvenile Delinquency, 1990; and
- United Nations Rules for the Protection of Juveniles Deprived of Their Liberty, 1990.

Also applicable is the 1990 United Nations Standard Minimum Rules for Non-custodial Measures. All these instruments are binding on governments to the extent that the norms set out in them explicate the broader standards contained in human rights treaties.[53] They clearly reaffirm the tenet that prisoners retain their fundamental human rights.

53 For texts, see http://www.unhchr.ch/html/intlinst.htm.
54 Principle 5, Basic Principles for the Treatment of Prisoners, Adopted and proclaimed by General Assembly resolution 45/111 of 14 December 1990.
55 United Nations Human Rights Committee, General Comment 21, Paragraph 3, 1992. The Human Rights Committee provides authoritative interpretations of the ICCPR though the periodic issuance of General Comments.
56 Ibid., paragraph 4; *see also Mukong v. Cameroon* (No. 458/1991) (August 10, 1994), UN Doc. CCPR/C/51/D/458/1991 (stating that minimum requirements regarding floor space, sanitary facilities, provision of food, etc., must be observed, "even if economic or budgetary considerations may make compliance with these obligations difficult").

The most recent of these documents, the Basic Principles for the Treatment of Prisoners declares,

> except for those limitations that are demonstrably necessitated by the fact of incarceration, all prisoners shall retain the human rights and fundamental freedoms set out in the Universal Declaration of Human Rights, and, where the State concerned is a party, the International Covenant on Economic, Social and Cultural Rights, and the International Covenant on Civil and Political Rights and the Optional Protocol thereto, as well as such other rights as are set out in other United Nations covenants. [54]

Endorsing this philosophy in 1992, the UN Human Rights Committee explained that states have "a positive obligation toward persons who are particularly vulnerable because of their status as persons deprived of liberty" and states,

> not only may persons deprived of their liberty not be subjected to [torture or other cruel, inhuman or degrading treatment or punishment], including medical or scientific experimentation, but neither may they be subjected to any hardship or constraint other than that resulting from the deprivation of liberty; respect for the dignity of such persons must be guaranteed under the same conditions as for that of free persons. Persons deprived of their liberty enjoy all the rights set forth in the [ICCPR], subject to the restrictions that are unavoidable in a closed environment. [55]

Significantly, the UN Human Rights Committee has also stressed that the obligation to treat persons deprived of their liberty with dignity and humanity is a fundamental and universally applicable rule, not dependent on the material resources available to the state party. [56]

One significant consequence of this framework is that the enjoyment of the highest attainable standard of health is applicable to every human being without distinction as to race, religion, political belief, and economic or social condition. Therefore it applies equally to prisoners and detained persons.

As such, the lack of HIV education; harm reduction measures and voluntary and confidential testing for HIV infection; adequate pre- and post-test counselling and treatment for HIV-infected prisoners; as well as mandatory HIV testing and segregation of HIV-positive prisoners, undermine the public health response to HIV/AIDS, are contrary to human rights and compromises the human dignity of the person.

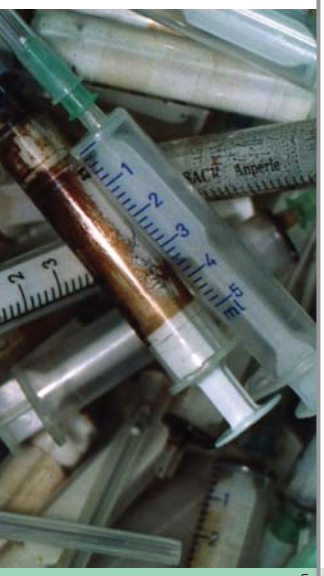
In addition, one measure of whether states are protecting the human rights of IDUs in prisons is whether they are receiving the same prevention and care measures as IDUs in the general community. For this to be a true measure, IDUs in the community must have access to comprehensive harm reduction programmes. If they are HIV-positive, they must be receiving non-discriminatory access to treatment, care and support, including anti-retroviral therapy, if medically indicated.

Section 2.5

Cost effectiveness harm reduction programmes

An expanded and sustained implementation of comprehensive harm reduction programmes is effective in the prevention and control of the spread of HIV and other blood-borne infections. The Australian National Council on Drugs (ANCD) conducted a study on harm reduction programmes implemented in the ten years from 1990-2000. According to the findings, harm reduction programmes were successful:

- An estimated 25,000 cases of HIV infection were prevented.
- An estimated 21,000 cases of HCV were prevented.
- More than 5,000 lives are estimated to be saved up to the year 2010.
- An investment of almost 150 million Australian dollars has resulted in an estimated return of 2.4-7.7 billion Australian dollars.[57]



In Svetlogorsk, Belarus, an HIV prevention programme included education about safe injecting and safe sex, and provided clean syringes and condoms. In 1997, before the programme began, 92 per cent of those surveyed said they shared syringes. By 1999, this percentage had dropped sharply to 35 per cent, while reported condom use doubled over the same period.

The programme is estimated to have prevented over 2,000 cases of HIV infection by its second year, at a cost of around US$ 68 per infection prevented; far below the cost of an AIDS case to a family or a health system. The Belarus campaign was bolstered by a change in the law, which made it legal to possess syringes and facilitated the funding and implementation of AIDS education and needle exchange among drug users.[58]

Using data from Australia as a model, the number of HIV infections that could have been prevented by a national needle exchange programme in the United States from 1987-1995 were calculated. Cost calculations were based on the US government estimate of the discounted lifetime cost of treating an HIV infection (US$ 55,640). It was calculated, conservatively, that the number of HIV infections that could have been prevented ranged from 4,394 (15 per cent incidence reduction due to needle exchanges) to 9,666 (33 per cent incidence reduction). The cost to the US health care system of treating these preventable HIV infections is between US$ 244 million and US$ 538 million, respectively.[59]

Galina Obukh/Federation

In 1995, it was estimated that an additional 5,150-11,329 preventable HIV infections could occur by the year 2000 if there was no change in the policy on needle exchange programmes.[60] Another study estimated that for each year without increased access to sterile syringes by injecting drug users, as many as 12,350 people in the United States are becoming infected with HIV, leading to estimated cost of US$ 1.3 billion in future medical costs. This study concluded that it is three times more expensive to provide medical treatment for one person ill with HIV/AIDS than it is to prevent one new HIV infection using needle exchange programmes and pharmacy sale of syringes.[61]

While governments often fear that programmes that facilitate IDUs access to clean needles and syringes might result in more injecting drug use, the evidence does not support this view. Studies in Australia, Canada, Sweden, the United Kingdom and the United States[62] have all shown that such programmes – particularly in concert with other interventions – help reduce the sharing of injecting equipment and the transmission of HIV. There was no evidence that they increased either the number of injectors or the frequency of injecting drug use.

57 Australian National Council on Drugs, *Needle and Syringe Programs*, position paper, March 2002 http://www.ancd.org.au/publications/pdf/pp_needle_syringe.pdf.

58 Kumaranayake, L; Watts C, Vickerman, P; Walker, D; Zviagin V; Samoshkin S; Romantzov V., *The cost-effectiveness of HIV preventive measures among injecting drug users in Svetlogorsk, Belarus* (draft), UNAIDS, May 2000 http://www.ahrn.net/pdf/Belarus.pdf.

59 David R. Holtgrave, Steven D. Pinkerton, T. Stephen Jones, Peter Lurie, and David Vlahov, 1998, *Cost and cost-effectiveness of increasing access to sterile syringes and needles as an HIV prevention intervention in the United States,* Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology, 18 (supplement), pp. S133-S138.

60 Lurie P and Drucker E., *An opportunity lost: HIV infections associated with lack of a national needle-exchange programme in the USA,* Center for AIDS Prevention Studies, University of California, San Francisco 94105, USA, Lancet. 1997 Mar 1; 349(9052):604-608.

61 David R. Holtgrave, Steven D. Pinkerton, T. Stephen Jones, Peter Lurie, and David Vlahov, 1998, *Cost and cost-effectiveness of increasing access to sterile syringes and needles as an HIV prevention intervention in the United States,* Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology, 18 (supplement), pp. S133-S138.

62 In April 1998, the then US Secretary of Health and Human Services, Donna E. Shalala publicly announced that the scientific evidence proved needle exchange programs were effective in preventing the spread of HIV and did not encourage the use of illegal drugs. U.S. Department of Health and Human Services, *Research shows needle exchange programs reduce HIV infections without increasing drug use,* Press release, 20 April 1998.

Chapter 3
National Society response

Section 3.1
Principles and strategy formulation

3.1.1 Guiding principles

The social nature of drug injection, the complex dynamics of sharing injecting equipment, and the interaction of drug use with high risk sexual behaviour, present considerable challenges for designing effective responses.[63] It is important to identify core principles underpinning appropriate responses.

The following are some of the major principles that National Societies intending to design harm reduction programmes should consider.

Active involvement of injecting drug users: Developing useful responses to the problems of HIV among IDUs is more likely to be effective if the views of people who inject drugs and the local community are listened to and taken into account when developing responses.

Protection of human rights: People are more vulnerable to infections when their economic, health, social and cultural rights are not respected. Respect for the rights of IDUs creates a favourable situation for addressing the complexities of injecting drug use preventing the shqring of injecting equipment.

Early intervention: HIV prevention among IDUs should start as early as possible. Once HIV is introduced into the community of IDUs the rate of transmission is fast.

Adequate coverage: It is recommended that at least 80 per cent of the target population is covered by comprehensive programming. Interventions should aim at achieving at least 60 per cent change in risk behaviours.

Base line data: The development of programmes should be based on situation assessment to have an in depth understanding of the local drug use pattern and the context. People outside IDU networks often know very little about the extent of the problem, nature of the subculture and the different determinants of the problem. Often prevailing social perceptions are not also well understood. Such information gives useful insights for addressing challenges.

Humane and compassionate response: Drug abuse problems can not be solved simply by criminal justice initiatives. Punitive action drives the people most in need of prevention and care services underground.

Concerted effort: There is a need to develop cooperation at all levels.

Working modality: There is a need for developing service outside traditional settings. Outreach work and peer education outside normal service settings, working hours and other conventional working arrangements are needed to reach IDUs.

63 National Societies requiring background information on how to design and carry out an assessment on HIV/AIDS and drug use are referred to the Aids Alliance publication Developing HIV/AIDS work with Drug Users – A Guide to Participatory Assessment and Response (August 2003). http://www.aidsalliance.org/

3.1.2 **Strategic directions**

It is useful to explain the difference between interventions and strategies. In these guidelines, interventions comprise sets of activities and inputs required to achieve the desired outputs and outcomes. Strategy is the method for implementing interventions in identified areas so as to achieve the desired impacts.

In any given society, the prevailing social, political, cultural and economic conditions dictate the selection of interventions for implementation. Strategy assists the realization of planned activities by choosing appropriate interventions, which are supported by the necessary inputs to achieve the planned outcomes to meet the set objective. Several key points need to be considered in the identification of strategies.

Availability of supportive national policy and legal basis: The strategy must be built on a legal framework that can be adapted to allow comprehensive responses.

Awareness: Low level of awareness about the problem of drug use and HIV/AIDS, and inadequate knowledge about prevention leads to marginalization and stigmatization and discrimination against IDUs. It is important to understand this when deciding on strategies.

Multi-sector approach: Strategies that encourage the establishment of broad based alliances of local administration, police, health care providers, representatives of target population and community-based organizations need to be considered.

Local responsibilities: Decision-making powers and allocation of funding are usually centralized. However, for effective impact these powers and resources must be delegated to the local level, as appropriate.

Assessment: The identification of strategies must be based on baseline information concerning IDUs and the social setting. The underlying conditions within the community, particularly the magnitude, trend and dynamics of injecting drug use and the perceptions of the general community as well as decision-making bodies must be taken into consideration in deciding on any given strategy.

Taking these considerations into account, National Societies should develop strategies which promote and where appropriate facilitate harm reduction strategies for injecting drug users including advocacy for law reform, as necessary.

Section 3.2
Programme development

As mentioned previously, the fundamental principles and mandate of the Movement obligate National Red Cross and Red Crescent Societies to take all possible measures to assist injecting drug users.

Depending upon the prevailing conditions in any given country, National Societies can become involved in programmes:

- In countries where supportive policies exist, harm reduction programmes can be developed and implemented.
- In countries where supportive policies do not exist, National Societies can advocate with stakeholders, decision-makers, community opinion leaders and the community at large for changes in laws and policies related to injecting drug use to enable public health interventions.
- In the absence of a supportive legal and policy framework, National Societies can negotiate with governments to undertake pilot harm reduction programmes.

Effective response requires concerted action in which key players are involved in the design of harm reduction programmes. In developing such programmes, it is suggested to consider the several measures.

Active involvement of injecting drug users: More than anyone else, IDUs know well the nature of the problem they face and the types of assistance relevant to them. Therefore, efforts must be made to include them in all phases of programme development. Early contacts with IDUs are useful for establishing relationships which can be broadened through IDU involvement in programme development and implementation.


Latvian red Cross

Baseline data: In many countries and communities little is known about IDUs. Information about IDUs, their social circumstances, their challenges, community perceptions and prevailing governmental laws and policies need to be compiled, analysed and used as basis for programme development – rapid situation assessment. Much of this information can be gleaned from IDUs if a relationship of trust is developed.

Community involvement: From the onset of programme development, all sectors of society, including relevant individuals, families and the general community should be involved.

Involvement of professionals: Professionals with relevant backgrounds such as social, health, law enforcement and criminal justice as well as International Organizations and NGOs should be involved from the outset.

Pragmatic intervention: To be effective, interventions must be locally oriented and focussed on the need of IDUs with provisions for periodic revision and adjustment when monitoring and evaluation of the programmes suggest that it is appropriate.

Integration: In many countries there are national drug control programmes which focus on demand and supply reduction as well as national HIV/AIDS prevention and control programmes. Harm reduction programmes should be linked to these national efforts.

Section 3.3

Areas of intervention

In the last two decades, some countries have adopted different interventions for reducing risks associated with injecting drug use. Based on the lessons learned, the following interventions have been successful in reducing individual risk behaviour and preventing infection through sharing injecting equipment:

- outreach;
- drop in centres;
- needle and syringe exchange programmes;
- provision of free, good quality condoms;
- peer education;
- primary health care provision;
- drug substitution treatment; and
- injecting drug rooms.

3.3.1 **Outreach**

In many countries, drug use is illegal and drug users are prosecuted or may be harassed. IDUs can be hard to reach and shun contact with authorities, including health services. In this situation, in order to implement harm reduction programmes, it is necessary for outreach workers to go into the IDU community and make contact in the settings where IDUs live or where they congregate such as at train or bus stations, or in particular streets or parks.

Some features of outreach programme include:

- Outreach workers establish themselves in localities where IDUs meet.
- Establish face-to-face contact with IDUs. Such interaction helps create trust and facilitates acquisition of information regarding the problems and needs of IDUs.
- Provide services such as information on HIV/AIDS, first aid services, provision of condoms, and clean needles and syringes or information on where these can be obtained.
- Network with community groups in order to help integrate IDUs in social structures.
- The people involved in outreach programmes must be given adequate training prior to moving into the IDU community.
- Consider employing people who have experience working with IDUs to undertake outreach work.

Galina Obukh/Federation

The above outreach methods are most useful for reaching the more visible IDU's, who are often particularly vulnerable. Consideration should also be given to reaching the larger number of IDU's who are everywhere (such as recreational drug users) and therefore more hidden and often more difficult to identify and reach.

Secondary distribution: Croatia

The Croatian Red Cross has 105 well-structured branches with professional staff. Three syringe exchange projects are being carried out in selected areas based on the number of IDUs. Activities started in 1998 as part of the national strategy and include the distribution of needles and syringes to IDUs, as well as the distribution of condoms and information material at needle exchange points.

One of the main activities is secondary distribution. Clients at drug exchange points are used to further distribute syringes to other IDUs. It is estimated that there are 15,000-18,000 IDUs in Croatia. About 80 per cent of these are male and they are mainly heroine users. Most HIV transmission among IDUs is through unsafe sexual contacts.

3.3.2 **Drop in centres**

The situation in many countries is such that IDUs are often shunted from one place to the next. As such many IDUs receive little or no governmental, social or family assistance. Drop in centres, sometime known as boutiques, provide a safe space where IDUs can rest, shower, wash clothes, have light refreshments and relax. For such centres to be effective, they must be non-judgemental and not pressure clients.

The services in the drop in centres can include:

- showers;
- shelter;
- provision of washing machine service;
- coffee and tea;
- food;
- first aid assistance for their health problems;
- simple and understandable educational leaflets with contact information; and
- someone to talk to.

Comprehensive harm reduction: Italy

Villa Maraini Foundation was founded in 1976. Of the 140 people working with the Foundation, 50 per cent are ex-IDUs. The foundation has an emergency unit with a help line, street unit, prison and shelter projects – both drop in and for sleeping. The mobile teams operate with the objectives of reducing overdose deaths and the transmission of HIV/AIDS and other infectious diseases as well as assisting IDUs outside of the rehabilitation centre setting. The main tasks include:

- syringe exchange at two locations in Rome;
- distribution of condoms;
- sharing information on drugs, prevention of HIV/AIDS and other infectious diseases;
- finding solutions for housing issues; and
- psychological support.

Villa Maraini

3.3.3 Needle and syringe exchange programmes

Ensuring the availability of sterile injecting equipment so that each injection can be made free of HIV contamination is a fundamental step in breaking the chain of transmission.

Needle and syringe programmes function on the bases of providing sterile needles and syringes accompanied by educational materials, the provision of condoms as well as the collection of used syringes and needles. It is important to ensure that used needles and syringes are disposed of safely.

In many countries, sharp bins or containers are placed in toilets or other localities out of the view of the general public. The inappropriate disposal of needles and syringes is often cited as a fundamental reason why communities reject needle and syringe exchange programmes.

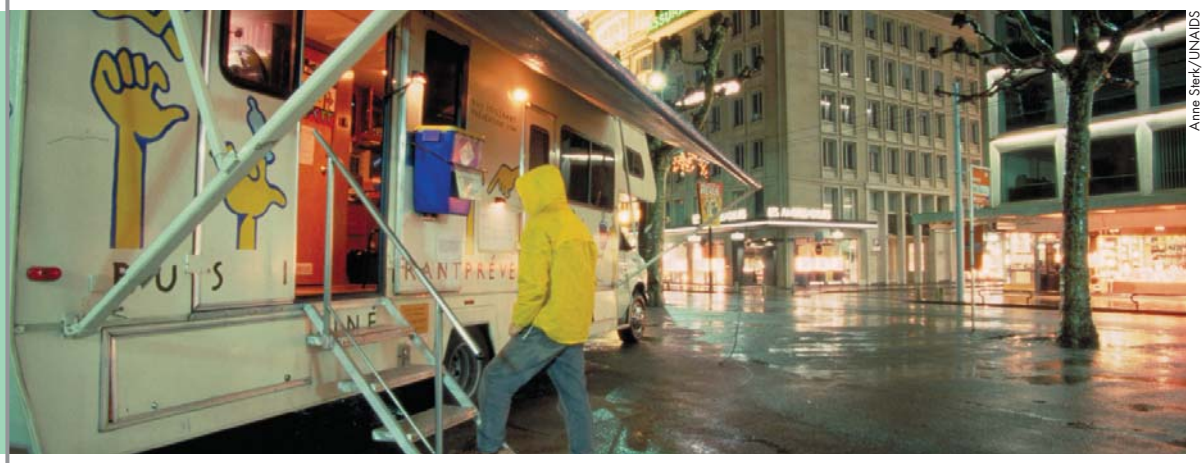
Successful ways for increasing needle and syringe availability include:

- sales of needle and syringes at minimum price through pharmacies and other outlets;
- free needle and syringe exchange programme; and
- providing appropriate means for the disposal of used needles and syringes.

Needle and syringe programme can be organized from:

- fixed, user-friendly drop in centres;
- self-help spaces;
- through outreach workers;
- through peer educators;

Andrew MacColl/Federation



Anne Sterk/UNAIDS

- mobile vans;
- dispensing machines located at places easily accessible to IDUs; and
- injecting drug rooms.

Where needle and syringe exchange programmes are not implemented because of legal or policy restrictions, such as in prisons and detention centres, then bleach can be provided to clean used needles and syringes before reuse. However, such measures are not proven to reliably stop HIV transmission and while better than nothing, must be considered as a compromise second line measure.

Taking every chance: harm reduction in Belarus

The Belarus Red Cross began harm reduction activities when the home care service was significantly curtailed, leaving a large surplus of unutilized disposable syringes. In 2002, the local authorities provided the Red Cross with the premises for a syringe exchange point. The Red Cross visited drug abuse clinics and the police to discuss the importance of introducing harm reduction programmes in light of the growing IDU-related HIV/AIDS epidemic. It also advertised its syringe exchange activities through the local press.

The Red Cross gained the trust of local IDUs and the programme has become popular. Every six weeks sees around 60 syringes distributed by the Red Cross, while the municipal health authorities were distributing the same amount of syringes during a whole year.

New for old: Latvia

Latvia has a population of 2.5 million people, 500,000 of whom live in the capital, Riga. HIV is prevalent among the country's youth. The Latvian Red Cross began syringe exchange activities in Riga in 1997 and outreach work programmes in 1999. In 2002 the syringe exchange programmes were expanded to eight municipalities and included the distribution of education material.

In 2002, about 100-300 new clients were served every month; health education information was updated regularly; and the rate of exchange of used syringes for new was close to 1:1. However, funding support for the programme has been difficult to maintain as the primary partner in Latvia changed organizational priorities.

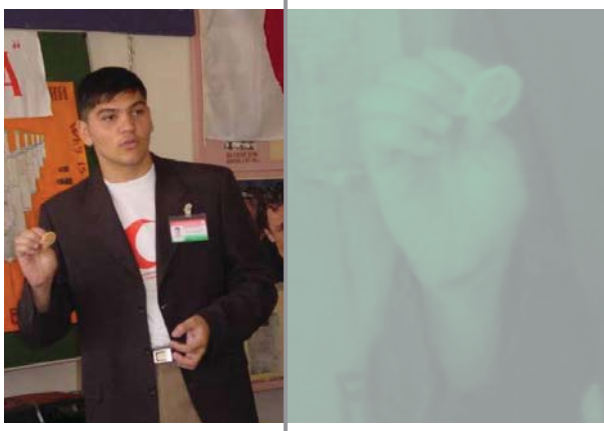
3.3.4 Provision of free, good quality condoms

Unprotected sexual contact between IDUs and with other non-drug injecting sexual partners is another route for the transmission of HIV. Commercial sex work is often linked to drug use as it is one way in which drug injecting can be financed. This creates the risk of HIV moving from the IDU community into the general population via clients. Also, in prisons, sexual contact between inmates is frequent and IDUs are disproportionately represented in prison populations.

The provision of free, good quality condoms linked with education and information is a low cost intervention which can prevent the sexual transmission of HIV. Condom distribution can be integrated into many other interventions such as self-help spaces, outreach work, drop in centres, needle and syringe exchange programmes, peer education, primary health care provision, drug substitution treatment and injecting drug rooms. They can also be provided by mobile vans and through dispensing machines located in easily accessible places.

Central Asia

The reported number of HIV/AIDS cases in central Asia is progressively increasing, mainly among IDUs, who account for 60-85 per cent of all new infections. All five National Societies in central Asia are actively involved in the distribution of high quality condoms and health information material to targeted groups in the frame of their HIV/AIDS prevention programmes. Current activities are mainly focused on youth peer education. The National Society of Kazakhstan provides a hotline telephone service and anonymous, free of charge, psychological support to different vulnerable groups.


Federation

From 2004, the National Societies of Kazakhstan and Uzbekistan plan to involve IDUs and commercial sex workers in HIV/AIDS prevention activities. Home care for PLWHA is also planned.

3.3.5 Peer education

One of many reasons why people become involved in drug use is a lack of objective information concerning the effects and risks associated with drug use. It is important to create environments where relevant, objective information can be provided to drug users and to acknowledge that some people do continue to take drugs when well informed, but are then more likely to manage the risks involved. The use of trusted peer educators is an effective, proven method of reaching people who use drugs in their own environment.

Several features of peer education are worth noting:

- Objective information can be provided to drug users and IDUs in their own environment.
- Educational activities must take place in an environment of trust, which is best created by information being provided by current drug users or IDUs, or ex-drug users or IDUs.
- In the development and design of educational materials and approaches, drug users and IDUs should be fully involved from the outset.
- Printed educational materials can be used to provide information. However, it is acknowledged that its effect on attitudes and behaviours is limited. Such materials should provide service provider contact information.

Supporting injecting drug users: China

The Chinese government has registered more than one million drug users. The actual number of drug users could be 3-8 million and is increasing, as the social and economic structures change faster than many people's ability to adjust. About one half of users inject and most share injection equipment. This drives China's HIV/AIDS epidemics. Nationally, 60 per cent of PLWHA are IDUs. HIV infection rates among IDUs in some areas, particularly remote rural areas, are running at more than 80 per cent.

Despite a 95 per cent relapse rate, government facilities that treat addiction continue to rely on 'cold turkey' detoxification, physical rehabilitation through labour and rigorous physical exercise, and psychological rehabilitation through self-criticism. Harm reduction measures, including methadone assisted detoxification and substitution therapy, are new and implemented as small scale, pilot projects.

The cultural imperative of familial responsibility, rather than individual rights, and society's zero tolerance for drug use, ensure that IDUs are highly stigmatized. IDUs who have been through the government-run rehabilitation centres often express internalized shame and stigma.

Added to the stigma of weakness and degeneracy that attaches to drug users is the stigma of having a (popularly perceived) self-inflicted and fatal illness. While many people in China are aware of AIDS, few understand the routes of transmission and means of prevention. Many people who have correct knowledge of HIV transmission often have incorrect beliefs about non-transmission, and assume that casual contact or proximity to PLWHA can transmit the virus.

Efforts to provide care and support

The Sunshine Homeland for Drug Users in Kunming, Yunnan Province, developed and supported by the Red Cross Society of China and the Australian Red Cross, incorporates peer education, home care, and job skills training to improve care and support for former drugs users and PLWHA. Thirty recovering drug users have been trained as peer educators, and in the first six months of the project have facilitated 23 workshops for 500 participants in drug treatment centres and in the community.

Australian Red Cross

Nineteen people have attended a basic computer skills course, and fourteen have been trained in first aid. Interviews with project participants and their families indicate that the project is well-regarded and is, to date, attaining the objectives of discouraging drug relapse, reducing stigma and discrimination by family and communities towards those who have used drugs, as well as improving the self esteem of project participants.

PE+ project in Yunnan and Xinjiang Provinces

PE+ is a Red Cross cooperative project. It is China's first project to support the development of PLWHA as educators and as people who have something to give to their communities. Almost all PE+ educators are former drug users. PE+ trains PLWHA to educate their neighbours, friends, and family about HIV/AIDS as well as caring for those who are infected. In contrast to other Red Cross projects, PE+ is not structured and workshop-based, but relies on PE+ educators finding spontaneous and natural opportunities to talk to others about HIV/AIDS, prevention, and care. Weddings, funerals, mah-jong and card games, tea breaks during farm work – all are used as chances for volunteers to distribute information and discuss HIV/AIDS. For more information, please send an e-mail to <ifrccn12@ifrc.org>.

Involvement is a way forward: Viet Nam

For two years, a person with a history of drug use, who is also living with HIV, was supported by the Red Cross of Viet Nam and the Australian Red Cross, to take the lead in outreach work to IDUs and PLWHA and to bolster a community of support. Involvement in this work did much to repair the self-esteem of this person who entered treatment voluntarily with support from his family.

3.3.6 **Primary health care services**

Many IDUs do not have access to basic health care services or are afraid to use them even though they may have been exposed to infections prevalent in their communities. IDUs are also susceptible to health problems related to drug injections such as multiple abscess and skin lesions.

In addition, many IDUs are without work and whatever money is available may be used for drugs. As a result many IDUs suffer from malnutrition or are unable to pay for health care. Furthermore, in terms of family background, IDUs may come from dysfunctional families or their addiction has caused their family to cut from them; so that this traditional source of support is also not available.

Primary health care (PHC) services can address health problems including HIV infection. HIV/AIDS related treatment and care aims to help drug users living with HIV/AIDS cope with the infection. Involving IDUs living with HIV in primary health care and/or anti-retroviral treatment programmes provides an opportunity for them to adopt and consolidate safe behaviours and may yield significant HIV preventive effects, and most importantly can delay the on set of AIDS. Prevention aspects apply particularly to HIV/AIDS treatment and care that is provided in the context of specific information and counselling services.

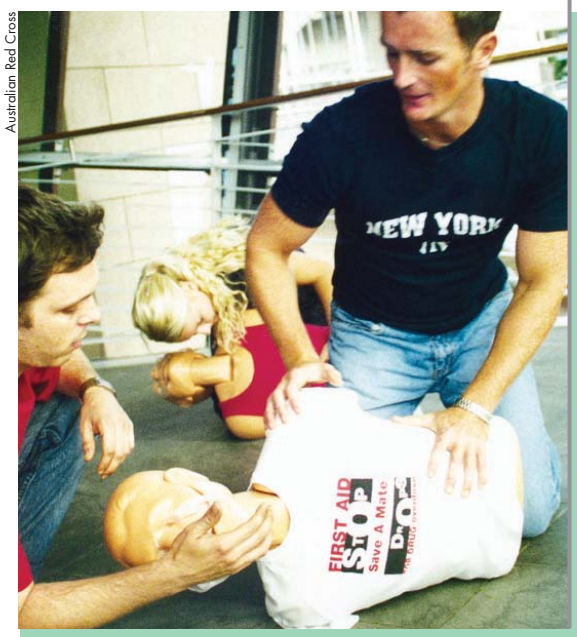
The provision of information about PHC services and the services themselves can be integrated into different harm reduction interventions including educational programmes and materials, self-help spaces, drop in centres, injecting drug rooms, referral by outreach workers and mobile vans. Services can also be provided through the coordination of referrals to health care institutions that provide free medical care, by those working with IDUs.

Possible PHC services for IDUs:

- medical care such as draining and dressing of abscesses and treatment of skin lesions;
- treatment of common infections and sexually transmitted infections (STIs);
- screening for TB and treatment;
- provision of, or referral to, voluntary HIV testing and counselling services;
- education on, and the provision of, basic materials to maintain personal hygiene;
- education and the provision of materials to maintain sanitary conditions in the place of residence;
- support, information and food for improving nutrition; and
- vaccination programmes, particularly for HBV, for IDUs and their dependents.

Save a Mate: Australia

In Australia, the misuse of drugs is the sixth largest killer of young people with up to 70 per cent of overdoses witnessed, usually by a friend or family member. The risk of a drug-related emergency is not exclusive to any single age or socio-economic group but traverses the whole of society. The prompt and appropriate intervention by bystanders with the provision of basic life support, cardio-pulmonary resuscitation (CPR), before the arrival of ambulance paramedics is an essential component in reducing the number of deaths resulting from drug overdose.



Australian Red Cross

Save a Mate (SAM) is an initiative of the New South Wales branch of the Australian Red Cross. It is a drug education programme and first-aid course specifically designed for alcohol and other drug-

related emergencies. The programme provides a general orientation to drug and alcohol issues, challenges myths, and teaches how to administer life-saving techniques in drug and alcohol emergencies. SAM is targeted at people considered at most risk of engaging in harmful drug-taking behaviour, and those who live or work in an environment where there is a risk of a drug and/or alcohol-related emergency occurring.

The programme has two components:

1. Drug and alcohol seminar
- What is a drug?
- Classes of drugs
- Routes of administration and physiological dangers
- Rationales behind drug use
- Addiction, tolerance, overdose and harm in relation to drug use

2. First aid for drug-related emergencies
- What is first aid?
- Recognizing drug and alcohol emergencies and dealing with emergency assistance telephone operators
- Emergency action principles (DR. ABC)
- Universal (standard) precautions
- Legal considerations
- Drug and alcohol first aid – CPR

Drug use affects everybody – the user, family members, children, and the wider community. If you live or work with drug issues, the chances are you will encounter an overdose or drop at some point. The skills taught in the SAM programme do save lives. In the event of overdose, people, professionals, friends or family, who are equipped with the knowledge and skills of first aid, which are needed in the vital minutes before medical assistance arrives, can administer CPR – it can mean the difference between life and death.

SAM has taken a traditional Red Cross service, first aid, and customized it to address a relevant contemporary issue, drug use. For more information, visit <www.nsw.redcross.org.au>.

3.3.7 Drug substitution treatment: low threshold programme

Some of the worst public health problems associated with drug use involve those drugs taken through injection and where the injecting equipment is shared. Of all the modes of HIV transmission, directly injecting a substance including opiates such as heroin, methadone or morphine, or other drugs such as cocaine, amphetamines, anabolic steroids, antibiotics or vitamins, contaminated with HIV into the blood stream is by far the most efficient.

In the case of heroin, IDUs can receive medically supervised treatment by drug substitution, which does not give the same effects as the drugs themselves. Substitution drugs take care of the symptoms of withdrawal and craving but do not provide a high. The benefit of substitution drugs is that pharmacotherapy helps stabilize and normalize the lives of drug users. Methadone and buprenorphine are the most commonly used substitution drugs, of which methadone is the best researched.

Some facts about methadone treatment and its uses:[64]
- Methadone is a synthetic opiate without strong sedative effects.
- Methadone can be administered orally in tablet or syrup forms thus avoiding injections and the possible associated risks of sharing needles and syringes and other injection paraphernalia.
- Methadone can cause dependence of a lesser nature than that of other opiates.
- People can stop using methadone by reducing the dose gradually.

- Retention of IDUs in substitution programmes reduces the health and social consequences of drug use and eventually may lead to detoxification and abstinence.
- For effective results, substitution drug treatment must be combined with support for IDUs to reintegrate in society, including employment, which requires support in the work place.


Andrew MacColl/Federation

3.3.8 Injecting drug rooms

Injecting drug rooms are still a controversial harm reduction intervention, but there is little doubt that such direct intervention saves lives. The rooms are in effect, safe spaces for injection with medical personal on hand to provide first aid in the event of an overdose or drop.


Australian Red Cross

Section 3.4

Facilitation of programme implementation

A coherent and smooth implementation of harm reduction programmes requires strong commitment and concerted efforts of national and local policy-makers and public authorities. Moreover, effective and broad-based community responses that involve NGOs, community-based organizations, IDUs and the private sector are also required.

National Red Cross and Red Crescent Societies have much experience in working within communities, with civil society, governments, and international donors and organizations in relief and development related programmes. Harm reduction programmes have been proven to reduce the transmission of HIV and other blood borne infections and increase the overall well-being of drug users and injecting drug users.

Yet the introduction and implementation of these programmes require additional efforts on the part of National Societies, particularly in the field of advocacy. As such, programmes are often high profile and require legal and policy reforms and changes. However, in keeping with the fundamental principles of humanity, impartiality and neutrality, it is part of the Movement's commitment to protect the most vulnerable without discrimination, which includes people who inject drugs.

There are many actions National Societies can take to facilitate programme implementation:

- Educate volunteers and staff about drug use including injecting drug use in the general community and in prisons, HIV/AIDS and harm reduction strategies. Education will also counter the stigmatization of and discrimination against IDUs and PLWHA and will empower National Society members to be informed advocates for the reform of laws and policies related to injecting drug use and to effectively implement harm reduction programmes.

64 *See* Annex II for more information on drug characteristics and effects.

- Organize workshops and seminars on relevant subjects including detainees, HIVAIDS and the role of the National Society.
- Make an effort to get the support of policy-makers at the national and local levels by explaining the importance of harm reduction programme to senior government officials at all opportune moments and in all forums. For example, the members of the National Society executive committees and boards are often ex-senior government officials or well-respected members of society. These channels should be used to deliver messages on the necessity of introducing harm reduction programmes.
- Advocate for harm reduction programmes through social marketing campaigns, resource mobilization and human resource development programmes.
- The effective implementation of harm reduction programmes partly depends on the active involvement of IDUs. In an environment of repressive laws and policies as well as stigma and discrimination, IDU participation is likely to be minimal. Yet, National Societies can contribute to creating an enabling environment:
- Organize regular discussion forums with law enforcement bodies such as the police, judges and other judicial officers. Explain the importance of harm reduction programme in the prevention and control of HIV. Such forums can be used to give updates on the implementation of programmes including the successes and setbacks, while seeking their participation in finding solutions to obstacles.
- Identify key or respected community leaders or members and engage them in the development and design of harm reduction programmes, in regular discussions on the success and challenges encountered in programme implementation as well as ways of addressing stigma and discrimination.
- National Societies can provide space in their buildings for IDU self-help groups.
- Establish coordinating bodies including policy-makers, public authorities, service providers, representatives of service users, relevant NGOs and community-based organizations at national and local levels to help streamline the efforts of organizations to avoid duplication of efforts, and share experiences and information for synergy.
- Incorporate monitoring and evaluation as part of the development of harm reduction programmes. Indicators and systems for information collection and analysis need to be defined during the programme development phase. Effective monitoring will indicate in a timely manner programmatic weaknesses so that they can be addressed and rectified. Such measures positively contribute to the effective, efficient and transparent management of programmes and assist in achieving programme objectives. Such monitoring and evaluation will produce lessons learned and perhaps good practices which can be disbursed across the Movement.

Section 3.5

Advocating harm reduction programmes

In many countries, the transmission of HIV is being fuelled by people sharing injecting equipment. And still, there are no supportive policy and legal framework for the development and implementation of harm reduction programmes. In light of the alarming scenarios seen in eastern Europe and Asia, there is a compelling reason for strongly advocating governments to introduce harm reduction programmes.

National Societies in partnership with other organizations can play a useful role in conducting advocacy for the acceptance, introduction and maintenance of harm reduction programmes. In this process it is important to identify issues that National Societies focus on.

3.5.1 **Changing society views**

Galina Obukh/Federation

Societies have views about IDUs that do not reflect an understanding of why people become involved in drug use and the associated risks. Negative or uniformed views may be reflected in marginalization or harassment of, stigmatization or antipathy towards, or discrimination against IDUs. To change such views requires:

- conducting a short survey to understand society's views and perceptions of drug use and IDUs; and
- based on the findings of the surveys prepare appropriate messages that can positively influence social views and perceptions, including countering misunderstandings and misinformation. This work aligns naturally with existing work to promote humanitarian values and should involve IDUs.

Possible action that National Red Cross Red Crescent Societies can take:

- Educate volunteers and staff about drug use including injecting drug use in the general community and in prisons. Also educate about HIV/AIDS and harm reduction strategies to promote humanitarian values and counter stigma of and discrimination against IDUs.
- Involve current and ex-IDUs as well as PLWHA in the design and implementation of the advocacy process.
- National Societies can provide space in their buildings for IDU self-help groups.
- Develop key messages on injecting drug use in the community and in prison, and on HIV/AIDS and harm reduction.
- Identify community and government leaders and organize briefing sessions to make them aware of issues faced by IDUs and ways to deal with these, including harm reduction strategies and countering stigma and discrimination.
- Through the oriented key society leaders, and using the key messages, facilitate educational sessions for the community.
- Facilitate ongoing dialogue with community leaders on harm reduction strategies, including with leaders of faith-based organizations and ethnic and marginalized groups.
- Promote dialogue for a supportive policy and legal framework through discussions with key community members and others such as academics and activists.
- Use public forums and, in particular, the mass media to explain what harm reduction is, its benefits, the underlying rationales and its cost effectiveness.
- Disseminate information through the media to the general public about harm reduction programmes during national, regional or global events such as conferences, on 1 December – World AIDS Day, 8 May – World Red Cross and Red Crescent Day.
- Coordinate public debate with professional associations including teachers, lawyers, law enforcement and medical, as well as human rights centres, known activists and NGOs.
- Research which obligations with regards to IDUs and harm reduction the government has ratified freely in human rights treaties. What obligations did the government agree to through the UNGASS Declaration? Did the government undertake obligations in the Ottawa Charter on Health Promotion, 1986, the Cairo Programme of Action, 1994, the Habitat Agenda, 1996, the Copenhagen Declaration, 1999, or other United Nations Conference Declarations? What are the country's obligations derived from the World Health Assembly's Declaration, Health for All in the 21st Century, 1998? What plans or promises has it made in national HIV/AIDS strategies? Make these public.[65]
- Advocate for health services that promote a range of options for people choosing to discontinue drug use.

65 See footnotes 42, 50, 51 and 52.

Convey the message: Bosnia and Herzegovina

'Drugs are not having the last word', was the topic of a press conference and round table discussions organized by the Red Cross of Bosnia and Herzegovina on 8 May – International Red Cross and Red Crescent Day. "The subject has been on the Red Cross agenda for the last few years," says Lea Kujundzic, head of the Red Cross international department. "And we use the Red Cross Red Crescent Day to highlight the problem in our country, a problem which is on the way from east to west."

Two video clips aimed at prevention of drug abuse have been developed and shown on the national television. A large ceremony took place for the representatives of diplomatic missions and partners from among NGOs devoted to these latest Red Cross activities.

Confront stigma and discrimination: Viet Nam

The Red Cross in Viet Nam has been including IDUs in the groups of youth receiving education and skill development regarding HIV prevention. It has been a challenge to reach out and include IDUs as the government's 'social evils' approach promotes the idea that IDUs are to be feared and shunned, rather than helped. One community even refused the Red Cross use of the community hall if IDUs were included in the HIV education sessions. Rather than sacrifice the fundamental principles of the Red Cross and Red Crescent, the Red Cross in Viet Nam conducted the session under a tree in the village.

Villa Maraini

Use the media: Italy

The Villa Maraini, a foundation of the Italian Red Cross in Rome, has been providing treatment to drug users within the framework of the Italian Red Cross for more than 25 years. By advocating for better treatment of IDUs by police forces, it is creating an enabling environment for harm reduction activities to be carried out. And this means less HIV transmission. The foundation advocates for humane treatment to reduce human suffering – respecting that all drug users are different and that addiction is a disease that requires treatment in just the same manner that other diseases require treatment.

The foundation is fighting the stigma faced by drug users in Italy using the mass media. Five police officers, who are also world or Olympic sports champions, have appeared in advertisements organized by Villa Maraini advocating for the humane treatment of drug users. Now that the police force fully understands the issues that surround drug use, they have been more capable of understanding the harm reduction approach.

3.5.2 Influencing policy-makers

The lack of a supportive legal and policy framework is the greatest obstacle to the acceptance, introduction and maintenance of harm reduction programmes. In many countries, the relationship between the spread of HIV and drug use is ignored, disbelieved or neglected. In some countries, dialogue on policy reform rarely takes place.

Drug policies in many countries do not focus on public health issues such as HIV/AIDS. Conversely HIV/AIDS policies often do not address injecting drug use. Often governments and development agencies place priority on funding long-term solutions to drug use undermining efforts to reduce the more immediate harm caused by the transmission of infections such as HIV through sharing injecting equipment.

Informing policy-maker's views requires several factors:

- Involve current and ex-IDUs as well as PLWHA in the advocacy process so as to present their views and to give a human face to the issues.
- Present evidence that despite repressive laws and policies in some countries concerning the supply, demand and use of drugs over decades, drug use and injecting drug use is increasing.
- Present evidence that drug use is present in the society, including information on the role of injecting drug use in prisons in facilitating generalized HIV epidemics.
- Present the evidence about the role of sharing of injecting equipment increasing the incidence and prevalence of HIV, HBV and HCV in the community and in prisons.
- Present the evidence that harm reduction programmes prevent HIV transmission and other blood borne infections in the community and in prisons.
- Present evidence that harm reduction programmes do not increase the level of drug use in the community and in prisons.
- Present evidence that harm reduction programmes are cost effective.
- Present the government with information on its human rights obligations, particularly in relation to health, which it has freely entered into, and how these relate to injecting drug use and HIV.
- As part of promoting humanitarian values, assert that while an IDU-related HIV epidemic may be less visible than a famine or natural disaster, the government's obligations in the face of human suffering and death are similar.

There are several possible actions National Red Cross and Red Crescent Societies can take:

- Involve current and ex-IDUs as well as PLWHA in the design and implementation of the advocacy process so as to present their views and to give a human face to the issue.
- Gather scientific evidence on harm reduction programmes and their success and present it to decision-makers through all possible channels.
- Gather good practices and lessons learned from other harm reduction programmes in country and from other countries to present to government and communities.
- Advocate with the government to repeal laws on the non-provision of condoms, needles and syringes in the community and in prisons.
- Advocate for the introduction of appropriate drug use and related education programmes for families of prisoners and juvenile detainees.
- Advocate with governments to expand the range of non-custodial sentencing options for persons convicted of drug use and, where appropriate, related charges.
- Support AIDS education, voluntary and confidential testing for HIV infection, pre- and post-test counselling and awareness programmes for IDUs.
- Develop youth peer education programmes and outreach for people who inject drugs.

- Develop peer education programmes specifically targeted at the use of drugs, including injecting drugs, for recreational use at parties and raves.

- Research the human rights treaties the government has ratified; the obligations which it has undertaken in the UNGASS Declaration and Ottawa Charter on Health Promotion (1986) as well as the plans laid out in national HIV/AIDS strategies. Advocate for the government to fulfil its obligations particularly with regards to IDUs and harm reduction.

- Negotiate with governments to undertake pilot harm reduction programmes.

- During international or national events that have wide media coverage, focus on one or two key messages so as to provide a sustained, coherent message. For example, see Annex III, the International Federation press releases from the International Conference on Reduction of Drug Related Harm, Thailand, 6-10 April 2003.

Andrew MacColl/Federation

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Annex II

Drug characteristics and effects[66]

Heroin

- First discovered by a British chemist in 1871, heroin or *diacetylmorphine* is produced by bonding opium's active ingredient, morphine, obtained from the opium poppy, with a common industrial acid, acetic anhydride. By the end of the 19th century heroin was being mass produced and used as a broad spectrum pain killer. It was believed to be a safe, non-addictive morphine substitute.
- Heroin can be administered by injection, sniffing (snorting), or smoking and is highly physically addictive and produces lasting psychological dependence.
- Depending on the availability of heroin and the finances of the user, heroin is commonly injected about three times a day with effects lasting from three to six hours.
- Common behaviours following administration include an increased sense of euphoria and sleepiness, lethargy, docile appearance and possibly a shuffling gait.
- Acute withdrawal symptoms commence within 8 to 12 hours after the last dose. Though these are generally not life threatening they can be very severe, including gastrointestinal discomfort, muscle cramps and flu-like symptoms. In some people, withdrawal symptoms can be so severe that when some users obtain heroin, they may inject as rapidly as possible, sometimes without concern for possible HIV, hepatitis B or hepatitis C infection.
- Associated health problems of long term heroin use can be collapsed veins, abscesses, tetanus, HIV/AIDS, hepatitis B, hepatitis C, heart, chest and bronchial problems and constipation. Overdose risk is independent of length of use.

Opium

- The sole source of opium is the opium poppy, *Paperver somniferum.* The psychological and healing effects of opium have been known for around 4,000 years.
- By incising the head of the opium poppy, farmers can extract its sticky brown sap from the egg shaped bulb. The raw opium sap contains 7-15 per cent morphine, which easily can be precipitated from the poppy sap after simple boiling. Raw opium has a characteristic odour which is strong and pungent.
- Opiate receptors in the brain induce high physiological addiction and lasting psychological dependence. Regular use results in increased tolerance and the need for greater quantities of the drug.
- Use of opium in developed countries has decreased substantially but it is still widely used among highland ethnic minorities in China, Laos, Cambodia, Myanmar, Thailand and Viet Nam both for recreational and medical purposes.
- Can produce intense euphoria, a heightened state of well-being, enhanced imagination and speech. Soon after, respiration slows down, imagination diminishes and the thinking process becomes confused. Lethargy, relaxation and deep sleep usually follow.

66 The information in this annex is adapted from the *Manual for Reducing Drug Related Harm in Asia,* The Centre for Harm Reduction, Macfarlane Burnet Centre for Medical Research and Asian Harm Reduction Network, 2003.

- Administration is usually by smoking but it can also be chewed and cooked with food for digestion. Particularly in countries of origin, it can be drunk as an infusion.
- The opium pipe has a long thick stem with a bowl at one end. The opium 'pellet' is placed into the bowl, heated and the smoke is inhaled.
- Sediment or the 'dross' left in smoking implements can contain up to 8 per cent morphine, is often used again and is known as black water opium. This form of opium still remains popular in particular Asian countries, i.e. Viet Nam and Cambodia.
- Smoking puts more of the active ingredients of opium into the blood stream faster, by the way of the lungs, so the drug begins to reach the brain in about seven seconds.
- Long-term use results in decreased mental and physical capacities with loss of appetite and body wasting.
- Withdrawal symptoms, similar to those of morphine, include agitation, irritability, anxiety, restlessness, insomnia, and abdominal and muscle pain.

Morphine

- Morphine is a naturally occurring substance in the opium poppy, *Papaver Somniferous.* Morphine is most commonly found as morphine sulfate and morphine hydrochloride. Both are fine white crystalline powders, bitter to the taste. Both are soluble in water and slightly soluble in alcohol.
- Morphine is a potent narcotic analgesic, and its primary clinical use is in the management of moderately severe and severe pain.
- Morphine is administered by several routes (injected, smoked, sniffed, or swallowed); but when injected intravenously, morphine can produce intense euphoria and a general state of well-being and relaxation.
- Regular use can result in the rapid development of tolerance to these effects. Profound physical and psychological dependence can also rapidly develop, and withdrawal sickness upon abrupt cessation of morphine use; many of the symptoms resemble those produced by a case of moderately severe flu.
- Irregular or intermittent users (who are not substituting the drug for another narcotic analgesic) may start and continue to use doses within the therapeutic range (i.e. up to 20 milligrams). However, regular users who employ morphine for its subjectively pleasurable effects frequently increase the dose as tolerance develops. To take several hundred milligrams per day is common, and there are reliable reports of up to four or five grams (4,000-5,000 mg) per day.
- Duration of effect is four to five hours.

Methadone

- German chemists first produced methadone in the early 20th century and it has been used clinically since the end of the First World War.
- It is a powerful synthetic opiate like heroin and morphine but without the strong sedative effect. It can substitute for heroin and is widely used by doctors in the treatment of heroin addiction.
- In its basic form it is a white crystalline powder. It is generally administered as a syrup, mixed with cordial or fruit juice and taken orally. Methadone is also available in an injectable form. Users have been known to inject the syrup which can result in health problems.
- Effects are felt within one hour of a dose, with the peak effect felt at four to eight hours after the dose. The effects of methadone last longer (usually up to 24 hours) than heroin and therefore administration is usually once a day.
- Doses vary for different people and from the commencement of treatment the dose is gradually increased while observing the level of tolerance and avoiding the onset of heroin withdrawal. Once treatment has stabilized, daily dosages can vary from 40 milligrams to over l00 milligrams.
- If the dose is too low opiate withdrawal can occur resulting in symptoms such as abdominal cramps, nausea and vomiting, irritability and back and joint ache. Too high a dose can be indicated by such symptoms as drowsiness, nodding off, shallow breathing and pinpoint pupils.

- Other side effects that can occur but are unrelated to the dose can include, sweating, constipation, aching muscles and joints, decreased sex drive, fluid retention, loss of appetite and tooth decay.
- Methadone can lead to dependence but it is generally considered less serious than heroin and morphine dependence and is easier to treat. People can stop using methadone by reducing their dose gradually, by not setting a time to achieve this goal, and by consulting the counsellor/doctor involved in the methadone programme about what is involved.
- Sudden withdrawal is not recommended as the discomfort encountered can result in people using heroin again regularly.

Cocaine

- Inhabitants of South America have a history of chewing the coca leaf for thousands of years but it has only been known to the Europeans since the 19th century. The coca leaf affects a number of neurotransmitter systems in the brain and is active on various anatomical sites within the central nervous system.
- Cocaine is produced by chemical processing and treatment of the coca plant which transforms the leaves into coca paste. Paste is treated with hydrochloric acid to remove impurities and results in white, crystalline substance, cocaine hydrochloride.
- It is the most potent of the stimulants.
- In the form of leaf chewing or brewed tea the drug is believed to be virtually harmless bur it is rarely available in this form outside of South America.
- Disagreements exist among authorities and researchers as to the addictive nature of cocaine. While some state there is a high risk of developing physical and psychological dependence, many researchers suggest that cocaine does not produce physical dependence.
- Methods of administration include snorting by intranasal inhalation (onset of effects two to four minutes); smoking or 'freebasing' (burning the crystals and smoking the vapours; onset of effect 15 seconds); and injection (onset of effect 15-20 seconds).
- Effects can last from 10 to 40 minutes depending on the purity and the route of the administration.
- Typical behaviours during the effect include hyperactivity, exhilaration, increased energy, alertness, confidence and sexual activity. The user may also have unpredictable behaviour, feel invincible and be both quarrelsome and aggressive.
- A fatal condition can result from sensitivity to the drug or massive overdose.
- Several hours after last use, feelings of agitation and depression can occur.
- There is a high risk of HIV transmission since typical IDUs of cocaine require more injections than heroin, and high incidence of sharing of needles and unprotected, prolonged sexual intercourse.

Cannabis

- Cannabis is a psychotropic product from the plant *Cannabis sativa*. It is believed to have been used for thousands of years for medical, religious and social reasons. The stem of the plant (non potent form of cannabis) is used in the manufacture of hemp rope, string, paper, textiles and clothing.
- There are male and female plants. The strongest concentration of the psychoactive chemical, Tetrahydrocannabinol or THC, is found in the flowering shoots of the female plant.
- A widely used drug with a relatively low potential for harm when compared to heroin, alcohol and tobacco.
- There are differing views by authorities on physical dependency of cannabis. Psychological dependency can be associated with frequent cannabis use.
- Three forms of cannabis exist: marijuana, hashish and hashish oil. Marijuana is the dried leaves and flowers of the plant and is usually the least potent of the three. Hashish forms as a sticky oil coating on the flowering tops of the plant which is collected and made into small blocks of dried resin. The concentration of THC is greater thus producing a stronger effect. Hashish oil is the

extraction from the resin of the cannabis plant and is the most powerful of all the cannabis forms.
- Marijuana is usually smoked in hand rolled cigarettes or in a pipe. The concentrated form of hashish or hashish oil is often smoked with ordinary cigarettes or incorporated into food substances such as cakes and biscuits and ingested.
- Effects vary due to a number of factors in relation to the person, method of administration, cannabis form and frequency and period of use. Some effects can include euphoria, relaxation, relief from stress and pain, increased appetite, impaired motor skills, confusion, loss of concentration and decreased motivation.
- Effects normally reach their peak within 30 minutes and can last up to three hours.
- Withdrawal following long-term use can include headaches, anxiety, depression, and sleep disturbance.
- Like other burnt inhalations cannabis contains carcinogens, tar and carbon monoxide. This can result in respiratory complications, cardiovascular effects and cancer. A single cannabis cigarette contains the same amount of tar and other noxious substances as approximately 14-16 filtered cigarettes.

Amphetamine

- Originally synthesized in Germany in the late 19th century amphetamines were not patented until the 1930s. In the 1940s the drug came into therapeutic use for a variety of medical conditions such as epilepsy, depression and hyperkinetic children. Following the Second World War, amphetamines were promoted quite readily.
- Amphetamines have a stimulant action similar to the naturally occurring hormone adrenaline which stimulates the activity of the central nervous system and increases the activity of the brain.
- Amphetamines appear in a number of forms and when manufactured illegally can be found in powder, tablet, capsules or liquid. Administration is by ingestion, injection, inhaled through the nose and smoked when in the form of methamphetamine hydrochloride.
- Most common illicit manufacturing of amphetamine is in the form of methylamphetamine. The most common starting material for methylamphetamine is ephedrine, which is a legal substance, is readily available in tablets or capsules and is sold as a decongestant.
- Self medication with amphetamine is common among truck drivers, students, fishermen, and businessmen to stave off normal fatigue, enabling them to work for days with little sleep or food.
- Effects usually wear off after three to six hours and the user can become suddenly tired, irritable, depressed and unable to concentrate. Methylamphetamine 'ice' when smoked can have an effect of between 2 to 16 hours depending on the amount taken.
- Effects from amphetamines vary and depend on dosage, mode of administration, the individual, and the circumstances in which the drug is taken.
- Low doses can result in a sensation of euphoria, heightened alertness, increased energy and activity, reduced appetite and self confidence. Long-term use can lead to malnutrition, exhaustion, depression and psychosis. Death from stimulant use is rare but is more likely to occur with intravenous injection.
- Tolerance can be pronounced where a long-time user may need 20 times the initial dose to produce the same effect.
- Has a reputation for facilitating social and sexual interactions which has implications for potential HIV risks as enhanced sexuality may not be accompanied by safer sexual practices.
- Withdrawal symptoms during the initial period may be acute exhaustion, and for a regular user, it may be followed by irritability, lethargy, deep depression, anxiety attacks and episodic craving.

Ecstasy or Methylenedioxymethamptamine (MDMA)

- Although first patented in Germany in 1914 as an appetite suppressant, it was never marketed. In the 1970s it was used by psychiatrists in the United States as a valuable and safe aid to counselling and therapy, until it was banned in the mid 1980s. Since the 1990s it was commonly associated with dance parties and other social activities, including sex.

- Closely related to both amphetamines and hallucinogens it is often described as a psychedelic drug with stimulant properties.
- Appears as tablet (most frequently seen), capsule and powder form.
- Preferred administration is by swallowing although there are reports of experimentation by injection and inhalation.
- Taken orally the effect will commence between 30 to 60 minutes and may last for several hours.
- The immediate effects can be a 'rush' of euphoria, followed by a general sense of peacefulness and heightened sensual awareness. Inhibition can disappear, there is increased self esteem and confidence, and improved trust and communication between friends can occur. Adverse effects can include dry mouth and throat, jaw clenching, increased heart rate and blood pressure.
- Overdose can result from very high blood pressure, increased heart beat and body temperature (overheating). Deaths have been reported from fluid imbalance either by dehydration or water overloading.
- A 'high' can be followed with fatigue, anxiety and a depression which may last several days.
- Tolerance can develop with continued use and some dependence is thought to occur. Little is known about long-term effects but it has been suggested that it may damage some types of brain cells.

Hallucinogens

- Hallucinogens also known as psychedelics, act on the central nervous system to produce significant, often radical, changes to the user's state of consciousness; can distort the user's sense of reality, time and emotions. First synthetically produced in the 1940s to remove obstructive inhibitions in psychiatric cases. Those derived from plants, such as the peyote cactus, have been used by indigenous groups of Mexico for hundreds of years for recreation and religious observations. Other hallucinogens include mescaline (natural product from the peyote cactus), nutmeg and mushrooms (containing the drugs psilocin and psilocybin), dimethyltryptamine (DPT), phencyclidine (PCP) and ketamine hydrochloride.
- Lysergic acid diethylamide (LSD) is the best known of hallucinogens. It is a synthetic drug based on an ergot which has been extracted from a dry fungus that grows on rye grass. The manufacturing of LSD from precursor drugs requires a high level of technical knowledge and expertise.
- LSD is an odourless, colourless and tasteless liquid which is often absorbed into any suitable substance such as blotting paper and sugar cubes or can be incorporated into a tablet, capsule or occasionally confectionery. Its most popular form is on absorbent sheets of paper which are then divided into squares and taken orally.
- Unlike many other drugs, LSD users can have little idea of what they are embarking on and the effects can vary from person to person, from occasion to occasion and the dose.
- Effects can begin within one hour, build up between two to eight hours and slowly subside after about 12 hours.
- For many LSD users the effect can be extremely enjoyable, relaxing and promote a sense of well-being. There are often changes in perception, of sight, sound, touch, smell, taste and space. Negative effects can include loss of emotional control, disorientation, depression, dizziness, acute panic and feelings of being invincible resulting in a person physically placing themselves in danger.
- Long-term use can result in flashbacks of hallucinogenic effects, days, weeks or months after using the drug.
- There is no evidence of physical dependence and no withdrawal symptoms have been observed even after prolonged use. However, psychological dependence can occur.
- Tolerance to LSD can develop rapidly but tolerance can also disappear after five to six days when not used on a regular basis.

Nicotine/tobacco

- Known to be used by Native Americans in religious and social occasions 1,000 years ago. Introduced to Europe in the 17th century where it was used for recreation and medicinal pur-

poses. Tobacco consumption expanded with the introduction of milder forms of tobacco, automatic cigarette rolling machines, massive advertising campaigns and when governments saw its potency as a source of revenue.

- Nicotine, found in tobacco, is one of the most addictive substances known. Nicotine is a central nervous stimulant that disrupts neurotransmitter balance. Physical dependence on nicotine and more importantly, psychological dependence on cigarettes, develops quickly.
- Tobacco inhalation results in nicotine affecting the central nervous system (CNS) in about ten seconds. With the chewing of tobacco, it takes upwards of five minutes to affect the CNS.
- The effect of nicotine when tobacco is consumed in the form of smoking, chewing or as snuff is the constriction of blood vessels, raising of the heart rate, and blood pressure, decreased appetite, producing mild emphysema, partially deadens sensation of taste and smell and irritates the lungs. Prolonged use of tobacco can cause lung, heart and blood vessel damage and cancer.
- The World Health Organization estimates that smoking is responsible for one out of five deaths, or 3 million deaths per year. Research has shown that over 50 per cent of smokers will die prematurely as a direct result of tobacco induced illnesses.
- Tolerance to the effects of nicotine develops rapidly, faster than that of heroin and cocaine.
- Withdrawal, after long term-use can result in headaches, severe irritability, inability to concentrate, nervousness and sleep disturbance. Nicotine craving may last a lifetime after withdrawal.
- For the very physically dependent, nicotine patches are provided in a relatively harmless form avoiding the injurious affects of tobacco smoke such as carbon monoxide, tar, soot and other by products.

Solvents, inhalants and volatile substances

- Since ancient times, people have inhaled the vapours of perfumes, ointment and burning spices as part of their religious ceremonies. Solvent misuse, as we know it, emerged during the 1950s in the United States and has since spread to most parts of the world.
- Three main types of inhalants are organic solvents, volatile nitrates including amyl nitrate – poppers, which are used for sex and dancing, and nitrous oxide.
- Some of the most common inhalants include glue, aerosol spray cans, paint thinner, petroleum products, chrome based paint and felt pens.
- Inhalation is either through the mouth or nose. Often the product is sprayed into a plastic bag or soaked onto a rag and then inhaled or it is inhaled directly from the container.
- Inhalants are absorbed through the lungs into the blood stream, which then carries the chemicals rapidly to the brain. They slow down the activity of the brain and central nervous system. Intoxicating effects are often quick acting (seven to ten seconds), intense and short lived, lasting no more than 30 to 60 minutes (some inhalants only last two minutes).
- Effects can include excitement, dizziness, stupor, disorientated and uncoordinated, visual disturbance and slurred speech. Prolonged use, particularly leaded petroleum products, can lead to brain, liver, kidney, and especially lung damage. Death can arise from respiratory arrest and cardiac irregularities.
- Organic solvents are often readily available, inexpensive and are commonly used by young people in their first few years of secondary schooling.

Alcohol

- Alcohol is the most commonly used psychoactive drug globally and the oldest. Historical references abound in literature, religion and science about alcohol, its effects and its consequences.
- The production of alcohol results from a process of fermentation, in which water and yeast act on the sugars of various types of grains, vegetables and fruit. The psychoactive drug that is produced is ethyl alcohol.
- As a depressant drug, alcohol slows down the activity of the central nervous system and in small doses can result in people being relaxed, with inhibitions being lowered. As the depressant effect takes over, it can slow reflexes, depress respiration and heart rate and disrupt reasoning and judgment.

- Heavy drinkers usually develop a tolerance to alcohol and need to drink more to experience the same effect.
- Regular drinking can result in psychological and physical dependency.
- The long term effects of alcohol on the body, following heavy drinking over a long period of time, are extensive. These can include higher blood pressure, enlarged heart, cirrhosis of the liver, liver swelling and pain, skin bruising, stomach and intestinal ulcers, muscle weakness, loss of memory, loss of sensation in feet and hands and foetal damage if pregnant.
- Behavioural problems are commonly linked to alcohol. Some problems can include family violence, work absenteeism, motor accidents, legal problems and fines associated with violent assaults and financial difficulties.
- A physically dependent person will suffer withdrawal symptoms that can include loss of appetite, irritability, confusion, inability to sleep, cramps, tremors, hallucinations and even death due to seizures.
- Addiction to alcohol is a chronic progressive disease that is distinguished by lack of control over drinking, preoccupation with alcohol use despite adverse consequences and denial. If not controlled it can be fatal. While alcoholism can take years to develop the recovery period can take a lifetime.

Benzodiazepines

- This class of synthetically-based drugs was developed in the late l940s and 1950s as an alternative to barbiturates. In the West they came into wide clinical use in the 1960s and the 1970s. The drugs were looked upon as an innovation in the treatment of anxiety disorders and sleeping problems.
- Benzodiazepines are a chemical group term and are classified as sedatives or tranquillizers. Benzodiazepines combine with certain parts of the nerve cells in the brain to enhance inhibitory mechanisms. They induce a state of calmness, slowing down physical, mental and emotional responses. When given in large doses they will induce sleep. The increasing number of drugs includes Temazepam, Diazepam, Nitrazepam, Oxazepam, Clonazepam and Flunitrazepam.
- Administration is usually in tablet, capsule or liquid form and taken orally or by injection. The calming effect is evident in about 45 minutes and some degree of sedation can persist for 24 hours.
- Adverse side effects can include lethargy, confusion, mood swings, nausea, dizziness, disturbing dreams and slurred speech. The over prescribing or individual misuse of such drugs can result in increased anxiety, irritability and hostility. Mixed with other drugs they can reduce judgment of time, space and distance and combined with alcohol can result in death.
- After a high dose continued for about two months or a low dose taken for a year or more, withdrawal can be extremely severe and prolonged. Feelings of craving for the drug, anxiety, sleep disturbance and possible hallucinations can occur. Withdrawal symptoms can erratically come and go in cycles separated by two to ten days and may persist for several months after the drug has been stopped.

Anabolic steroids

- Performance enhancing drugs have been documented throughout human history. In the 1920s, testosterone (male hormone) was isolated and by the First World War was being administered to troops to overcome fatigue and injuries. Since the 1950s, testosterone has been synthetically produced and its use was soon associated with athletic performance.
- Anabolic steroids are a group of synthetic compounds which are structurally related to the natural male hormone testosterone. They produce anabolic activity (greater muscular bulk resulting in increased muscular strength) by increasing protein synthesis and androgenic activity (enhanced secondary sexual characteristics).
- Administration is by intravenous or intramuscular injection and orally.
- Injectable forms are designed to be longer acting than orals and are released slowly over time. The high rate of administration via injection has raised the concern and risk of HIV, hepatitis

B and hepatitis C. Primarily taken to increase muscle mass, they can also allow a user to train harder, promote a quicker recuperation phase and increase the healing process for some types of injuries.

- Early effects can include increased confidence and energy, enhance motivation and enthusiasm, increased aggression and sexual appetite. Larger doses can result in a loss of inhibition, lack of judgment and mood swings. Prolonged users frequently become quarrelsome and aggressive. Severe prolonged use can result in heart disease, liver damage, mental disorders and violence.
- Physical addiction is not believed to occur but some users do become psychologically dependent, believing their physical and sporting achievements will be reduced without them.
- Withdrawal symptoms can include severe depression, insomnia, lethargy, loss of appetite, headaches and craving.

Barbiturates

- Barbituric acid, a combination of urea and malonic acid, the base material of barbiturates, was first synthesized in 1863 by Adolph von Bayer. In 1903, barbiturates were first synthesized as a sedative for nervousness.
- Barbiturates are a prescription drug in a white bitter tasting powder soluble in water.
- Barbitates are swallowed as tablet, capsule or liquid solution. They can also be inserted as a rectal suppository or injected into bloodstream (mainlining) or muscle, or under skin (skin popping).
- Effects include relaxation, peacefulness, sleepiness, pleasurable intoxication, dizziness, inactivity, withdrawal, interrupted thought process, mood swing, excitement, increased pain, hostility, depression, anxiety, confusion, changed vision, increased sex drive, intense emotions, hangover.
- Barbiturates depress the central nervous system and result in a progressive decline in blood pressure, heart rate and breathing. They can produce nausea, vomiting, abdominal pain, alternate pupil constriction and dilation, loss of reflex response, low body temperature and blood temperature, and weak pulse.
- Tolerance builds quickly, which requires increasing the dose to maintain the effects of barbiturates. Craving continues after pleasurable effects disappear and drug use is stopped.

Annex III Press releases

International Federation of Red Cross and Red Crescent Societies

Federation news

PROTECTING HUMAN DIGNITY

Red Cross Red Crescent calls on governments to end 'social evil' policies that fuel HIV/AIDS, 5 April 2003.

Governments need to stop treating people who are at high risk from HIV/AIDS as 'social evils' and urgently address the stigma, discrimination and marginalization of these groups if global efforts to combat the disease are to be achievable, said the International Federation of Red Cross and Red Crescent Societies.

The call comes on the eve of the 14th International Conference on the Reduction of Drug Related Harm in the northern Thai city of Chiang Mai, which runs between 6-10 April. The conference, of which the International Federation is a co-host, will address, among other issues, the negative impact of 'social evil' policies on preventing HIV infection. Among the groups generally targeted as a social scourge, are injecting drug users and commercial sex workers.

"We need greater recognition worldwide of the fact that by ostracizing and marginalizing groups of people, they are made especially vulnerable to disease. We know that by being singled out as deserving punishment, the unsafe practices of injecting drug users are being driven underground, resulting in a public health disaster", said Massimo Barra, founder of an Italian Red Cross foundation that assists injecting drug users, and board member of the Global Fund to Fight AIDS, Tuberculosis and Malaria.

Southern Europe and communities in North and South America and Australia, have previously experienced explosions in HIV epidemics through the use of shared injecting equipment. Eastern Europe and parts of Asia in particular, are today witnessing alarming rates of HIV infection through shared injecting drug equipment. In Eastern Europe, which has the fastest growing HIV/AIDS epidemic in the world, HIV rates have soared by 1300 per cent since 1996 while in Russia, up to 90 per cent of registered infections have been attributed to the use of shared injecting equipment.

"The only way to reverse this trend is for governments to implement policies that see a deliberate shift from social exclusion to social inclusion of injecting drug users. Reach out to them and make their practices safe. Providing clean needles is a start," added Barra.

Studies show that needle exchange programmes have reduced high-risk behaviour among injecting drug users by as much as 80 per cent, with an estimated 30 per cent or more reduction in HIV infection rates.

"There is clear scientific evidence that needle exchange programmes work. They help contain the HIV/AIDS pandemic, and in a very cost effective way. Evidence is also clear that these programmes do not promote drug use," said Bernard Gardiner, head of the International Federation's HIV/AIDS unit.

The Red Cross and Red Crescent is already implementing such programmes in several countries, including Italy, Croatia, Latvia, Portugal and Spain in collaboration with governments or other organizations, while the Vietnamese and Chinese Red Cross have begun to include injecting drug users in their HIV/AIDS prevention programmes.

International Federation of Red Cross and Red Crescent Societies

Federation news

PROTECTING HUMAN DIGNITY

Prevent war on drugs becoming war on drug users, says Red Cross Red Crescent, 10 April 2003.

It is becoming more urgent every day for governments to provide efficient and practical measures to help injecting drug users lead healthy lives, such as increased access to treatment and programmes that lessen the harm they are exposed to, the International Federation of Red Cross and Red Crescent Societies said today. Harsh and even violent policies to force individuals to change, only shift the war on drugs to a war on drug users, it added at the closing of the 14th International Conference on the reduction of drug-related harm in Chiang Mai, Thailand.

HIV-rates among injecting drug users who share needles and syringes are rapidly increasing – in many countries the infection rates have exploded to epidemic levels in less than one year. Most injecting drug users are already a disenfranchised population at high risk to HIV infection, and face high levels of stigmatization, discrimination and even incarceration.

Support to these groups is imperative, said Dr. Massimo Barra, who founded an Italian Red Cross foundation that assists injecting drug users, and board member of the Global Fund to Fight AIDS, Tuberculosis and Malaria.

"If we do not recognize, respect and appropriately provide available and proven treatment strategies to people who use drugs, if we react in ways that aggravate the suffering, then we are perpetuating an attitude that goes against the concept of humanity and human rights – as well as against the interests of each nation. Easier access to clean needles and syringes, drug substitution and treatment programmes is a humanitarian gesture, not an act of complicity," said Dr. Barra.

Hundreds of scientific studies around the world have demonstrated the effectiveness and cost benefit brought about by harm reduction strategies, which often include needle and syringe exchange programmes and drug substitution treatment.

"The scientific evidence is clear: harm reduction works. 'Social evil' policies, condemnation, harassment and even incarceration of drug users do not," said Bernard Gardiner, manager of the International Federation's HIV Unit. "What is urgently needed are treatment programmes for those who can and want to stop using drugs and effective harm reduction programmes to stop people from dying. The stigmatization and discrimination of injecting drug users, particularly those who are HIV-infected, continues to spread the virus around the world, also among the groups who consider themselves at low-risk."

Although many countries are already providing quality services to address problem drug use, other governments have instituted policies that hinder practical harm reduction work. A number of Red Cross and Red Crescent societies in Europe, Africa, Asia and the Americas are already running harm reduction programmes in line with the International Red Cross and Red Crescent Movement's humanitarian mandate. Most of these programmes build on the experiences and views of current and former drug users and HIV positive people, who through these programmes are involved in the betterment of their communities and their own personal growth and human dignity.

The Red Cross and Red Crescent aims to relieve the suffering of people all around the world, and it does this mainly by working in local communities. Red Cross helps people during times of war and peace, and also after natural disasters, all of which today requires working towards protecting the basic social, economic and cultural needs of all individuals regardless of their origin, beliefs or status.

The International Red Cross and Red Crescent Movement plays a unique role in protecting the dignity of persons affected by disease, in particular through efforts to reaffirm the principles - Humanity, Impartiality, Neutrality, Independence, Voluntary Service, Unity, and Universality - and values of international humanitarian law. Discrimination and intolerance continue to cause great suffering that affects individuals and societies. There is widespread lack of respect for international humanitarian law, human rights and human dignity in the world today. Yet no person can be undeserving of the protection of the law. Respect for the inherent dignity of the human person is a basic tenet of international law. Moreover, the ultimate aim of any legal order should be to expand the protection afforded to the individual.

States and the components of the Movement are natural partners for humanitarian action. States recognize that National Societies are autonomous organizations that play an auxiliary role in providing humanitarian services side by

side with the public authorities within their own countries. They are jointly responsible for preventing and alleviating human suffering and for preserving the dignity of persons affected by disease and other harmful events or circumstances.

IDUs are particularly vulnerable owing to discrimination, marginalization and social exclusion. Measures are needed to empower IDUs and to strengthen their capacity to respond to and cope with situations that threaten their dignity. In relation to HIV/AIDS, measures to ensure that IDUs have a voice and participate in decisions affecting them, and measures to improve their situation including harm reduction programmes and efforts to reduce the stigma and discrimination which IDUs face, are needed.

Effective partnerships between States, the components of the Movement, civil society and international aid agencies are necessary in order to build capacity and mobilize resources in response to the HIV/AIDS epidemic and in relation to IDUs to implement comprehensive harm reduction programmes and policies, including legal reform.

States and the components of the Movement should look to their commitment to action set out in the Plan of Action of the 27th International Conference in order to raise awareness of humanitarian principles and values, and actively promote tolerance, non-discrimination, non-violence and respect for diversity among all peoples.

International Federation of Red Cross and Red Crescent Societies

PROTECTING HUMAN DIGNITY

Federation news

Red Cross Red Crescent welcomes Global Fund move to tackle HIV/AIDS among injecting drug users

A decision by the Global Fund to Fight AIDS, TB and Malaria (GFATM) to finance HIV/AIDS prevention and care programmes among injecting drug users in Thailand and Russia, has been welcomed by the International Federation of Red Cross and Red Crescent Societies as a significant step in tackling the issue.

In welcoming this move, Dr Massimo Barra, a GFATM board member and veteran of the Italian Red Cross HIV/AIDS and harm reduction response, also called for more programmes that follow humanitarian and public health principles.

"The stigma attached to drug use is causing further marginalization of this most vulnerable group and this is directly impeding efforts to prevent the spread of HIV. Forcing drug-users further underground and into situations where transmission of HIV/AIDS is more likely and denying them access to life-saving treatment and prevention services, is creating a public health disaster," he said.

"This happens even though the evidence from scientific and medical research on best practices and cost benefit analyses is overwhelmingly in favour of harm reduction programming".

The International Federation sees programmes tackling the transmission of HIV/AIDS through shared needle use and the stigma and discrimination associated with it, as essential to the battle against the pandemic. Red Cross societies in Europe, including Russia, have begun such initiatives, including needle exchange and drug treatment.

The approval of the a US$ 1.38 million grant for Care Thailand and US$ 88.7 million for a non-governmental organization (NGO) consortium in Russia came at a meeting of the GFATM board in the northern Thai city of Chiang Mai. It is the first time that the Global Fund has backed harm reduction efforts in South East Asia, parts of which are witnessing an HIV/AIDS epidemic fuelled by injecting drug use.

Injecting drug user groups and NGO's have participated in efforts to develop country specific programmes for Global Fund financing around the world, but have found it difficult to convince some Ministries of the need for programmes to tackle HIV transmission through needle sharing. This despite injecting drug use being the main factor in the HIV/AIDS epidemic in areas such as Eastern Europe.

The grants to Thailand and Russia was one piece of positive news emerging from this latest GFATM board meeting. The Fund is still dramatically short of money promised by rich countries to scale up the HIV/AIDS battle as agreed at a special UN General Assembly (UNGASS) two years ago in New York. In this funding round, fewer people will be given access to anti-retroviral treatment through Global Fund money than on previous funding rounds, particularly in Africa. This despite global targets to increase the number of people with access to HIV/AIDS treatment.

"This is just not good enough. The Fund should be growing – not shrinking," said Bernard Gardiner, manager of the International Federation's global HIV/AIDS programme. "At UNGASS, all countries agreed to specific objectives to stop HIV/AIDS. It is not only time to honour those promises to keep people alive, but imperative to do so."

MINUTE

ADOPTED AT THE CONFERENCE

April 4, 1919

We are assembled at the invitation of the *Committee of Red Cross Societies* to assist in the task for which that Committee was constituted, namely : « To formulate and propose to the Red Cross societies of the world an extended program of Red Cross activities in the interest of humanity. » In addressing ourselves to this task we desire to express our belief that while every measure should be taken to repair the ravages of war and to prevent all wars, it is no less important that the world should address itself to the prevention and amel oration of those ever present tragedies of unnecessary sickness and death which occur in the homes of all peoples.

This world-wide prevalence of disease and suffering is in considerable measure due to causes which science has not yet disclosed, but a great part of it is due to wide-spread ignorance and lack of application of well-established facts and methods capable either of largely restricting disease or of preventing it altogether.

It is clear that it is most important to the future progress and security of civilization that intelligent steps be taken to instruct the peoples of the world in the observance of those principles and practices which will contribute to their health and welfare.

In the accomplishment of these great aims it is of supreme consequence that the results of the studies and researches of science should be made available to the whole world; that high standards of practice and proficiency in the prevention of disease and preservation of health should be promoted and supported by an intelligent and educated public opinion; and that effective measures should be taken in every country to secure the utmost co-operation between the people at large and all well directed agencies engaged in the promotion of health.

We have carefully considered the general purpose of the *Committee of Red Cross Societies*, whereby it is proposed to utilize a central organization which shall stimulate and co-ordinate the voluntary efforts of the peoples of the world through their respective Red Cross Societies; which shall assist in promoting the development of sound measures for public health and sanitation, the welfare of children and mothers, the education and training of nurses, the control of tuberculosis, venereal diseases, malaria, and other infectious and preventable diseases; and which shall endeavor to spread the light of science and the warmth of human sympathy into every corner of the world and shall invoke in behalf of the broadest humanity not alone the results of science but the daily efforts of men and women of every country, every religion, and every race.

We believe that the plans now being developed should at the earliest practicable moment be put into effect and placed at the disposal of the world. In no way can this be done so effectively as through the agency of the Red Cross, hitherto largely representing a movement for ameliorating the conditions of war but now surrounded by a new sentiment and the wide support and confidence of the peoples of the world equipping it to promote effective measures for human betterment under conditions of peace.

We are confident that this movement, assured as it is at the outset of the moral support of civilization, has in it great possibilities of adding immeasurably to the happines and welfare of mankind.

Minutes adopted at the Cannes medical comference, April 1919.

The Fundamental Principles of the International Red Cross and Red Crescent Movement

Humanity

The International Red Cross and Red Crescent Movement, born of a desire to bring assistance without discrimination to the wounded on the battlefield, endeavours, in its international and national capacity, to prevent and alleviate human suffering wherever it may be found. Its purpose is to protect life and health and to ensure respect for the human being. It promotes mutual understanding, friendship, cooperation and lasting peace amongst all peoples.

Impartiality

It makes no discrimination as to nationality, race, religious beliefs, class or political opinions. It endeavours to relieve the suffering of individuals, being guided solely by their needs, and to give priority to the most urgent cases of distress.

Neutrality

In order to enjoy the confidence of all, the Movement may not take sides in hostilities or engage in controversies of a political, racial, religious or ideological nature.

Independence

The Movement is independent. The National Societies, while auxiliaries in the humanitarian services of their governments and subject to the laws of their respective countries, must always maintain their autonomy so that they may be able at all times to act in accordance with the principles of the Movement.

Voluntary Service

It is a voluntary relief movement not prompted in any manner by desire for gain.

Unity

There can be only one Red Cross or Red Crescent Society in any one country. It must be open to all. It must carry on its humanitarian work throughout its territory.

Universality

The International Red Cross and Red Crescent Movement, in which all societies have equal status and share equal responsibilities and duties in helping each other, is worldwide.

The *International Federation of Red Cross and Red Crescent Societies* promotes the humanitarian activities of National Societies among vulnerable people.

By coordinating international disaster relief and encouraging development support it seeks to prevent and alleviate human suffering.

The Federation, the National Societies and the International Committee of the Red Cross together constitute the International Red Cross and Red Crescent Movement.

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DRUGS OF ABUSE

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FROM THE DEA

We are pleased to introduce the 2005 edition of *Drugs of Abuse*. This DEA magazine delivers clear, scientific information about drugs in a factual, straightforward way, combined with scores of precise photographs shot to scale. We believe that *Drugs of Abuse* fulfills an important educational need in our society.

Around the world and across the nation, the dedicated men and women of the DEA are working hard to investigate and arrest the traffickers of the dangerous drugs depicted in this magazine. They help keep our schools and neighborhoods safe and secure. But just as important, they are working hard to educate America's youth, their parents, and their teachers about the very real dangers of illegal drugs. *Drugs of Abuse* magazine is an important step in that direction. For additional information about drugs, we invite you to explore our web site at: www.dea.gov, where you will find a wealth of research and drug-related news.

Finally, we would like to express our appreciation to the United States National Guard (USNG) and the National Drug Intelligence Center (NDIC) for joining us as partners in the publication of this magazine.

Contents

The Controlled Substances Act

The Controlled Substances Act (CSA), Title II and Title III of the Comprehensive Drug Abuse Prevention and Control Act of 1970, is the legal foundation of the U.S. Government's fight against the abuse of drugs and other substances. This law is a consolidation of numerous laws regulating the manufacture and distribution of narcotics, stimulants, depressants, hallucinogens, anabolic steroids, and chemicals used in the illicit production of controlled substances.

Controlling Drugs or Other Substances

FORMAL SCHEDULING

The Controlled Substances Act (CSA) places all substances which were in some manner regulated under existing federal law into one of five schedules. This placement is based upon the substance's medical use, potential for abuse, and safety or dependence liability. The Act also provides a mechanism for substances to be controlled, or added to a schedule; decontrolled, or removed from control; and rescheduled or transferred from one schedule to another. The procedure for these actions is found in Section 201 of the Act (21 U.S.C. 811).

Proceedings to add, delete, or change the schedule of a drug or other substance may be initiated by the Drug Enforcement Administration (DEA), the Department of Health and Human Services (HHS), or by petition from any interested person: the manufacturer of a drug, a medical society or association, a pharmacy association, a public interest group concerned with drug abuse, a state or local government agency, or an individual citizen. When a petition is received by the DEA, the agency begins its own investigation of the drug.

The DEA also may begin an investigation of a drug at any time based upon information received from law enforcement laboratories, state and local law enforcement and regulatory agencies, or other sources of information.

Once the DEA has collected the necessary data, the DEA Administrator, by authority of the Attorney General, requests from HHS a scientific and medical evaluation and recommendation as to whether the drug or other substance should be controlled or removed from control. This request is sent to the Assistant Secretary of Health of HHS. HHS solicits information from the Commissioner of the Food and Drug Administration (FDA),

evaluations and recommendations from the National Institute on Drug Abuse, and on occasion from the scientific and medical community at large. The Assistant Secretary, by authority of the Secretary, compiles the information and transmits back to the DEA a medical and scientific evaluation regarding the drug or other substance, a recommendation as to whether the drug should be controlled, and in what schedule it should be placed.

The medical and scientific evaluations are binding on the DEA with respect to scientific and medical matters and form a part of the scheduling decision. The recommendation on the initial scheduling of a substance is binding only to the extent that if HHS recommends that the substance not be controlled, the DEA may not add it to the schedules.

Once the DEA has received the scientific and medical evaluation from HHS, the Administrator will evaluate all available data and make a final decision whether to propose that a drug or other substance should be removed or controlled and into which schedule it should be placed.

The threshold issue is whether the drug or other substance has potential for abuse. If a drug does not have a potential for abuse, it cannot be controlled. Although the term "potential for abuse" is not defined in the CSA, there is much discussion of the term in the legislative history of the Act. The following items are indicators that a drug or other substance has a potential for abuse:

(1) There is evidence that individuals are taking the drug or other substance in amounts sufficient to create a hazard to their health or to the safety of other individuals or to the community; or

(2) There is significant diversion of the drug or other substance from legitimate drug channels; or

(3) Individuals are taking the drug or other substance on their own initiative rather than on the basis of medical advice from a practitioner licensed by law to administer such drugs; or

(4) The drug is a new drug so related in its action to a drug or other substance already listed as having a potential for abuse to make it likely that the drug will have the same potential for abuse as such drugs, thus making it reasonable to assume that there may be significant diversions from legitimate channels, significant use contrary to or without medical advice, or that it has a substantial capability of creating hazards to the health of the user or to the safety of the community. Of course, evidence of actual abuse of a substance is indicative that a drug has a potential for abuse.

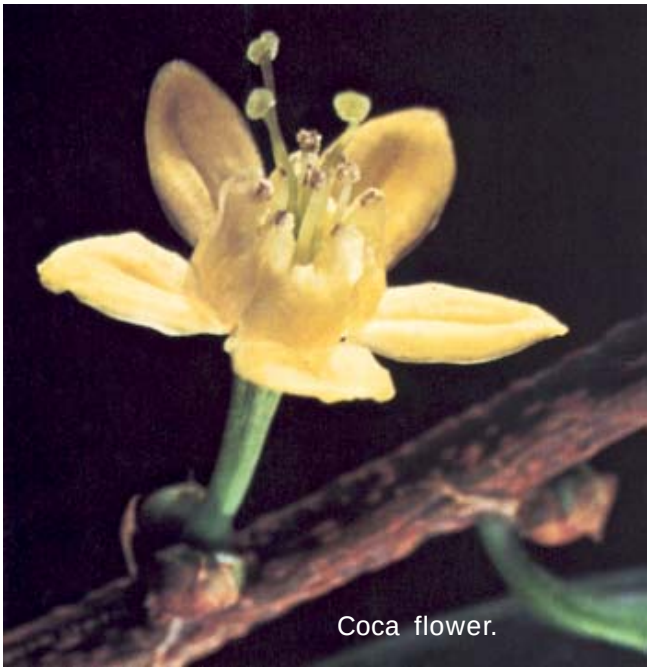
In determining into which schedule a drug or other substance should be placed, or whether a substance should be decontrolled or rescheduled, certain factors are required to be considered. Specific findings are not required for each factor. These factors are listed in Section 201 (c), [21 U.S.C. 811 (c)] of the CSA as follows:

(1) *The drug's actual or relative potential for abuse*.

(2) *Scientific evidence of the drug's pharmacological effects.* The state of knowledge with respect to the effects of a specific drug is, of course, a major consideration. For example, it is vital to know whether or not a drug has a hallucinogenic effect if it is to be controlled due to that effect. The best available knowledge of the pharmacological properties of a drug should be considered.

(3) *The state of current scientific knowledge regarding the substance.* Criteria (2) and (3) are closely related. However, (2) is primarily concerned with pharmacological effects and (3) deals with all scientific knowledge with respect to the substance.

(4) *Its history and current pattern of abuse.* To determine whether or not a drug should be controlled, it is important to know the pattern of abuse of that substance, including the socio-economic characteristics of the segments of the population involved in such abuse.



Coca flower.

(5) *The scope, duration, and significance of abuse*. In evaluating existing abuse, the DEA Administrator must know not only the pattern of abuse, but whether the abuse is widespread. In reaching a decision, the Administrator should consider the economics of regulation and enforcement attendant to such a decision. In addition, the Administrator should be aware of the social significance and impact of such a decision upon those people, especially the young, that would be affected by it.

(6) *What, if any, risk there is to the public health*. If a drug creates dangers to the public health, in addition to or because of its abuse potential, then these dangers must also be considered by the Administrator.

(7) *The drug's psychic or physiological dependence liability.* There must be an assessment of the extent to which a drug is physically addictive or psychologically habit forming, if such information is known.

(8) *Whether the substance is an immediate precursor of a substance already controlled.* The CSA allows inclusion of immediate precursors on this basis alone into the appropriate schedule and thus safeguards against possibilities of clandestine manufacture.

After considering the above listed factors, the Administrator must make specific findings concerning the drug or other substance. This will determine into which schedule the drug or other substance will be placed. These schedules are established by the CSA. They are as follows:

Schedule I

- The drug or other substance has a high potential for abuse.
- The drug or other substance has no currently accepted medical use in treatment in the United States.
- There is a lack of accepted safety for use of the drug or other substance under medical supervision.
- Examples of Schedule I substances include heroin, lysergic acid diethylamide (LSD), marijuana, and methaqualone.

Schedule II

- The drug or other substance has a high potential for abuse.
- The drug or other substance has a currently accepted medical use in treatment in the United States or a currently accepted medical use with severe restrictions.
- Abuse of the drug or other substance may lead to severe psychological or physical dependence.
- Examples of Schedule II substances include morphine, phencyclidine (PCP), cocaine, methadone, and methamphetamine.

Schedule III

- The drug or other substance has less potential for abuse than the drugs or other substances in schedules I and II.
- The drug or other substance has a currently accepted medical use in treatment in the United States.
- Abuse of the drug or other substance may lead to moderate or low physical dependence or high psychological dependence.
- Anabolic steroids, codeine and hydrocodone with aspirin or Tylenol ®, and some barbiturates are examples of Schedule III substances.

Schedule IV

- The drug or other substance has a low potential for abuse relative to the drugs or other substances in Schedule III.
- The drug or other substance has a currently accepted medical use in treatment in the United States.
- Abuse of the drug or other substance may lead to limited physical dependence or psychological dependence relative to the drugs or other substances in Schedule III.
- Examples of drugs included in schedule IV are Darvon®,Talwin®, Equanil® ,Valium ® and Xanax®.

Schedule V

- The drug or other substance has a low potential for abuse relative to the drugs or other substances in Schedule IV.
- The drug or other substance has a currently accepted medical use in treatment in the United States.
- Abuse of the drug or other substances may lead to limited physical dependence or psychological dependence relative to the drugs or other substances in Schedule IV.
- Cough medicines with codeine are examples of Schedule V drugs.

When the DEA Administrator has determined that a drug or other substance should be controlled, decontrolled, or rescheduled, a proposal to take

Methamphetamine pipe.

action is published in the *Federal Register*. The proposal invites all interested persons to file comments with the DEA. Affected parties may also request a hearing with the DEA. If no hearing is requested, the DEA will evaluate all comments received and publish a final order in the *Federal Register*, controlling the drug as proposed or with modifications based upon the written comments filed. This order will set the effective dates for imposing the various requirements of the CSA.

If a hearing is requested, the DEA will enter into discussions with the party or parties requesting a hearing in an attempt to narrow the issue for litigation. If necessary, a hearing will then be held before an Administrative Law Judge. The judge will take evidence on factual issues and hear arguments on legal questions regarding the control of the drug. Depending on the scope and complexity of the issues, the hearing may be brief or quite extensive. The Administrative Law Judge, at the close of the hearing, prepares findings of fact and conclusions of law and a recommended decision which is submitted to the DEA Administrator. The DEA Administrator will review these documents, as well as the underlying material, and prepare his/her own findings of fact and conclusions of law (which may or may not be the same as those drafted by the Administrative Law Judge). The DEA Administrator then publishes a final order in the *Federal Register* either scheduling the drug or other substance or declining to do so.

Once the final order is published in the *Federal Register*, interested parties have 30 days to appeal to a U.S. Court of Appeals to challenge the order. Findings of fact by the Administrator are deemed conclusive if supported by "substantial evidence." The order imposing controls is not stayed during the appeal, however, unless so ordered by the Court.

Emergency or Temporary Scheduling

The CSA was amended by the Comprehensive Crime Control Act of 1984. This Act included a provision which allows the DEA Administrator to place a substance, on a temporary basis, into Schedule I when necessary to avoid an imminent hazard to the public safety.

This emergency scheduling authority permits the scheduling of a substance which is not currently controlled, is being abused, and is a risk to the public health while the formal rule-making procedures described in the CSA are being conducted. This emergency scheduling applies only to substances with no accepted medical use. A temporary scheduling order may be issued for one year with a possible extension of up to six months if formal scheduling procedures have been initiated. The proposal and order are published in the *Federal Register* as are the proposals and orders for formal scheduling. [21 U.S.C. 811 (h)]

Controlled Substance Analogues

A new class of substances was created by the Anti-Drug Abuse Act of 1986. Controlled substance analogues are substances which are not controlled substances, but may be found in the illicit traffic. They are structurally or pharmacologically similar to Schedule I or II controlled substances and have no legitimate medical use. A substance which meets the definition of a controlled substance analogue and is intended for human consumption is treated under the CSA as if it were a controlled substance in Schedule I.
[21U.S.C.802(32),.21U.S.C.813]

International Treaty Obligations

United States treaty obligations may require that a drug or other substance be controlled under the CSA, or rescheduled if existing controls are less stringent than those required by a treaty. The procedures for these scheduling actions are found in Section 201 (d) of the Act. [21 U.S.C. 811 (d)]

The United States is a party to the Single Convention on Narcotic Drugs of 1961, designed to establish effective control over international and domestic traffic in narcotics, coca leaf, cocaine, and cannabis. A second treaty, the Convention on Psychotropic Substances of 1971, which entered into force in 1976, is designed to establish comparable control over stimulants, depressants, and hallucinogens. Congress ratified this treaty in 1980.

REGULATION

The CSA creates a closed system of distribution for those authorized to handle controlled substances. The cornerstone of this system is the registration of all those authorized by DEA to handle controlled substances. All individuals and firms that are registered are required to maintain complete and accurate inventories and records of all transactions involving controlled substances, as well as security for the storage of controlled substances.

Registration

Any person who handles or intends to handle controlled substances must obtain a registration issued by DEA. A unique number is assigned to each legitimate handler of controlled drugs: importer, exporter, manufacturer, distributor, hospital, pharmacy, practitioner, and researcher. This number must be made available to the supplier by the customer prior to the purchase of a controlled substance. Thus, the opportunity for unauthorized transactions is greatly diminished.

Recordkeeping

The CSA requires that complete and accurate records be kept of all quantities of controlled substances manufactured, purchased, and sold. Each substance must be inventoried every two years. Some limited exceptions to the record-keeping requirements may apply to certain categories of registrants.

From these records it is possible to trace the flow of any drug from the time it is first imported or manufactured, through the distribution level, to the pharmacy or hospital that dispensed it, and then to the actual patient who received the drug. The mere existence of this requirement is sufficient to discourage many forms of diversion. It actually serves large drug corporations as an internal check to uncover diversion, such as pilferage by employees.

There is one distinction between scheduled items for record keeping requirements. Records for Schedule I and II drugs must be kept separate from all other records of the handler; records for Schedule III, IV, and V substances must be kept in a "readily retrievable" form. The former method allows for more expeditious investigations involving the highly abusable substances in Schedules I and II.

Distribution

The keeping of records is required for distribution of a controlled substance from one manufacturer to another, from manufacturer to distributor, and from distributor to dispenser. In the case of Schedule I and II drugs, the supplier must have a special order form from the customer. This order form (DEA Form 222) is issued by DEA only to persons who are properly registered to handle Schedules I and II. The form is preprinted with the name and address of the customer. The drugs must be shipped to this name and address. The use of this device is a special reinforcement of the registration requirement; it ensures that only authorized individuals may obtain Schedule I and II drugs.

Another benefit of the form is the special monitoring it permits. The form is issued in triplicate: the customer keeps one copy; two copies go to the supplier who, after filling the order, keeps a copy and forwards the third copy to the nearest DEA office. For drugs in Schedules III,IV, and V, no order form is necessary. The supplier in each case, however, is under an obligation to verify the authenticity of the customer. The supplier is held fully accountable for any drugs which are shipped to a purchaser who does not have a valid registration. Manufacturers must submit periodic reports of the Schedule I and II controlled substances they produce in bulk and dosage forms. They also report the manufactured quantity and form of each narcotic substance listed in Schedules III, IV, and V, as well as the quantity of synthesized psychotropic substances listed in Schedules I, II, III, and IV. Distributors of controlled substances must report the quantity and form of all their transactions of controlled drugs listed in Schedules I and II and narcotics listed in Schedule III. Both manufacturers and distributors are required to provide reports of their annual inventories of these controlled substances. This data is entered into a system called the Automated Reports and Consolidated Orders System (ARCOS). It enables the DEA to monitor the distribution of controlled substances throughout the country, and to identify retail level registrants that receive unusual quantities of controlled substances.

Dispensing to Patients

The dispensing of a controlled substance is the delivery of the controlled substance to the ultimate user, who may be a patient or research subject. Special control mechanisms operate here as well. Schedule I drugs are those which have no currently accepted medical use in the United States; they may, therefore, be used in the United States only in research situations. They generally are supplied by only a limited number of firms to properly registered and qualified researchers. Controlled substances may be dispensed by a practitioner by direct administration, by prescription, or by dispensing from office supplies.

Because of successful marijuana eradication efforts by law enforcement, many illicit growers cultivate the cannabis plant indoors.

Records must be maintained by the practitioner of all dispensing of controlled substances from office supplies and of certain administrations. The CSA does not require the practitioner to maintain copies of prescriptions, but certain states require the use of multiple-copy prescriptions for Schedule II and other specified controlled substances.

The determination to place drugs on prescription is within the jurisdiction of the FDA. Unlike other prescription drugs, however, controlled substances are subject to additional restrictions. Schedule II prescription orders must be written and signed by the practitioner; they may not be telephoned into the pharmacy except in an emergency. In addition, a prescription for a S+chedule II drug may not be refilled; the patient must see the practitioner again in order to obtain more drugs. For Schedule III and IV drugs, the prescription order may be either written or oral (that is, by telephone to the pharmacy). In addition, the patient may (if authorized by the practitioner) have the prescription refilled up to five times and at anytime within six months from the date the prescription was issued.

Schedule V includes some prescription drugs and many narcotic preparations, including antitussives and antidiarrheals. Even here, however, the law imposes restrictions beyond those normally required for the over-the-counter sales; for example, the patient must be at least 18 years of age, must offer some form of identification, and have his or her name entered into a special log maintained by the pharmacist as part of a special record.

Quotas

DEA limits the quantity of Schedule I and II controlled substances which may be produced in the United States in any given calendar year. By utilizing available data on sales and inventories of these controlled substances, and taking into account estimates of drug usage provided by the FDA, the DEA establishes annual aggregate production quotas for Schedule I and II controlled substances. The aggregate production quota is allocated among the various manufacturers who are registered to manufacture the specific drug. DEA also allocates the amount of bulk drug which may be procured by those companies which prepare the drug into dosage units.

Security

DEA registrants are required by regulation to maintain certain security for the storage and distribution of controlled substances. Manufacturers and distributors of Schedule I and II substances must store controlled substances in specially constructed vaults or highly rated safes, and maintain electronic security for all storage areas. Lesser physical security requirements apply to retail level registrants such as hospitals and pharmacies. All registrants are required to make every effort to ensure that controlled substances in their possession are not diverted into the illicit market. This requires operational as well as physical security. For example, registrants are responsible for ensuring that controlled substances are distributed only to other registrants that are authorized to receive them, or to legitimate patients and consumers.

PENALTIES

The CSA provides penalties for unlawful manufacturing, distribution, and dispensing of controlled substances. The penalties are basically determined by the schedule of the drug or other substance, and sometimes are specified by drug name, as in the case of marijuana. As the statute has been amended since its initial passage in 1970, the penalties have been altered by Congress. The following charts are an overview of the penalties for trafficking or unlawful distribution of controlled substances. This is not inclusive of the penalties provided under the CSA.

User Accountability / Personal Use Penalties

On November 19, 1988, Congress passed the Anti-Drug Abuse Act of 1988, P. L. 100-690. Two sections of this Act represent the U.S. Government's attempt to reduce drug abuse by dealing not just with the person who sells the illegal drug, but also with the person who buys it. The first new section is titled "User Accountability" and is codified at 21 U.S.C. § 862 and various sections of Title 42, U.S.C. The second involves "personal use amounts" of illegal drugs, and is codified at 21 U.S.C. § 844a.

User Accountability

The purpose of User Accountability is to not only make the public aware of the Federal Government's position on drug abuse, but to describe new programs intended to decrease drug abuse by holding drug abusers personally responsible for their illegal activities, and imposing civil penalties on those who violate drug laws.

It is important to remember that these penalties are in addition to the criminal penalties drug abusers are already given, and do not replace those criminal penalties.

The new User Accountability programs call for more instruction in schools, kindergarten through senior high, to educate children on the dangers of drug abuse. These programs will include participation by students, parents, teachers, local businesses and the local, state and Federal Government.

User Accountability also targets businesses interested in doing business with the Federal Government. This program requires those

businesses to maintain a drug-free workplace, principally through educating employees on the dangers of drug abuse, and by informing employees of the penalties they face if they engage in illegal drug activity on company property.

There is also a provision in the law that makes public housing projects drug-free by evicting those residents who allow their units to be used for illegal drug activity, and denies federal benefits, such as housing assistance and student loans, to individuals convicted of illegal drug activity. Depending on the offense, an individual may be prohibited from ever receiving any benefit provided by the Federal Government.

Personal Use Amounts

This section of the 1988 Act allows the government to punish minor drug offenders without giving the offender a criminal record if the offender is in possession of only a small amount of drugs. This law is designed to impact the "user" of illicit drugs, while simultaneously saving the government the costs of a full-blown criminal investigation.

Under this section, the government has the option of imposing only a civil fine on individuals possessing only a small quantity of an illegal drug. Possession of this small quantity, identified as a "personal use amount" carries a civil fine of up to $10,000.

In determining the amount of the fine in a particular case, the drug offender's income and assets will be considered. This is accomplished through an administrative proceeding rather than a criminal trial, thus reducing the exposure of the offender to the entire criminal justice system, and reducing the costs to the offender and the government.

The value of this section is that it allows the government to punish a minor drug offender, gives the drug offender the opportunity to fully redeem himself or herself, and have all public record of the proceeding destroyed. If this was the drug offender's first offense, and the offender has paid all fines, can pass a drug test, and has not been convicted of a crime after three years, the offender can request that all proceedings be dismissed.

If the proceeding is dismissed, the drug offender can lawfully say he or she had never been prosecuted, either criminally or civilly, for a drug offense.

Congress has imposed two limitations on this section's use. It may not be used if (1) the drug offender has been previously convicted of a Federal or state drug offense; or (2) the offender has already been fined twice under this section.

The cash profits (below) from illicit drug sales (left) help fund a wide variety of drug-related activities and violent crimes.

U.S. Department of Justice
Drug Enforcement Administration

Federal Trafficking Penalties

Drug Schedule	Quantity	1st Offense	2nd Offense	Quantity	1st Offense	2nd Offense
Methamphetamine Schedule II	5-49 gms pure or 50-499 gms mixture	Not less than 5 yrs and not more than 40 yrs. If death or serious injury, not less than 20 or more than life. Fine of not more than $2 million if an individual, $5 million if other than an individual.	Not less than 10 yrs and not more than life. If death or serious injury, not less than life or more than life. Fine of not more than $4 million if an individual, $10 million if other than an individual.	50 gms or more pure or 500 gms or more mixture	Not less than 10 yrs and not more than life. If death or serious injury, not less than 20 or more than life. Fine of not more than $4 million if an individual, $10 million if other than an individual.	Not less than 20 yrs and not more than life. If death or serious injury, not less than life. Fine of not more than $8 million if an individual, $20 million if other than an individual.
Heroin Schedule I	100-999 gms mixture			1 kg or more mixture		
Cocaine Schedule II	500-4,999 gms mixture			5 gms or more mixture		
Cocaine Base Schedule II	5-49 gms mixture			50 gms or more mixture		
PCP Schedule II	10-99 gms pure or 100-999 gms mixture			100 gms or more pure or 1 kg or more mixture		
LSD Schedule I	1-9 gms mixture			10 gms or more mixture	**3rd Offense or More**	
Fentanyl Schedule II	40-399 gms mixture			400 gms or more mixture	Life Imprisonment	
Fentanyl Analogue Schedule I	10-99 gms mixture			100 gms or more mixture		
Others Schedules I & II *(Includes 1 gm or more fluntrazepam and gamma hydroxybutric acid)*	Any	Not more than 20 yrs. If death or serious injury, not less than 20 yrs, not more than life. Fine of $1 million if an individual, $5 million if other than an individual.	Not more than 30 yrs. If death or serious injury, life. Fine of $2 million if an individual, $10 million if other than an individual.			
		1st Offense		**2nd Offense**		
Others Schedules III *(Includes 30 mgs - 999 mgs fluntrazepam)*	Any	Not more than 5 yrs. Fine not more than $250,000 if an individual, $1 million if other than an individual.		Not more than 10 yrs. Fine not more than $500,000 if an individual, $2 million if other than an individual.		
Others* Schedules IV *(Includes less than 30 mgs fluntrazepam)*	Any	Not more than 3 yrs. Fine not more than $250,000 if an individual, $1 million if other than an individual.		Not more than 6 yrs. Fine not more than $500,000 if an individual, $2 million if other than an individual.		
All Schedules V	Any	Not more than 1 yr. Fine not more than $100,000 if an individual, $250,000 if other than an individual.		Not more than 2 yrs. Fine not more than $200,000 if an individual, $500,000 if other than an individual.		

*Although flunitrazepam is a Schedule IV controlled substance, quantities of 30 or more milligrams of flunitrazepam are subject to greater statutory maximum penalties than the above-referenced penalties for Schedule IV controlled substances. See 21 U.S.C. §841(b)(1)(C) and (D).

U.S. Department of Justice
Drug Enforcement Administration

Federal Trafficking Penalties - Marijuana*

	Quantity	1st Offense	2nd Offense	3rd Offense
Marijuana				
	1,000 kgs or more mixture; or 1,000 or more plants	Not less than 10 years, not more than life. If death or serious injury, not less than 20 years, not more than life. Fine not more than $4 million individual, $10 million other than individual.	Not less than 20 years, not more than life. If death or serious injury, then life. Fine not more than $8 million individual, $20 million other than individual.	Life imprisonment without release.
Marijuana				
	100 kgs to 999 kgs mixture; or 100-999 plants	Not less than 5 years, not more than 40 years. If death or serious injury, not less than 20 years, not more than life. Fine not more than $2 million individual, $5 million other than individual.	Not less than 10 years, not more than life. If death or serious injury, then life. Fine not more than $4 million individual, $10 million other than individual.	

		1st Offense	2nd Offense
Marijuana **Hashish** **Hashish Oil**	50 to 99 kgs mixture 50 to 99 plants More than 10 kgs More than 1 kg	Not more than 20 years. If death or serious injury, not less than 20 years, not more than life. Fine $1 million individual, $5 million other than individual.	Not more than 30 years. If death or serious injury, then life. Fine $2 million individual, $10 million other than individual.
Marijuana **Hashish** **Hashish Oil**	Less than 50 kgs mixture 1 to 49plants 10 kgs or less 1 kg or less	Not more than 5 years. Fine not more than $250,000, $1 million other than individual.	Not more than 10 years. Fine $500,000 individual, $2 million other than individual.

*Includes Hashish and Hashish Oil

(Marijuana is a Schedule I Controlled Substance)

U.S. Department of Justice
Drug Enforcement Administration

Regulatory Requirements
Controlled Substances

	Schedule I	Schedule II	Schedule III	Schedule IV	Schedule V
Registration					
	Required	Required	Required	Required	Required
Recordkeeping					
	Separate	Separate	Readily retrievable	Readily retrievable	Readily retrievable
Distribution Restrictions					
	Orderforms	Order forms	Records required	Records required	Records required
Dispensing Limits					
	Research use only	Rx: written; no refills	Rx: written or oral; refills Note 1	Rx: written or oral; refills Note 1	OTC (Rx drugs limited to M.D.'s order)
Manufacturing Security					
	Vault/safe	Vault/safe	Secure storage area	Secure storage area	Secure storage area
Manufacturing Quotas					
	Yes	Yes	NO but some drugs limited by Schedule II	NO but some drugs limited by Schedule II	NO but some drugs limited by Schedule II
Import/Export Narcotic					
	Permit	Permit	Permit	Permit	Permit to import; declaration to export
Import/Export Non-Narcotic					
	Permit	Permit	Note 2	Declaration	Declaration
Reports to DEA by Manufacturer/Distributor Narcotic					
	Yes	Yes	Yes	Manufacturer only	Manufacturer only
Reports to DEA by Manufacturer/Distributor Non--Narcotic					
	Yes	Yes	Note 3	Note 3	No

Note 1-With medical authorization, up to 5 in 6 months.
Note 2-Permit for some drugs, declaration for others.
Note 3-Manufacturer reports required for specific drugs.

U.S. Chemical Control

The Controlled Substances Act (CSA) is the principal federal law directed at combating the illicit manufacture and distribution of controlled drugs in the United States. Since its passage in 1970, the CSA has been amended on a number of occasions. The most recent change in the scope of the CSA is the implementation of amendments and regulations regarding chemicals and equipment used in the illicit production of controlled substances. The clandestine production of drugs is dependent on the availability of chemicals necessary to accomplish the illicit activity. Most of the drugs in the illicit traffic, with the exception of marijuana, require chemicals to be produced. For example, although cocaine is produced naturally in the coca plant, large amounts of chemicals are needed to successfully extract the drug and process it for the illicit market.

The controls placed on chemicals are substantially less than those imposed on controlled drugs because most of the chemicals have legitimate industrial applications. For this reason, the term "regulated" more appropriately describes chemicals covered under the CSA as compared to the term "controlled" that is used for drugs. Several items that are regulated as chemicals under the CSA are also non-controlled ingredients in drug products lawfully marketed under the Federal Food, Drug and Cosmetic Act and are, therefore, widely available to the general public. Examples of these products include over-the-counter (OTC) medications containing ephedrine and pseudoephedrine.

DEA chemical control was initiated in the United States with the passage of the Chemical Diversion and Trafficking Act of 1988 (CDTA) that became effective on August 1, 1989. The initial legislation was drafted in 1985. The CDTA regulated 12 precursor chemicals, eight essential chemicals, tableting machines, and encapsulating machines by imposing record keeping and import/export reporting requirements on transactions involving these materials. U.S. companies were the main source of tons of chemicals used in the production of cocaine in the Andean countries of South America prior to 1985. The principal chemicals used in the production of cocaine at that time included acetone, methyl ethyl ketone, methyl isobutyl ketone, ethyl ether, potassium permanganate, hydrochloric acid and sulfuric acid. Soon after the CDTA became effective, the quantity of many of these chemicals exported from the United States declined significantly.

Cocaine traffickers reacted to the reduction in the availability of U.S. chemicals for illicit production by developing new sources of supply in other parts of the world. The U.S. Government, with the leadership and assistance of the DEA, responded by eliciting the support of the international community for worldwide chemical control. The international community responded by incorporating Article 12 into the U.N. Convention Against Illicit Drug Traffic of 1988. Article 12 established chemical controls on a list of 22 chemicals used in the production of heroin, cocaine, LSD, PCP, amphetamine, methamphetamine, MDMA and related drugs, and numerous other clandestinely produced drugs. Moreover, the DEA has sponsored a number of international meetings and training seminars to educate other nations in the benefits of chemical

control as a tool to fight drug trafficking. DEA efforts have resulted in chemical control legislation and active programs to prevent the diversion of chemicals used in the clandestine production of drugs in many nations.

The CDTA also had an initial impact on the number of clandestine methamphetamine laboratories in the United States. In the first three years after the law was passed, the number of clandestine laboratories seized by the DEA declined by 61 percent. In addition, injuries attributed to illicitly manufactured controlled substances that were reported to the Drug Abuse Warning Network (DAWN) declined by almost 60 percent during the same time period.

The provisions of the CDTA regarding bulk ephedrine and pseudoephedrine caused methamphetamine traffickers to look for other sources of the precursors. The traffickers noted that the CDTA contained an exemption for over-the-counter (OTC) products that contained regulated chemicals. They took advantage of this loophole by turning to single entity OTC ephedrine tablets and capsules whose single active ingredient was ephedrine as a source of precursor material for the illicit production of methamphetamine.

Federal legislation was passed in 1993 in response to the methamphetamine traffickers' switch to OTC ephedrine products. The legislation was the Domestic Chemical Diversion and Control Act of 1993 (DCDCA) that became effective on April 16, 1994. The DCDCA eliminated the CDTA terminology of "precursors" and "essential" for chemicals regulated under that act and replaced them with the terms "List I" and "List II" chemicals. The DCDCA also removed the exemption for OTC single entity ephedrine tablets thus closing the loophole left by the CDTA. In addition, it gave the DEA the authority to remove the exemption for any other drugs containing listed chemicals if it was shown that they were being diverted for the illicit production of controlled substances. The DCDCA required that all manufacturers, distributors, importers, and exporters of List I chemicals be registered with the DEA and that bulk manufacturers of List I and List II chemicals report on the total quantity of listed chemicals produced during the year. Record keeping and reporting requirements for transactions in single-entity ephedrine products were also imposed by the DCDCA.

Methamphetamine traffickers quickly reacted to the provisions of the DCDCA by switching to single-entity pseudoephedrine products and combination products of ephedrine. The Comprehensive Methamphetamine Control Act of 1996 (MCA) was then passed to counter the traffickers' response to the DCDCA. The MCA expanded regulatory controls on all lawfully marketed drug products containing ephedrine, pseudoephedrine, and phenylpropanolamine, and it increased penalties for the trafficking and manufacturing of methamphetamine and listed chemicals. The MCA also made it unlawful for any person to distribute a "laboratory supply" to a person who uses, or attempts to use, that "laboratory supply" to manufacture a controlled drug or listed chemicals with reckless disregard for the illegal uses to which such "laboratory supply" will be put. The Special Surveillance List was published by the Attorney General and consisted of all listed chemicals, all mixtures, and all OTC products and dietary supplements that contain listed chemicals, 28 other chemicals frequently used in the clandestine production of controlled drugs, or listed chemicals and 4 pieces of laboratory equipment commonly found at clandestine drug laboratories. Individuals who violate the "laboratory supply" provision of the MCA are subject to a maximum civil fine of $25,000. Businesses that violate the provision are subject to a maximum civil fine of $250,000.

Ready access to chemical supplies is critical to drug traffickers while they continuously look for loopholes in legislation and new methods of clandestine production routes in order to continue their illegal activity. The DEA has embraced chemical control as an important tool in reducing the availability of clandestinely produced drugs and is committed to depriving drug traffickers of the chemicals needed to manufacture illicit drugs. Currently, List I and List II of the CSA contain 38 chemicals.

Listed Chemicals regulated under the Controlled Substances Act

See 21 C.F.R. §§ 1309, 1310 and 1313 for details

Reagent = ■
Precursor = ▲
Solvent = ●

October 31, 2001

CONTROLLED SUBSTANCE PRODUCED

		Amphetamine	Cocaine	N,N-Dimethylamphetamine	Ethylamphetamine	Fentanyl & analogues	GHB	Heroin	LSD	MDA	MDE	MDMA	Methamphetamine	Methaqulone	Methcathinone	4-Methylaminorex	Phencyclidine (PCP)	Phenyl-2-propanone	THRESHOLDS DOMESTIC	THRESHOLDS IMPORTS & EXPORTS
LIST I	1. N-Acetylanthranilic acid [2]											▲							40	40
	2. Anthranilic acid [2]											▲							30	30
	3. Benzaldehyde	▲																▲	4	4
	4. Benzyl cyanide																	▲	1	1
	5. Ephedrine [3&7]										▲		▲						0	0
	6. Ergonovine [1]							▲											0.010	0.010
	7. Ergotamine [1]							▲											0.020	0.020
	8. Ethylamine [1]				▲					▲									1	1
	9. gamma-Butyrolactone (GBL)					▲													0	0
	10. Hydriodic acid										■								1.7	1.7
	11. Hypophosphorous acid [1]	■									■								0	0
	12. Isosafrole								▲	▲	▲								4	4
	13. Methylamine [1]										▲	▲							1	1
	14. 3,4-Methylenedioxyphenyl-2-propanone								▲	▲	▲								4	4
	15. N-Methylephedrine [3]			▲															1	1
	16. N-Methylpseudoephedrine [3]			▲															1	1
	17. Nitroethane	▲							▲									▲	2.5	2.5
	18. Norpseudoephedrine [3]	▲													▲				2.5	2.5
	19. Phenylacetic acid [2]																	▲	1	1
	20. Phenylpropanolamine [3&7]	▲													▲				2.5	2.5
	21. Phosphorus (Red)	■									■								0	0
	22. Phosphorus (white or yellow)	■									■								0	0
	23. Piperidine [1]															▲			0.500	0.500
	24. Piperonal								▲	▲	▲								4	4
	25. Propionic anhydride				▲														0.001	0.001
	26. Pseudoephedrine [3&7]											▲		▲					1	1
	27. Safrole								▲	▲	▲								4	4
LIST II	28. Acetic anhydride						▲						▲					▲	1,023	1,023
	29. Acetone		●				●	●	●	●	●	●							150	1,500
	30. Benzyl chloride											▲							1	4
	31. Ethyl ether	●	●			●		●	●	●	●	●	●	●		●		●	135.8	1,364
	32. Hydrochloric acid [5&6]	■	■	■	■	■		■	■	■	■	■	■	■		■			N/C	222.3
	32a. Hydrogen chloride gas [5&6]	■	■	■	■	■		■	■	■	■	■	■	■		■			0	27
	33. Iodine	■										■							0.4	N/C
	34. Methyl ethyl ketone (2-Butanone)		●				●		●	●		●							145	1,455
	35. Methyl isobutyl ketone [4]		●				●		●	●		●							N/C	1,523
	36. Potassium permanganate		■																55	500
	37. Sulfuric acid [5&6]	■	■						■	■	■	■						■	N/C	347
	38. Toluene		●			●							●			●		●	159	1,591

[1] and its salts
[2] and its salts and esters
[3] and its salts, optical isomers, and salts of optical isomers
[4] Exports only, to all Western Hemisphere except Canada
[5] Exports to all South American countries & Panama - Domestic for HCl gas
[6] Threshold for HCl acid and sulfuric acid is 50 gallons, the equivalent weight in kilograms is shown
[7] For pseudoephedrine, phenylpropanolamine and combination ephedrine drug products, see 21 USC §§ 802(39)(A)(iv), 802(45) and Historical and Statutory Notes following 21 USC § 802

on Public Law 104-237 § 401(f)

N/C = Not Controlled

KILOGRAMS

Introduction to Drug Classes

Confiscated cocaine packaged in multi-kilogram bricks.

The Controlled Substances Act (CSA) regulates five classes of drugs: narcotics, depressants, stimulants, hallucinogens, and anabolic steroids. Each class has distinguishing properties, and drugs within each class often produce similar effects. However, all controlled substances, regardless of class, share a number of common features. It is the purpose of this introduction to familiarize the reader with some of these shared features and to give definition to terms frequently associated with these drugs.

All controlled substances have abuse potential or are immediate precursors to substances with abuse potential. With the exception of anabolic steroids, controlled substances are abused to alter mood, thought, and feeling through their actions on the central nervous system (brain and spinal cord). Some of these drugs alleviate pain, anxiety, or depression. Some induce sleep and others energize. Though therapeutically useful, the "feel good" effects of these drugs contribute to their abuse. The extent to which a substance is reliably capable of producing intensely pleasurable feelings (euphoria) increases the likelihood of that substance being abused.

When drugs are used in a manner or amount inconsistent with the medical or social patterns of a culture, it is called drug abuse. In legal terms, the non-sanctioned use of substances controlled in Schedules I through V of the CSA is considered drug abuse. While legal pharmaceuticals placed under control in the CSA are prescribed and used by patients for medical treatment, the use of these same pharmaceuticals outside the scope of sound medical practice is drug abuse.

In addition to having abuse potential, most controlled substances are capable of producing dependence, either physical or psychological. Physical dependence refers to the changes that have occurred in the body after repeated use of a drug that necessitates the continued administration of the drug to prevent a withdrawal syndrome. This withdrawal syndrome can range from mildly unpleasant to life-threatening and is dependent on a number of factors. The type of withdrawal experienced is related to: the drug being used; the dose and route of administration; concurrent use of other drugs; frequency and duration of drug use; and the age, sex, health, and genetic makeup of the user. Psychological dependence refers to the perceived "need" or "craving" for a drug. Individuals who are psychologically dependent on a particular substance often feel that they cannot function without continued use of that substance. While physical dependence disappears within days or weeks after drug use stops, psychological dependence can last much longer and is one of the

primary reasons for relapse (initiation of drug use after a period of abstinence).

Contrary to common belief, physical dependence is not addiction. While addicts are usually physically dependent on the drug they are abusing, physical dependence can exist without addiction. For example, patients who take narcotics for chronic pain management or benzodiazepines to treat anxiety are likely to be physically dependent on that medication. Addiction is defined as compulsive drug-seeking behavior where acquiring and using a drug becomes the most important activity in the user's life. This definition implies a loss of control regarding drug use, and the addict will continue to use a drug despite serious medical and/or social consequences. The National Institute on Drug Abuse (NIDA) estimates that about five million Americans suffer from drug addiction.

Individuals that abuse drugs often have a preferred drug that they use, but may substitute other drugs that produce similar effects (often found in the same drug class) when they have difficulty obtaining their drug of choice. Drugs within a class are often compared with each other with terms like potency and efficacy. Potency refers to the amount of a drug that must be taken to produce a certain effect, while efficacy refers to whether or not a drug is capable of producing a given effect regardless of dose. Both the strength and the ability of a substance to produce certain effects play a role in whether that drug is selected by the drug abuser.

It is important to keep in mind that the effects produced by any drug can vary significantly and is largely dependent on the dose and route of administration. Concurrent use of other drugs can enhance or block an effect and substance abusers often take more than one drug to boost the desired effects or counter unwanted side effects. The risks associated with drug abuse cannot be accurately predicted because each user has his/her own unique sensitivity to a drug. There are a number of theories that attempt to explain these differences, and it is clear that a genetic component may predispose an individual to certain toxicities or even addictive behavior.

Youths are especially vulnerable to drug abuse. According to NIDA, young Americans engaged in extraordinary levels of illicit drug use in the last third of the twentieth century. Today, the majority of young people (about 53 percent) have used an illicit drug by the time they leave high school and about 25 percent of all seniors are current (within the past month) users. The behaviors associated with teen and preteen drug use often result in tragic consequences with untold harm to others, themselves, and their families. For example, an analysis of data from the National Household Survey on Drug Abuse indicates that youngsters between the ages of 12 and 17 who have smoked marijuana within the past year are more than twice as likely to cut class, steal, commit assault, and destroy property than are those who did not smoke marijuana. The more frequently a youth smokes marijuana, the more likely he or she is to engage in these antisocial behaviors.

In the sections that follow, each of the five classes of drugs is reviewed and various drugs within each class are profiled. Although marijuana is classified in the CSA as a hallucinogen, a separate section is dedicated to that topic. There are also a number of substances that are abused but not regulated under the CSA. Alcohol and tobacco, for example, are specifically exempt from control by the CSA. In addition, a whole group of substances called inhalants are commonly available and widely abused by children. Control of these substances under the CSA would not only impede legitimate commerce, but would likely have little effect on the abuse of these substances by youngsters. An energetic campaign aimed at educating both adults and youth about inhalants is more likely to prevent their abuse. To that end, a section is dedicated to providing information on inhalants.

Narcotics

The term "narcotic," derived from the Greek word for stupor, originally referred to a variety of substances that dulled the senses and relieved pain. Today, the term is used in a number of ways. Some individuals define narcotics as those substances that bind at opiate receptors (cellular membrane proteins activated by substances like heroin or morphine), while others refer to any illicit substance as a narcotic. In a legal context, narcotic refers to opium, opium derivatives, and their semi-synthetic substitutes. Cocaine and coca leaves, which are also classified as "narcotics" in the Controlled Substances Act (CSA), neither bind at opiate receptors, nor produce morphine-like effects and are discussed in the section on stimulants. For the purposes of this discussion, the term narcotic refers to drugs that produce morphine-like effects.

Narcotics are used therapeutically to treat pain, suppress cough, alleviate diarrhea, and induce anesthesia. Narcotics are administered in a variety of ways. Some are taken orally, transdermally (skin patches), intranasally, or injected. They are also available in suppositories, and more recently in "troches," a form of narcotics that can be sucked like candy. As drugs of abuse, they are often smoked, sniffed, or injected. Drug effects depend heavily on the dose, route of administration, and previous exposure to the drug. Aside from their medical use, narcotics produce a general sense of well-being by reducing tension, anxiety, and aggression. These effects are helpful in a therapeutic setting but contribute to their abuse.

Narcotic use is associated with a variety of unwanted effects including drowsiness, inability to concentrate, apathy, lessened physical activity, constriction of the pupils, dilation of the subcutaneous blood vessels causing flushing of the face and neck, constipation, nausea, vomiting, and most significantly, respiratory depression. As the dose is increased, the subjective, analgesic (pain relief), and toxic effect become more pronounced. Except in cases of acute intoxication, there is no loss of motor coordination or slurred speech as occurs with many depressants.

Among the hazards of illicit drug use is the ever-increasing risk of infection, disease, and overdose. Medical complications common among narcotic abusers arise primarily from adulterants found in street drugs and in the non-sterile practices of injecting. Skin, lung, and brain

abscesses, endocarditis (inflammation of the lining of the heart), hepatitis, and AIDS are commonly found among narcotic abusers. While pharmaceutical products have a known concentration and purity, clandestinely produced street drugs have unknown compositions. Since there is no simple way to determine the purity of a drug that is sold on the street, the effects of illicit narcotic use are unpredictable and can be fatal. Physical signs of narcotic overdose include constricted (pinpoint) pupils, cold clammy skin, confusion, convulsions, severe drowsiness, and respiratory depression (slow or troubled breathing). Most narcotic deaths are a result of respiratory depression.

Doctor's hypodermic syringe kit, circa 1900.

With repeated use of narcotics, tolerance and dependence develop. The development of tolerance is characterized by a shortened duration and a decreased intensity of analgesia, euphoria, and sedation, which creates the need to consume progressively larger doses to attain the desired effect. Tolerant users can consume doses far in excess of the dose they initially started with.

Chronic narcotic use is associated with physical dependence and a withdrawal or abstinence syndrome when drug use is discontinued. In general, shorter acting narcotics tend to produce shorter, more intense withdrawal symptoms, while longer acting narcotics produce a withdrawal syndrome that is protracted but less severe. Although unpleasant, withdrawal from narcotics is rarely life threatening. The withdrawal symptoms associated with heroin/morphine addiction are usually experienced shortly before the time of the next scheduled dose. Early symptoms include watery eyes, runny nose, yawning, and sweating. Restlessness, irritability, loss of appetite, nausea, tremors, and drug craving appear as the syndrome progresses. Severe depression and vomiting are common. The heart rate and blood pressure are elevated. Chills, alternating with flushing and excessive sweating, are also characteristic symptoms. Pains in the bones and muscles of the back and extremities occur, as do muscle spasms. At any point during this process, a suitable narcotic can be administered to dramatically reverse the withdrawal symptoms. Without intervention, the syndrome will run its course, and most of the overt physical symptoms will disappear within 7 to 10 days.

The psychological dependence associated with narcotic addiction is complex and protracted. Long after the physical need for the drug has passed, the addict may continue to think and talk about the use of drugs and feel strange or overwhelmed coping with daily activities without being under the influence of drugs. There is a high probability that relapse will occur after narcotic withdrawal when neither the physical environment, nor the behavioral motivators that contributed to the abuse have been altered.

There are two major patterns of narcotic abuse or dependence seen in the United States. One involves individuals whose drug use was initiated within the context of medical treatment who escalate their dose by obtaining the drug through fraudulent prescriptions and "doctor shopping" or branching out to illicit drugs. The other pattern of abuse is initiated outside the therapeutic setting with experimental or recreational use of narcotics. The majority of individuals in this category may abuse narcotics sporadically for months or even years. Although they

may not become addicts, the social, medical, and legal consequences of their behavior are very serious. Some experimental users will escalate their narcotic use and will eventually become dependent, both physically and psychologically. The younger an individual is when drug use is initiated, the more likely the drug use will progress to dependence and addiction.

Narcotics of Natural Origin

The poppy plant, *Papaver somniferum*, is the source for non-synthetic narcotics. It was grown in the Mediterranean region as early as 5000 B.C., and has since been cultivated in a number of countries throughout the world. The milky fluid that seeps from incisions in the unripe seed pod of this poppy has, since ancient times, been scraped by hand and air-dried to produce what is known as opium. A more modern method of harvesting is by the industrial poppy straw process of extracting alkaloids from the mature dried plant. The extract may be in liquid, solid, or powder form, although most poppy straw concentrate available commercially is a fine brownish powder. More than 500 tons of opium or equivalents in poppy straw concentrate are legally imported into the United States annually for legitimate medical use.

Opium

There were no legal restrictions on the importation or use of opium until the early 1900s. In the United States, the unrestricted availability of opium, the influx of opium-smoking immigrants from East Asia, and the invention of the hypodermic needle contributed to the more severe variety of compulsive drug abuse seen at the turn of the 20th century. In those days, medicines often contained opium without any warning label. Today, there are state, federal, and international laws governing the production and distribution of narcotic substances.

Although opium is used in the form of paregoric to treat diarrhea, most opium imported into the United States is broken down into its alkaloid constituents. These alkaloids are divided into two distinct chemical classes, phenanthrenes and isoquinolines. The principal phenanthrenes are morphine, codeine, and thebaine, while the isoquinolines have no significant central nervous system effects and are not regulated under the CSA.

Morphine

Morphine is the principal constituent of opium and ranges in concentration from 4 to 21 percent. Commercial opium is standardized to contain 10-percent morphine. In the United States, a small percentage of the morphine obtained from opium is used directly (about 20 tons); the remaining is converted to codeine and other derivatives (about 110 tons). Morphine is one of the most effective drugs known for the relief of severe pain and remains the standard against which new analgesics are measured. Like most narcotics, the use of morphine has increased significantly in recent years. Since 1998, there has been about a two-fold increase in the use of morphine products in the United States.

Morphine is marketed under generic and brand name products including MS-Contin®, Oramorph SR®, MSIR®, Roxanol®, Kadian®, and RMS®. Morphine is used parenterally (by injection) for preoperative sedation, as a supplement to anesthesia, and for analgesia. It is the drug of choice for relieving the pain of myocardial infarction and for its cardiovascular effects in the treatment of acute pulmonary edema. Traditionally, morphine was almost exclusively used by injection. Today, morphine is marketed in a variety of forms, including oral solutions, immediate and sustained-release tablets and capsules, suppositories, and injectable preparations. In addition, the availability of high-concentration morphine preparations (i.e., 20-mg/ml oral solutions, 25-mg/ml injectable solutions, and 200-mg sustained-release tablets) partially reflects

the use of this substance for chronic pain management in opiate-tolerant patients.

Opiate-based syrups were once popular for treating children with teething and dysentary.

Codeine

Codeine is the most widely used, naturally occurring narcotic in medical treatment in the world. This alkaloid is found in opium in concentrations ranging from 0.7 to 2.5 percent. However, most codeine used in the United States is produced from morphine. Codeine is also the starting material for the production of two other narcotics, dihydrocodeine and hydrocodone. Codeine is medically prescribed for the relief of moderate pain and cough suppression. Compared to morphine, codeine produces less analgesia, sedation, and respiratory depression, and is usually taken orally. It is made into tablets either alone (Schedule II) or in combination with aspirin or acetaminophen (i.e., Tylenol with Codeine®, Schedule III). As a cough suppressant, codeine is found in a number of liquid preparations (these products are in Schedule V). Codeine is also used to a lesser extent as an injectable solution for the treatment of pain. Codeine products are diverted from legitimate sources and are encountered on the illicit market.

Thebaine

Thebaine, a minor constituent of opium, is controlled in Schedule II of the CSA as well as under international law. Although chemically similar to both morphine and codeine, thebaine produces stimulatory rather than depressant effects. Thebaine is not used therapeutically, but is converted into a variety of substances including oxycodone, oxymorphone, nalbuphine, naloxone, naltrexone, and buprenorphine. The United States ranks first in the world in thebaine utilization.

Semi-Synthethic Narcotics

The following narcotics are among the more significant substances that have been derived from morphine, codeine, or thebaine contained in opium.

Heroin

First synthesized from morphine in 1874, heroin was not extensively used in medicine until the early 1900s. Commercial production of the new pain remedy was first started in 1898. It initially received widespread acceptance from the medical profession, and physicians remained unaware of its addiction potential for years. The first comprehensive control of heroin occurred with the Harrison Narcotic Act of 1914. Today, heroin is an illicit substance having no medical utility in the United States. It is in Schedule I of the CSA.

Four foreign source areas produce the heroin available in the United States: South America

(Colombia), Mexico, Southeast Asia (principally Burma), and Southwest Asia (principally Afghanistan). However, South America and Mexico supply most of the illicit heroin marketed in the United States. South American heroin is a high-purity powder primarily distributed to metropolitan areas on the East Coast. Heroin powder may vary in color from white to dark brown because of impurities left from the manufacturing process or the presence of additives. Mexican heroin, known as "black tar," is primarily available in the western United States. The color and consistency of black tar heroin result from the crude processing methods used to illicitly manufacture heroin in Mexico. Black tar heroin may be sticky like roofing tar or hard like coal, and its color may vary from dark brown to black.

After the opium poppy pod has been scored, the liquid opium oozes out and dries on the pod. It is collected and scraped into a ball shape.

Pure heroin is rarely sold on the street; and the retail purity of heroin for major metropolitan areas nationally averaged about 40.7 percent recently. A "bag" (slang for a small unit of heroin sold on the street) currently contains about 30 to 50 milligrams of powder, only a portion of which is heroin. The remainder could be sugar, starch, acetaminophen, procaine, benzocaine, or quinine, or any of numerous cutting agents for heroin. Traditionally, the purity of heroin in a bag ranged from 1 to 10 percent. More recently, heroin purity has ranged from about 10 to 70 percent. Black tar heroin is often sold in chunks weighing about an ounce. Its purity is generally less than South American heroin and it is most frequently smoked, or dissolved, diluted, and injected. than South American heroin and it is most frequently In the past, heroin in the United States was almost always injected, because this is the most practical and efficient way to administer low-purity heroin. However, the recent availability of higher purity heroin at relatively low cost has meant that a larger percentage of today's users are either snorting or smoking heroin, instead of injecting it. This trend was first captured in the 1999 National Household Survey on Drug Abuse, which revealed that 60 to 70 percent of people who used heroin for the first time from 1996 to 1998 never injected it. This trend has continued. Snorting or smoking heroin is more appealing to new users because it eliminates both the fear of acquiring syringe-borne diseases, such as HIV and hepatitis, as well as eliminating the social stigma attached to intravenous heroin use. Many new users of heroin mistakenly believe that smoking or snorting heroin is a safe technique for avoiding addiction. However, both the smoking and the snorting of heroin are directly linked to high incidences of dependence and addiction.

According to the 2003 National Survey on Drug Use and Health, during the latter half of the 1990s, heroin initiation rates rose to a level not reached since the 1970s. In 1974, there were an estimated 246,000 heroin initiates. Between 1988 and 1994, the annual number of new users ranged from 28,000 to 80,000. Between 1995 and 2001, the number of new heroin users was consistently greater than 100,000. Overall, approximately 3.7 million Americans reported using heroin at least once in their lifetime.

Hydromorphone

Hydromorphone (Dilaudid®) is marketed in tablets (2, 4, and 8 mg), suppositories, oral solutions, and injectable formulations. All products are in Schedule II of the CSA. Its analgesic potency is from two to eight times that of morphine, but it is shorter acting and produces more sedation than morphine. Much sought after by narcotic addicts, hydromorphone is usually obtained by the abuser through fraudulent prescriptions or theft. The tablets are often dissolved and injected as a substitute for heroin.

Oxycodone

Oxycodone is synthesized from thebaine. Like morphine and hydromorphone, oxycodone is used as an analgesic. It is effective orally and is marketed alone in 10, 20, 40, 80, and 160 mg controlled-release tablets (OxyContin®), or 5 mg immediate-release capsules (OxyIR®), or in combination products with aspirin (Percodan®) or acetaminophen (Percocet®) for the relief of pain. All oxycodone products are in Schedule II. Oxycodone is abused orally, or the tablets are crushed and sniffed or dissolved in water and injected. The use of oxycodone has increased significantly. In 1993, about 3.5 tons of oxycodone were manufactured for sale in the United States. In 2003, about 41 tons were manufactured.

Historically, oxycodone products have been popular drugs of abuse among the narcotic abusing population. In recent years, concern has grown among federal, state, and local officials about the dramatic increase in the illicit availability and abuse of OxyContin® products. These products contain large amounts of oxycodone (10 to 160 mg) in a formulation intended for slow release over about a 12-hour period.

Abusers have learned that this slow-release mechanism can be easily circumvented by crushing the tablet and swallowing, snorting, or injecting the drug product for a more rapid and intense high. The criminal activity associated with illicitly obtaining and distributing this drug, as well as serious consequences of illicit use, including addiction and fatal overdose deaths, are of epidemic proportions in some areas of the United States. In September 2004 the FDA approved the use of Palladone® (hydromorphone hydrochloride) for the management of persistent pain. This extended-release formulation could have the same risk of abuse as OxyContin®.

Samples of Oxycontin tablets.

Hydrocodone

Hydrocodone is structurally related to codeine but more closely related to morphine in its pharmacological profile. As a drug of abuse, it is equivalent to morphine with respect to subjective effects, opiate signs and symptoms, and "liking" scores. Hydrocodone is an effective cough suppressant and analgesic. It is most frequently prescribed in combination with acetaminophen (i.e., Vicoden®, Lortab®) but is also marketed in products with aspirin (Lortab ASA®), ibuprofen (Vicoprofen®) and antihistamines (Hycomine®). All products currently marketed in the US are either Schedule III combination products primarily intended for pain management or Schedule V antitussive medications often marketed in liquid formulations. The Schedule III products are currently under review at the Federal level to determine if an increase in regulatory control is warranted.

Hydrocodone products are the most frequently prescribed pharmaceutical opiates in the United States with over 111 million prescriptions dispensed in 2003. Despite their obvious utility in medical practice, hydrocodone products are among the most popular pharmaceutical drugs associated with drug diversion, trafficking, abuse, and addiction. In every geographical area in the country, the DEA has listed this drug as one of the most commonly diverted. Hydrocodone is the most frequently encountered opiate pharmaceutical in submissions of drug evidence to federal, state, and local forensic laboratories. Law enforcement has documented the diversion of millions of dosage units of hydrocodone by theft, doctor shopping, fraudulent prescriptions, bogus "call-in" prescriptions, and diversion by registrants and Internet fraud.

Hydrocodone products are associated with significant drug abuse. Hydrocodone was ranked 6th among all controlled substances in the 2002 Drug Abuse Warning Network (DAWN) emergency department (ED) data. Poison control data, DAWN medical examiner (ME) data, and other ME data indicate that hydrocodone deaths are numerous, widespread, and increasing in number. In addition, the hydrocodone acetaminophen combinations (accounting for about 80 % of all hydrocodone prescriptions) carry significant public health risk when taken in excess.

Synthetic Narcotics

In contrast to the pharmaceutical products derived from opium, synthetic narcotics are produced entirely within the laboratory. The continuing search for products that retain the analgesic properties of morphine without the consequent dangers of tolerance and dependence has yet to yield a product that is not susceptible to abuse. A number of clandestinely produced drugs, as well as drugs that have accepted medical uses, fall within this category.

Meperidine

Introduced as an analgesic in the 1930s, meperidine produces effects that are similar, but not identical, to morphine (shorter duration of action and reduced antitussive and antidiarrheal actions). Currently it is used for pre-anesthesia and the relief of moderate to severe pain, particularly in obstetrics and post-operative situations. Meperidine is available in tablets, syrups, and injectable forms under generic and brand name (Demerol®, Mepergan®, etc.) Schedule II preparations. Several analogues of meperidine have been clandestinely produced. During the clandestine synthesis of the analogue MPPP, a neurotoxic by-product (MPTP) was produced. A number of individuals who consumed the MPPP-MPTP preparation developed an irreversible Parkinsonian-like syndrome. It was later found that MPTP destroys the same neurons as those damaged in Parkinsons Disease.

Narcotics Treatment Drugs

Methadone

German scientists synthesized methadone during World War II because of a shortage of morphine. Although chemically unlike morphine or heroin, methadone produces many of the same effects. It was introduced into the United States in 1947 as an analgesic (Dolophine®). Today, methadone is primarily used for the treatment of narcotic addiction, although a growing number of prescriptions are being written for chronic pain management. It is available in oral solutions, tablets, and injectable Schedule II formulations.

Methadone's effects can last up to 24 hours, thereby permitting once-a-day oral administration in heroin detoxification and maintenance programs. High-dose methadone can block the effects of heroin, thereby discouraging the continued use of heroin by addicts in treatment. Chronic administration of methadone results in the development of tolerance and dependence. The withdrawal syndrome develops more slowly and is less severe, but more prolonged than that associated with heroin withdrawal. Ironically, methadone used to control narcotic addiction is encountered on the illicit market. Recent increases in the use of methadone for pain management have been associated with increasing numbers of overdose deaths.

Methadone 40mg

LAAM

Closely related to methadone, the synthetic compound levo alphacetylmethadol, or LAAM (ORLMM®), has an even longer duration of action (from 48 to 72 hours) than methadone, permitting a reduction in frequency of use. In 1994, it was

approved as a Schedule II treatment drug for narcotic addiction. Both methadone and LAAM have high abuse potential. Their acceptability as narcotic treatment drugs is predicated upon their ability to substitute for heroin, the long duration of action, and their mode of oral administration. Recent data regarding cardiovascular toxicity of LAAM has limited the use of this drug as a first-line therapy for addiction treatment.

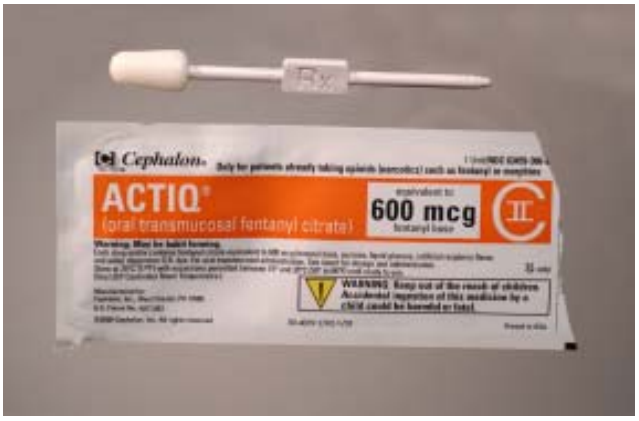
Buprenorphine

This drug is a semi-synthetic narcotic derived from thebaine. Buprenorphine was initially marketed in the United States as an analgesic (Buprenex®). In 2002, two new products (Suboxone® and Subutex®) were approved for the treatment of narcotic addiction. Like methadone and LAAM, buprenorphine is potent (30 to 50 times the analgesic potency of morphine), has a long duration of action, and does not need to be injected. Unlike the other treatment drugs, buprenorphine produces far less respiratory depression and is thought to be safer in overdose. All buprenorphine products are currently in Schedule III of the CSA.

Dextropropoxyphene

A close relative of methadone, dextropropoxyphene was first marketed in 1957 under the trade name of Darvon®. Oral analgesic potency is one-half to one-third that of codeine, with 65 mg approximately equivalent to about 600 mg of aspirin. Dextropropoxyphene is prescribed for relief of mild to moderate pain. Bulk dextropropoxyphene is in Schedule II, while preparations containing it are in Schedule IV. More than 150 tons of dextropropoxyphene are produced in the United States annually, and more than 25 million prescriptions are written for the products. This narcotic is associated with a number of toxic side effects and is among the top 10 drugs reported by medical examiners in drug abuse deaths.

Fentanyl



Fentanyl 600mcg

First synthesized in Belgium in the late 1950s, fentanyl, with an analgesic potency of about 80 times that of morphine, was introduced into medical practice in the 1960s as an intravenous anesthetic under the trade name of Sublimaze®. Thereafter, two other fentanyl analogues were introduced: alfentanil (Alfenta®), an ultra-short (5-10 minutes) acting analgesic, and sufentanil (Sufenta®), an exceptionally potent analgesic (5 to 10 times more potent than fentanyl) for use in heart surgery. Today, fentanyls are extensively used for anesthesia and analgesia. Duragesic®, for example, is a fentanyl transdermal patch used in chronic pain management, and Actiq® is a solid formulation of fentanyl citrate on a stick that dissolves slowly in the mouth for transmucosal absorption. Actiq® is intended for opiate-tolerant individuals and is effective in treating breakthrough pain in cancer patients. Carfentanil (Wildnil®) is an analogue of fentanyl with an analgesic potency 10,000 times that of morphine and is used in veterinary practice to immobilize certain large animals.

Illicit use of pharmaceutical fentanyl's first appeared in the mid-1970s in the medical community and continues to be a problem in the United States. To date, over 12 different analogues of fentanyl have been produced clandestinely and identified in the U.S. drug traffic. The biological effects of the fentanyls are indistinguishable from those of heroin, with the exception that the fentanyls may be

hundreds of times more potent. Fentanyls are most commonly used by intravenous administration, but like heroin, they may also be smoked or snorted.

Pentazocine

The effort to find an effective analgesic with less dependence-producing consequences led to the development of pentazocine (Talwin®). Introduced as an analgesic in 1967, it was frequently encountered in the illicit trade, usually in combination with tripelennamine and placed into Schedule IV of the CSA in 1979. An attempt at reducing the abuse of this drug was made with the introduction of Talwin Nx®. This product contains a quantity of antagonist (naloxone) sufficient to counteract the morphine-like effects of pentazocine if the tablets are dissolved and injected.

Butorphanol

While butorphanol can be made from thebaine, it is usually manufactured synthetically. It was initially available in injectable formulations for human (Stadol®) and veterinary (Torbugesic® and Torbutrol®) use. More recently, a nasal spray (Stadol NS®) became available, and significant diversion and abuse of this product led to the 1997 control of butorphanol in Schedule IV of the CSA. Butorphanol is a clear example of a drug gaining favor as a drug of abuse only after it became available in a form that facilitated greater ease of administration (nasal spray vs. injection).

Narcotics Identification

Trade Name: Demerol
Controlled Ingredient: meperidine hydrochloride, 100 mg

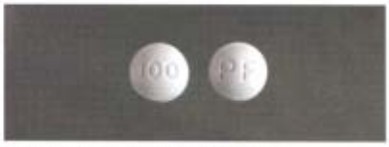
Trade Name: Demerol
Controlled Ingredient: meperidine hydrochloride, 50 mg

Trade Name: Dilaudid
Controlled Ingredient: hydromorphone hydrochloride, 2 mg

Trade Name: Dilaudid
Controlled Ingredient: hydromorphone hydrochloride, 4 mg

Trade Name: Dolophine
Controlled Ingredient: methadone hydrochloride, 10 mg

Trade Name: Generic Product
Controlled Ingredient: hydromorphone hydrochloride, 2mg



Trade Name: MS Contin
Controlled Ingredient: morphine sulfate, 100 mg

Trade Name: MS Contin
Controlled Ingredient: morphine sulfate, 15 mg

Trade Name: MS Contin
Controlled Ingredient: morphine sulfate, 30 mg

Trade Name: Oramorph SR
Controlled Ingredient: morphine sulfate, 30 mg

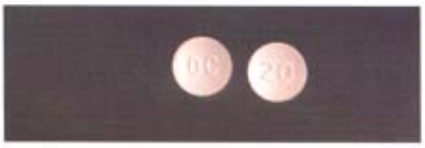
Trade Name: Oramorph SR
Controlled Ingredient: morphine sulfate, 100 mg

Trade Name: Oramorph SR
Controlled Ingredient: morphine sulfate, 60 mg

Narcotics Identification

Trade Name: OxyContin
Controlled Ingredient: oxycodone hydrochloride, 40mg

Trade Name: OxyContin
Controlled Ingredient: oxycodone hydrochloride, 160 mg



Trade Name: OxyContin
Controlled Ingredient: oxycodone hydrochloride, 20 mg

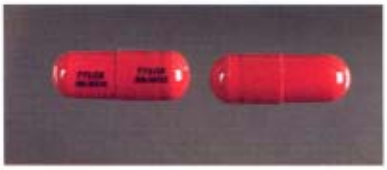
Trade Name: OxyContin
Controlled Ingredient: oxycodone hydrochloride, 80 mg

Trade Name: OxyContin
Controlled Ingredient:
oxycodone hydrochloride, 10mg

Trade Name: Percocet
Controlled Ingredient: oxycodone hydrochloride, 5 mg
Other Ingredients: Acetominophen, 325 mg

Trade Name: Percodan-Demi
Controlled Ingredient: oxycodone hydrochloride 2.25 mg and
oxycodone terephthalate 0.19 mg
Other Ingredients: aspirin, 325 mg

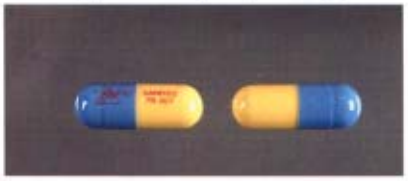
Trade Name: Percodan
Controlled Ingredient: oxycodone hydrochloride 4.5 mg and
oxycodone terephthalate 0.38 mg
Other Ingredients: aspirin, 325 mg



Trade Name: Tylox
Controlled Ingredient: oxycodone hydrochloride 4.5 mg and
oxycodone terephthalate .38 mg
Other Ingredients: Acetominophen, 500 mg

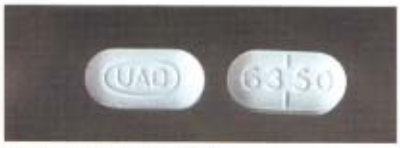
Schedule III

Trade Name: Aspirin with Codeine No. 4
Controlled Ingredient: codeine phosphate, 60 mg
Other Ingredients: aspirin, 325 mg

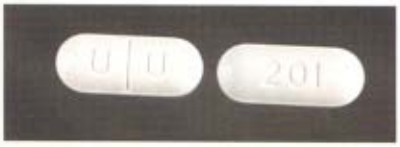


Trade Name: Fiorinal with Codeine
Controlled Ingredient: codeine phosphate 30 mg and butalbitol , 50mg
Other Ingredients: aspirin,
325 mg; caffeine, 40mg

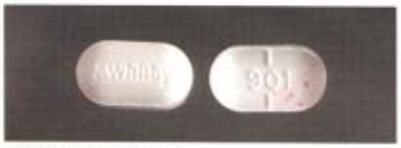
Narcotics Identification



Trade Name: Lorcet
Controlled Ingredient:
hydrocodone
bitartrate, 10 mg
Other Ingredients: acetaminophen, 650 mg



Trade Name: Lorcet Plus
Controlled Ingredient: hydrocodone
bitartrate, 7.5 mg
Other Ingredients: acetaminophen, 650 mg



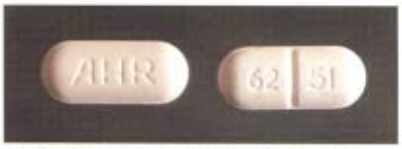
Trade Name: Lortab
Controlled Ingredient: hydrocodone
bitartrate, 2.5 mg
Other Ingredients: acetaminophen, 500 mg

Trade Name: Lortab
Controlled Ingredient: hydrocodone
bitartrate, 7.5 mg
Other Ingredients: acetominophen, 500 mg

Trade Name: Phenaphen with Codeine No. 3
Controlled Ingredient: codeine
phosphate, 30 mg
Other Ingredients: acetominophen, 325 mg

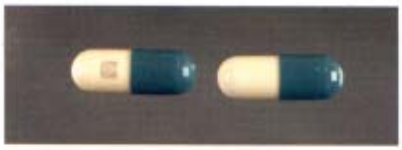
Trade Name: Phenaphen with Codeine No. 4
Controlled Ingredient: codeine
phosphate, 60 mg
Other Ingredients: acetaminophen, 325 mg

Trade Name: Phenaphen with Codeine No. 2
Controlled Ingredient: codeine
phosphate, 15 mg
Other Ingredients: acetaminophen, 325 mg



Trade Name: Phenaphen-650 with Codeine
Controlled Ingredient: codeine
phosphate, 30 mg
Other Ingredients: acetaminophen, 650 mg

Trade Name: Synalgos
Controlled Ingredient:
dihydrocodeine, 16 mg
Other Ingredients: aspirin, 356.4 mg;
caffeine, 30 mg



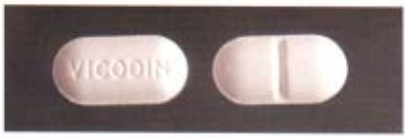
Trade Name: Tussionex
Controlled Ingredient: hydrocodone,
5 mg
Other Ingredients: phenyltoloxamine, 10 mg

Narcotics Identification

Trade Name: Tylenol with Codeine No. 2
Controlled Ingredient: codeine phosphate, 15 mg
Other Ingredients: acetominophen, 300 mg

Trade Name: Tylenol with Codeine No. 4
Controlled Ingredient: codeine phosphate, 30 mg
Other Ingredients: acetominophen, 300 mg

Trade Name: Tylenol with Codeine No. 3
Controlled Ingredient: codeine phosphate, 60 mg
Other Ingredients: acetominophen, 300 mg



Trade Name: Vicodin
Controlled Ingredient: hydrocodone bitartrate, 5 mg
Other Ingredients: acetominophen, 500 mg

Trade Name: Vicodin ES
Controlled Ingredient: hydrocodone bitartrate, 7.5 mg
Other Ingredients: acetominophen, 750 mg

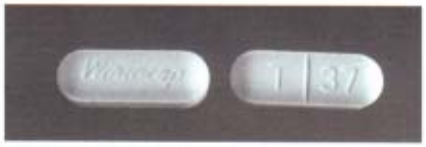
Schedule IV

Trade Name: Darvocet-N 100
Controlled Ingredient: propoxyphene napsylate, 100 mg
Other Ingredients: acetominophen, 650 mg

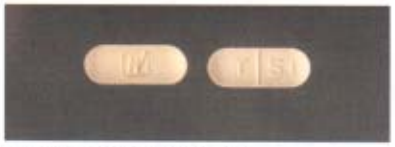
Trade Name: Darvon
Controlled Ingredient: propoxyphene hydrochloride, 65 mg

Trade Name: Darvon Compound-65
Controlled Ingredient: propoxyphene hydrochloride, 65 mg
Other Ingredients: aspirin, 389 mg; caffeine, 32.4 mg

Trade Name: Darvon-N
Controlled Ingredient: propoxyphene napsylate, 100 mg



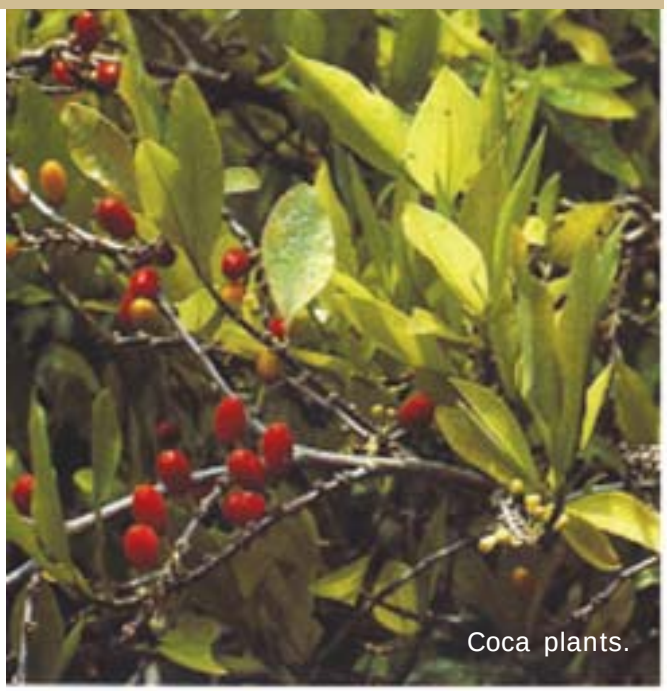
Trade Name: Talacen
Controlled Ingredient: pentazocine hydrochloride, 50 mg
Other Ingredients: acetaminophen, 650 mg



Trade Name: Talwin Nx
Controlled Ingredient: pentazocine hydrochloride, 50 mg
Other Ingredients: naloxone hydrochloride, 0.5 mg

Trade Name: Wygesic
Controlled Ingredient: propoxyphene hydrochloride, 65 mg
Other Ingredients: acetaminophen, 650 mg

Stimulants


Coca plants.

Stimulants, sometimes referred to as "uppers," reverse the effects of fatigue on both mental and physical tasks. Two commonly used stimulants are nicotine, which is found in tobacco products, and caffeine, an active ingredient in coffee, tea, some soft drinks, and many non-prescription medicines. Used in moderation, these substances tend to relieve malaise and increase alertness. Although the use of these products has been an accepted part of U.S. culture, the recognition of their adverse effects has resulted in a proliferation of caffeine-free products and efforts to discourage cigarette smoking.

A number of stimulants, however, are under the regulatory control of the CSA. Some of these controlled substances are available by prescription for legitimate medical use in the treatment of obesity, narcolepsy, and attention deficit disorders. As drugs of abuse, stimulants are frequently taken to produce a sense of exhilaration, enhance self esteem, improve mental and physical performance, increase activity, reduce appetite, produce prolonged wakefulness, and to "get high." They are among the most potent agents of reward and reinforcement that underlie the problem of dependence.

Stimulants are diverted from legitimate channels and clandestinely manufactured exclusively for the illicit market. They are taken orally, sniffed, smoked, and injected. Smoking, snorting, or injecting stimulants produce a sudden sensation known as a "rush" or a "flash." Abuse is often associated with a pattern of binge use--sporadically consuming large doses of stimulants over a short period of time. Heavy users may inject themselves every few hours, continuing until they have depleted their drug supply or reached a point of delirium, psychosis, and physical exhaustion. During this period of heavy use, all other interests become secondary to recreating the initial euphoric rush. Tolerance can develop rapidly, and both physical and psychological dependence occur. Abrupt cessation, even after a brief two- or three-day binge, is commonly followed by depression, anxiety, drug craving, and extreme fatigue known as a "crash."

Therapeutic levels of stimulants can produce exhilaration, extended wakefulness, and loss of appetite. These effects are greatly intensified when large doses of stimulants are taken. Physical side

effects, including dizziness, tremor, headache, flushed skin, chest pain with palpitations, excessive sweating, vomiting, and abdominal cramps, may occur as a result of taking too large a dose at one time or taking large doses over an extended period of time. Psychological effects include agitation, hostility, panic, aggression, and suicidal or homicidal tendencies. Paranoia, sometimes accompanied by both auditory and visual hallucinations, may also occur. Overdose is often associated with high fever, convulsions, and cardiovascular collapse. Because accidental death is partially due to the effects of stimulants on the body's cardiovascular and temperature-regulating systems, physical exertion increases the hazards of stimulant use.

Cocaine

Cocaine, the most potent stimulant of natural origin, is extracted from the leaves of the coca plant *(Erythroxylum coca)*, which is indigenous to the Andean highlands of South America. Natives in this region chew or brew coca leaves into a tea for refreshment and to relieve fatigue, similar to the customs of chewing tobacco and drinking tea or coffee.

Pure cocaine was first isolated in the 1880s and used as a local anesthetic in eye surgery. It was particularly useful in surgery of the nose and throat because of its ability to provide anesthesia, as well as to constrict blood vessels and limit bleeding. Many of its therapeutic applications are now obsolete due to the development of safer drugs.

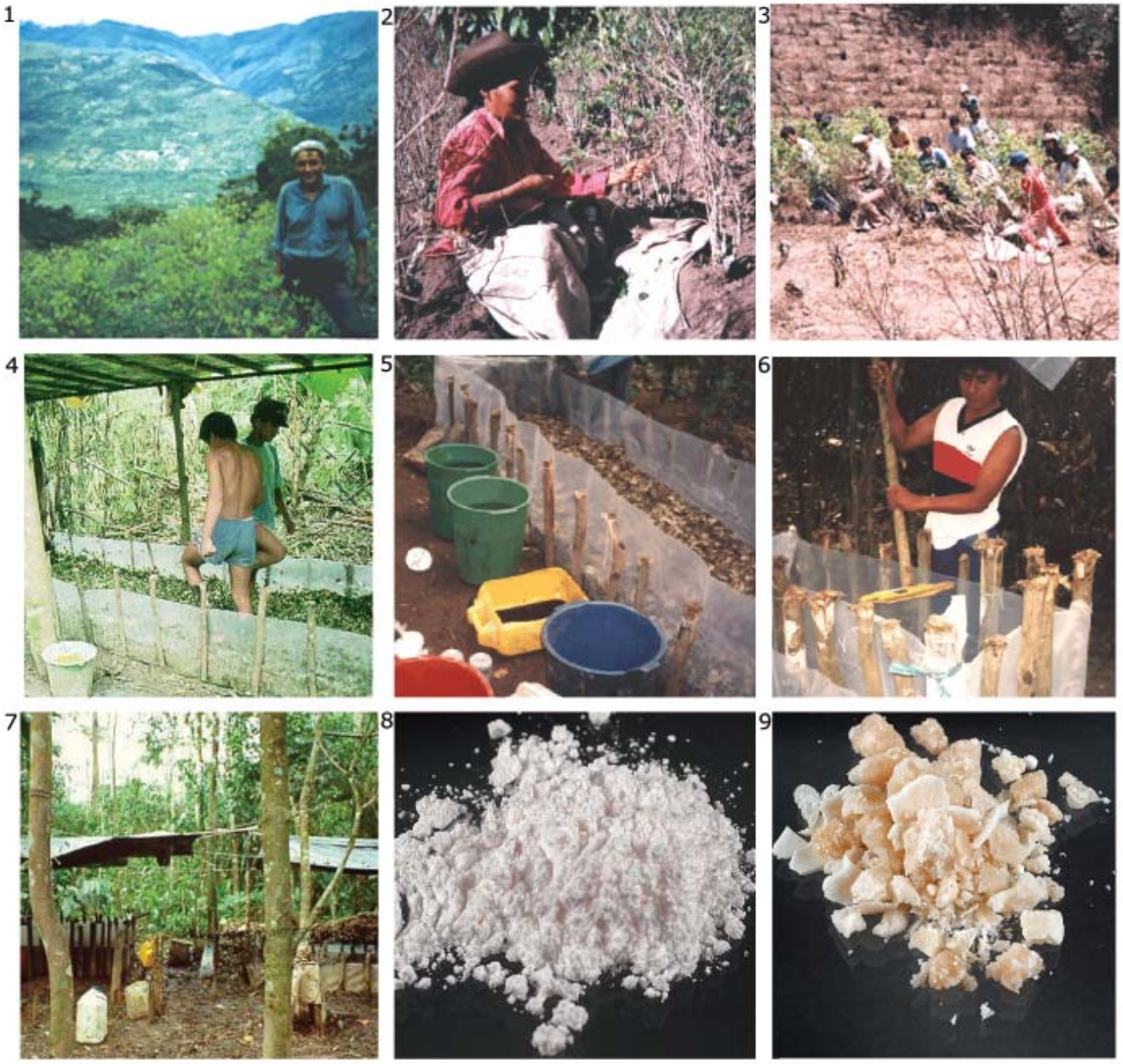
Illicit cocaine is usually distributed as a white crystalline powder or as an off-white chunky material. The powder, usually cocaine hydrochloride, is often diluted with a variety of substances, the most common being sugars such as lactose, inositol, and mannitol, and local anesthetics such as lidocaine. The adulteration increases the volume and thus multiplies profits. Cocaine hydrochloride is generally snorted or dissolved in water and injected. It is rarely smoked because it is heat labile (destroyed by high temperatures).

Paraphernalia used for smoking crack cocaine.

"Crack," the chunk or "rock" form of cocaine, is a ready-to-use freebase. On the illicit market, it is sold in small, inexpensive dosage units that are smoked. Smoking delivers large quantities of cocaine to the lungs, producing effects comparable to intravenous injection. Drug effects are felt almost immediately, are very intense, and are quickly over. Once introduced in the mid-1980s, crack abuse spread rapidly and made the cocaine experience available to anyone with $10 and access to a dealer. In addition to other toxicities associated with cocaine abuse, cocaine smokers suffer from acute respiratory problems including cough, shortness of breath, and severe chest pains with lung trauma and bleeding. It is noteworthy that the emergence of crack was accompanied by a dramatic increase in drug abuse problems and drug-related violence.

The intensity of the psychological effects of cocaine, as with most psychoactive drugs, depends on the dose and rate of entry to the brain. Cocaine reaches the brain through the snorting method in three to five minutes. Intravenous injection of cocaine produces a rush in 15 to 30 seconds, and smoking produces an almost immediate intense experience. The euphoric effects of cocaine are almost indistinguishable from those of amphetamine, although they do not last as long. These intense effects can be followed by a dysphoric crash. To avoid the fatigue and the depression of coming down, frequent repeated doses are taken. Excessive doses of cocaine may lead to seizures and death from respiratory failure,

Cocaine: Cultivation to Product



1. Coca farmers, known as “campesinos,” cultivate plants throughout the Andean region of South America.
2. Depending on the method and variety of coca used, coca plants may take up to two years to mature fully.
3. Once harvested, coca leaves are sometimes allowed to dry in the sun to keep the leaves from rotting.
4. Cocaine base processors stomp the coca leaves to macerate the leaves and help extract desired alkaloids.
5. The solution is transferred by bucket to a second plastic lined pit, where lime or cement is added.
6. Gasoline is then added to the basic solution and mixed.
7. Cocaine hydrochloride (HCl) is produced through further refining and processing the cocaine base.
8. Cocaine HCl is the final product exported from South America.
9. Crack cocaine is made in the U.S. from several basic household products and cocaine HCl.

stroke, or heart failure. There is no specific antidote for cocaine overdose.

Cocaine is the second most commonly used illicit drug (following marijuana) in the United States. According to the 2003 National Survey on Drug Use and Health, more than 34 million Americans (14.7%) age 12 or older had used cocaine at least once in their lifetime. There are no drugs approved for replacement-pharmacotherapy (drugs taken on a chronic basis as a substitute for the abused drug, like methadone for heroin addiction). Cocaine addiction treatment relies heavily on psychotherapy and drugs like antidepressants to relieve some of the effects of cocaine abuse.

Amphetamines

Amphetamine, dextroamphetamine, methamphetamine, and their various salts, are collectively referred to as amphetamines. In fact, their chemical properties and actions are so similar that even experienced users have difficulty knowing which drug they have taken.

Amphetamine was first marketed in the 1930s as Benzedrine® in an over-the-counter inhaler to treat nasal congestion. By 1937, amphetamine was available by prescription in tablet form and was used in the treatment of the sleeping disorder, narcolepsy, and the behavioral syndrome called minimal brain dysfunction, which today is called attention deficit hyperactivity disorder (ADHD). During World War II, amphetamine was widely used to keep the fighting men going and both dextroamphetamine (Dexedrine®) and methamphetamine (Methedrine®) were readily available.

As use of amphetamines spread, so did their abuse. In the 1960s, amphetamines became a perceived remedy for helping truckers to complete their long routes without falling asleep, for weight control, for helping athletes to perform better and train longer, and for treating mild depression. Intravenous amphetamines, primarily methamphetamine, were abused by a subculture known as "speed freaks." With experience, it became evident that the dangers of abuse of these drugs outweighed most of their therapeutic uses.

Increased control measures were initiated in 1965 with amendments to the federal food and drug laws to curb the black market in amphetamines. Many pharmaceutical amphetamine products were removed from the market including all injectable formulations, and doctors prescribed those that remained less freely. Recent increases in medical use of these drugs can be attributed to their use in the treatment of ADHD. Amphetamine products presently marketed include generic and brand name amphetamine (Adderall®, Dexedrine®, Dextrostat®) and brand name methamphetamine (Desoxyn®). Amphetamines are all controlled in Schedule II of the CSA.

DEA Special Agents and chemists conduct a raid on a clandestine methamphetamine lab.

To meet the ever-increasing black market demand for amphetamines, clandestine laboratory production has mushroomed. Today, most amphetamines distributed to the black market are produced in clandestine laboratories. Methamphetamine laboratories are, by far, the most frequently encountered clandestine laboratories in the United States. The ease of clandestine synthesis, combined with tremendous profits, has resulted in significant availability of illicit methamphetamine, especially on the West Coast, where abuse of this drug has increased dramatically in recent years. Large amounts of on the illicit

methamphetamine are also illicitly smuggled into the United States from Mexico.

Amphetamines are generally taken orally or injected. However, the addition of "ice," the slang name for crystallized methamphetamine hydrochloride, has promoted smoking as another mode of administration. Just as "crack" is smokable cocaine, "ice" is smokable methamphetamine. Methamphetamine, in all its forms, is highly addictive and toxic.

The effects of amphetamines, especially methamphetamine, are similar to cocaine, but their onset is slower and their duration is longer. In contrast to cocaine, which is quickly removed from the brain and is almost completely metabolized, methamphetamine remains in the central nervous system longer, and a larger percentage of the drug remains unchanged in the body, producing prolonged stimulant effects. Chronic abuse produces a psychosis that resembles schizophrenia and is characterized by paranoia, picking at the skin, preoccupation with one's own thoughts, and auditory and visual hallucinations. These psychotic symptoms can persist for months and even years after use of these drugs has ceased and may be related to their neurotoxic effects. Violent and erratic behavior is frequently seen among chronic abusers of amphetamines, especially methamphetamine.

Methcathinone

Methcathinone, known on the streets as "Cat," is a structural analogue of methamphetamine and cathinone. Clandestinely manufactured, methcathinone is almost exclusively sold in the stable and highly water soluble hydrochloride salt form. It is most commonly snorted, although it can be taken orally by mixing it with a beverage or diluted in water and injected intravenously. Methcathinone has an abuse potential equivalent to methamphetamine and produces amphetamine-like effects. It was placed in Schedule I of the CSA in 1993.

Methylphenidate

Methylphenidate, a Schedule II substance, has a high potential for abuse and produces many of the same effects as cocaine and the amphetamines. The abuse of this substance has been documented among narcotic addicts who dissolve the tablets in water and inject the mixture. Complications arising from this practice are common due to the insoluble fillers used in the tablets. When injected, these materials block small blood vessels, causing serious damage to the lungs and retina of the eye. Binge use, psychotic episodes, cardiovascular complications, and severe psychological addiction have all been associated with methylphenidate abuse.

Methylphenidate is used legitimately in the treatment of excessive daytime sleepiness associated with narcolepsy, as is the newly marketed Schedule IV stimulant, modafinil (Provigil®). However, the primary legitimate medical use of methylphenidate (Ritalin®, Methylin®, Concerta®) is to treat attention deficit hyperactivity disorder (ADHD) in children. The increased use of this substance for the treatment of ADHD has paralleled an increase in its abuse among adolescents and young adults who crush these tablets and snort the powder to get high. Abusers have little difficulty obtaining methylphenidate from classmates or friends who have been prescribed it.

Anorectic Drugs

A number of drugs have been developed and marketed to replace amphetamines as appetite suppressants. These anorectic drugs include benzphetamine (Didrex®), diethylproprion (Tenuate®, Tepanil®), mazindol (Sanorex®, Mazanor®), phendimetrazine (Bontril®, Prelu-27®), and phentermine (Lonamin®, Fastin®, Adipex®). These substances are in Schedule III or IV of the CSA and produce some amphetamine-like effects. Of these diet pills, phentermine is the most widely prescribed and most frequently encountered

market. Two Schedule IV anorectics often used in combination with phentermine, fenfluramine and dexfenfluramine, were removed from the U.S. market because they were associated heart valve problems.

Khat

For centuries, khat, the fresh young leaves of the *Catha edulis* shrub, has been consumed where the plant is cultivated, primarily East Africa and the Arabian Peninsula. There, chewing khat predates the use of coffee and is used in a similar social context. Chewed in moderation, khat alleviates fatigue and reduces appetite. Compulsive use may result in manic behavior with grandiose delusions or in a paranoid type of illness, sometimes accompanied by hallucinations. Khat has been smuggled into the United States and other countries from the source countries for use by emigrants. It contains a number of chemicals, among which are two controlled substances, cathinone (Schedule I) and cathine (Schedule IV). As the leaves mature or dry, cathinone is converted to cathine, which significantly reduces its stimulatory properties.

Harvested Khat plants.

Stimulants Identification

Schedule II

Trade Name: Biphetamine 12 1/2
Controlled Ingredients: dl-amphetamine, 6.25 mg ; dextroamphetamine, 6.25 mg

Trade Name: Biphetamine 20
Controlled Ingredients: dl-amphetamine, 10 mg; dextroamphetamine, 10 mg

Trade Name: Dexedrine
Controlled Ingredients: dextroamphetamine sulfate, 10 mg

Trade Name: Dexedrine
Controlled Ingredients: dextroamphetamine sulfate, 15 mg

Trade Name: Dexedrine Spansule
Controlled Ingredients: dextroamphetamine sulfate, 5 mg

Trade Name: Desoxyn
Controlled Ingredients: methamphetamine hydrochlorate, 5 mg

Trade Name: Desoxyn Gradumet
Controlled Ingredients: methamphetamine hydrochlorate, 5 mg

Trade Name: Desoxyn Gradumet
Controlled Ingredients: methamphetamine hydrochlorate, 10 mg

Trade Name: Desoxyn Gradumet
Controlled Ingredients: methamphetamine hydrochlorate, 15 mg

Trade Name: Methylphenidate Hydrochloride
Controlled Ingredients: methylphenidate hydrochloride, 10 mg

Trade Name: Methylphenidate Hydrochloride
Controlled Ingredients: methylphenidate hydrochloride, 20 mg

Trade Name: Ritalin
Controlled Ingredients: methylphenidate hydrochloride, 5 mg

Trade Name: Ritalin
Controlled Ingredients: methylphenidate hydrochloride, 10 mg

Trade Name: Ritalin
Controlled Ingredients: methylphenidate hydrochloride, 20 mg

Stimulants Identification

Schedule III

Trade Name: Didrex
Controlled Ingredients: benzphetamine hydrochloride, 50 mg

Trade Name: Plegine
Controlled Ingredients: phendimetrazine tartrate, 35 mg

Trade Name: Prelu-2
Controlled Ingredients: phendimetrazine tartrate, 105 mg

Schedule IV

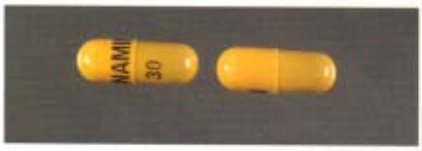
Trade Name: Adipex
Controlled Ingredients: phentermine hydrochloride, 37.5 mg

Trade Name: Tenuate
Controlled Ingredients: diethylpropion hydrochloride, 25 mg

Trade Name: Tenuate Dospan
Controlled Ingredients: diethylpropion hydrochloride, 75 mg

Trade Name: Fastin
Controlled Ingredients: phentermine hydrochloride, 30 mg

Trade Name: Ionamin
Controlled Ingredients: phentermine hydrochloride, 15 mg



Trade Name: Ionamin
Controlled Ingredients: phentermine hydrochloride, 30 mg

Trade Name: Mazanor
Controlled Ingredients: mazindol, 1.0 mg

Trade Name: Sanorex
Controlled Ingredients: mazindol, 1.0 mg

Trade Name: Sanorex
Controlled Ingredients: mazindol, 2.0 mg

Depressants

GHB is an odorless, colorless liquid or a white powder. Street names include: Liquid Ecstasy, Scoop, Easy Lay, Georgia Home Boy, Grievous Bodily Harm, Liquid X, and Goop.

Historically, people of almost every culture have used chemical agents to induce sleep, relieve stress, and allay anxiety. While alcohol is one of the oldest and most universal agents used for these purposes, hundreds of substances have been developed that produce central nervous system depression. These drugs have been referred to as downers, sedatives, hypnotics, minor tranquilizers, anxiolytics, and anti-anxiety medications. Unlike most other classes of drugs of abuse, depressants are rarely produced in clandestine laboratories. Generally, legitimate pharmaceutical products are diverted to the illicit market. A notable exception to this is a relatively recent drug of abuse, *gamma* hydroxybutyric acid (GHB).

Choral hydrate and paraldehyde are two of the oldest pharmaceutical depressants still in use today. Other depressants, including gluthethimide, methaqualone, and meprobamate have been important players in the milieu of depressant use and abuse. However, two major groups of depressants have dominated the licit and illicit market for nearly a century, first barbiturates and now benzodiazepines.

Barbiturates were very popular in the first half of the 20th century. In moderate amounts, these drugs produce a state of intoxication that is remarkably similar to alcohol intoxication. Symptoms include slurred speech, loss of motor coordination, and impaired judgment. Depending on the dose, frequency, and duration of use, one can rapidly develop tolerance, and physical and psychological dependence on barbiturates. With the development of tolerance, the margin of safety between the effective dose and the lethal dose becomes very narrow. That is, in order to obtain the same level of intoxication, the tolerant abuser may raise his or her dose to a level that may result in coma or death. Although many individuals have taken barbiturates therapeutically without harm, concern about the addiction potential of barbiturates and the ever-increasing number of fatalities associated with them led to the development of alternative medications. Today, less than 10 percent of all depressant prescriptions in the United States are for barbiturates.

Benzodiazepines were first marketed in the 1960s. Touted as much safer depressants with far less

addiction potential than barbiturates, today these drugs account for about one out of every five prescriptions for controlled substances. Although benzodiazepines produce significantly less respiratory depression than barbiturates, it is now recognized that benzodiazepines share many of the undesirable side effects of the barbiturates. A number of toxic central nervous system effects are seen with chronic high-dose benzodiazepine therapy, including headaches, irritability, confusion, memory impairment, and depression. The risk of developing over-sedation, dizziness, and confusion increases substantially with higher doses of benzodiazepines. Prolonged use can lead to physical dependence even at doses recommended for medical treatment. Unlike barbiturates, large doses of benzodiazepines are rarely fatal unless combined with other drugs or alcohol. Although primary abuse of benzodiazepines is well documented, abuse of these drugs usually occurs as part of a pattern of multiple drug abuse. For example, heroin or cocaine abusers will use benzodiazepines and other depressants to augment their "high" or alter the side effects associated with over-stimulation or narcotic withdrawal.

There are marked similarities among the withdrawal symptoms seen with most drugs classified as depressants. In the mildest form, the withdrawal syndrome may produce insomnia and anxiety, usually the same symptoms that initiated the drug use. With a greater level of dependence, tremors and weakness are also present, and in its most severe form, the withdrawal syndrome can cause seizures and delirium. Unlike the withdrawal syndrome seen with most other drugs of abuse, withdrawal from depressants can be life threatening.

Barbiturates

Barbiturates were first introduced for medical use in the early 1900s. More than 2,500 barbiturates have been synthesized, and at the height of their popularity, about 50 were marketed for human use. Today, about a dozen are in medical use. Barbiturates produce a wide spectrum of central nervous system depression, from mild sedation to coma, and have been used as sedatives, hypnotics, anesthetics, and anticonvulsants. The primary differences among many of these products are how fast they produce an effect and how long those effects last. Barbiturates are classified as ultrashort, short, intermediate, and long-acting.

The ultrashort-acting barbiturates produce anesthesia within about one minute after intravenous administration. Those in current medical use are the Schedule IV drug methohexital (Brevital®), and the Schedule III drugs thiamyl (Surital®) and thiopental (Pentothal®). Barbiturate abusers prefer the Schedule II short-acting and intermediate-acting barbiturates that include amobarbital (Amytal®), pentobarbital (Nembutal®), secobarbital (Seconal®), and Tuinal (an amobarbital/secobarbital combination product). Other short and intermediate-acting barbiturates are in Schedule III and include butalbital (Fiorina®), butabarbital (Butisol®), talbutal (Lotusate®), and aprobarbital (Alurate®). After oral administration, the onset of action is from 15 to 40 minutes, and the effects last up to six hours. These drugs are primarily used for insomnia and preoperative sedation. Veterinarians use pentobarbital for anesthesia and euthanasia.

Long-acting barbiturates include phenobarbital (Luminal®) and mephobarbital (Mebaral®), both of which are in Schedule IV. Effects of these drugs are realized in about one hour and last for about 12

hours, and are used primarily for daytime sedation and the treatment of seizure disorders.

Benzodiazepines

The benzodiazepine family of depressants is used therapeutically to produce sedation, induce sleep, relieve anxiety and muscle spasms, and to prevent seizures. In general, benzodiazepines act as hypnotics in high doses, anxiolytics in moderate doses, and sedatives in low doses. Of the drugs marketed in the United States that affect central nervous system function, benzodiazepines are among the most widely prescribed medications. Fifteen members of this group are presently marketed in the United States, and about 20 additional benzodiazepines are marketed in other countries. Benzodiazepines are controlled in Schedule IV of the CSA.

Short-acting benzodiazepines are generally used for patients with sleep-onset insomnia (difficulty falling asleep) without daytime anxiety. Shorter-acting benzodiazepines used to manage insomnia include estazolam (ProSom®), flurazepam (Dalmane®), temazepam (Restoril®), and triazolam (Halcion®). Midazolam (Versed®), a short-acting benzodiazepine, is utilized for sedation, or treating anxiety and amnesia in critical care settings and prior to anesthesia. It is available in the United States as an injectable preparation and as a syrup (primarily for pediatric patients).

Benzodiazepines with a longer duration of action are utilized to treat insomnia in patients with daytime anxiety. These benzodiazepines include alprazolam (Xanax®), chlordiazepoxide (Librium®), clorazepate (Tranxene®), diazepam (Valium®), halazepam (Paxipam®), lorzepam (Ativan®), oxazepam (Serax®), prazepam (Centrax®), and quazepam (Doral®). Clonazepam (Klonopin®), diazepam, and clorazepate are also used as anticonvulsants.

Benzodiazepines are classified in the CSA as depressants. Repeated use of large doses or, in some cases, daily use of therapeutic doses of benzodiazepines is associated with amnesia, hostility, irritability, and vivid or disturbing dreams, as well as tolerance and physical dependence. The withdrawal syndrome is similar to that of alcohol and may require hospitalization. Abrupt cessation of benzodiazepines is not recommended and tapering-down the dose eliminates many of the unpleasant symptoms.

Given the millions of prescriptions written for benzodiazepines, relatively few individuals increase their dose on their own initiative or engage in drug-seeking behavior. Those individuals who do abuse benzodiazepines often maintain their drug supply by getting prescriptions from several doctors, forging prescriptions, or buying diverted pharmaceutical products on the illicit market. Abuse is frequently associated with adolescents and young adults who take benzodiazepines to obtain a "high." This intoxicated state results in reduced inhibition and impaired judgment. Concurrent use of alcohol or other depressant with benzodiazepines can be life threatening. Abuse of benzodiazepines is particularly high among heroin and cocaine abusers. A large percentage of people entering treatment for narcotic or cocaine addiction also report abusing benzodiazepines. Alprazolam and diazepam are the two most frequently encountered benzodiazepines on the illicit market.

Flunitrazepam

Flunitrazepam (Rohypnol®) is a benzodiazepine that is not manufactured or legally marketed in the United States, but is smuggled in by traffickers. In the mid-1990s, flunitrazepam was extensively trafficked in Florida and Texas. Known as "rophies," "roofies," and "roach," flunitrazepam gained popularity among younger individuals as a "party" drug. It has also been utilized as a "date rape" drug. In this context, flunitrazepam is placed in the alcoholic drink of an unsuspecting victim to incapacitate them and prevent resistance from sexual assault. The victim is frequently unaware of what has happened to them and often does not report the incident to authorities. A number of actions by the manufacturer of this drug and by

government agencies have resulted in reducing the availability and abuse of flunitrazepam in the United States.

Gamma Hydroxybutyric Acid (GHB)

In recent years, *gamma* hydroxybutyric acid (GHB) has emerged as a significant drug of abuse throughout the United States. Abusers of this drug fall into three major groups: (1) users take GHB for its intoxicant or euphoriant effects; (2) bodybuilders who abuse GHB for its alleged utility as an anabolic agent or as a sleep aid; and (3) individuals who use GHB as a weapon for sexual assault. These categories are not mutually exclusive and an abuser may use the drug illicitly to produce several effects. GHB is frequently taken with alcohol or other drugs that heighten its effects and is often found at bars, nightclubs, rave parties, and gyms. Teenagers and young adults who frequent these establishments are the primary users. Like flunitrazepam, GHB is often referred to as a "date-rape" drug. GHB involvement in rape cases is likely to be unreported or unsubstantiated because GHB is quickly eliminated from the body making detection in body fluids unlikely. Its fast onset of depressant effects may render the victim with little memory of the details of the attack.

GHB produces a wide range of central nervous system effects, including dose-dependent drowsiness, dizziness, nausea, amnesia, visual hallucinations, hypotension, bradycardia, severe respiratory depression, and coma. The use of alcohol in combination with GHB greatly enhances its depressant effects. Overdose frequently requires emergency room care, and many GHB-related fatalities have been reported.

Gamma butyrolactone (GBL) and 1,4-butanediol are GHB analogues that can be used as substitutes for GHB. When ingested, these analogues are converted to GHB and produce identical effects. GBL is also used in the clandestine production of GHB as an immediate precursor. Both GBL and 1,4-butanediol have been sold at health food stores and on various internet sites.

The abuse of GHB began to seriously escalate in the mid-1990s. For example, in 1994, there were 55 emergency department episodes involving GHB reported in the Drug Abuse Warning Network (DAWN) system. By 2002, there were 3,330 emergency room episodes. DAWN data also indicated that most users were male, less than 25 years of age, and taking the drug orally for recreational use.

GHB was placed in Schedule I of the CSA in March 2000. *Gamma* butyrolactone (GBL) was made a List I Chemical in February 2000. GHB has recently been approved as a medication (Xyrem®) for the treatment of cataplexy associated with some types of narcolepsy. This approved medication is in Schedule III of the CSA.

Paraldehyde

Paraldehyde (Paral®) is a Schedule IV depressant used most frequently in hospital settings to treat delirium tremens associated with alcohol withdrawal. Many individuals who become addicted to paraldehyde have been initially exposed during treatment for alcoholism and, despite the disagreeable odor and taste, come to prefer it to alcohol. This drug is not used by injection because

of tissue damage, and taken orally, it can be irritating to the throat and stomach. One of the signs of paraldehyde use is a strong, characteristic smell to the breath.

Chloral Hydrate

The oldest of the hypnotic (sleep inducing, depressants, chloral hydrate was first synthesized in 1832. Marketed as syrups or soft gelatin capsules, chloral hydrate takes effect in a relatively short time (30 minutes) and will induce sleep in about an hour. A solution of chloral hydrate and alcohol constituted the infamous "knockout drops" or "Mickey Finn." At therapeutic doses, chloral hydrate has little effect on respiration and blood pressure; however, a toxic dose produces severe respiratory depression and very low blood pressure. Chronic use is associated with liver damage and a severe withdrawal syndrome. Although some physicians consider chloral hydrate to be the drug of choice for sedation of children before diagnostic, dental, or medical procedures, its general use as a hypnotic has declined. Chloral hydrate, Noctec®, and other compounds, preparations, or mixtures containing choral hydrate are in Schedule IV of the CSA.

Glutethimide and Methaqualone

Glutethimide (Doriden®) was introduced in 1954 and methaqualone (Quaalude®, Sopor®) in 1965 as safe barbiturate substitutes. Experience demonstrated, however, that their addiction liability and the severity of withdrawal symptoms were similar to those of barbiturates. By 1972, "luding out," taking methaqualone with wine, was a popular college pastime. Excessive use leads to tolerance, dependence, and withdrawal symptoms similar to those of barbiturates. In the United States, the marketing of methaqualone pharmaceutical products stopped in 1984, and methaqualone was transferred to Schedule I of the CSA. In 1991, glutethimide was transferred into Schedule II in response to an upsurge in the prevalence of diversion, abuse, and overdose deaths. Today, there is little medical use of glutethimide in the United States.

Meprobamate

Meprobamate was introduced as an anti-anxiety agent in 1955 and is prescribed primarily to treat anxiety, tension, and associated muscle spasms. More than 50 tons are distributed annually in the United States under its generic name and brand names such as Miltown® and Equanil®. Its onset and duration of action are similar to the intermediate-acting barbiturates; however, therapeutic doses of meprobamate produce less sedation and toxicity than barbiturates. Excessive use can result in psychological and physical dependence. Carisoprodol (Soma®), a skeletal muscle relaxant, is metabolized to meprobamate. This conversion may account for some of the properties associated with carisoprodol and likely contributes to its abuse.

Newly Marketed Drugs

Zolpidem (Ambien®) and zaleplon (Sonata®) are two relatively new, benzodiazepine-like CNS depressants that have been approved for the short-term treatment of insomnia. Both of these drugs share many of the same properties as the benzodiazepines and are in Schedule IV of the CSA.

Depressants Identification

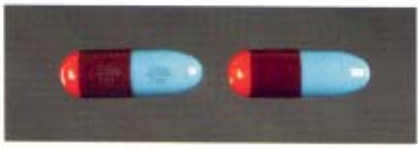
Schedule II

Trade Name: Amytal
Controlled Ingredient: amobarbital. 200 mg

Trade Name: Doriden
Controlled Ingredient: glutethimide, 500 mg

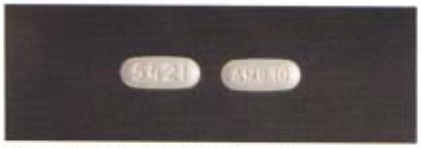
Trade Name: Nembutal
Controlled Ingredient: pentobarbital 100 mg

Trade Name: Seconal
Controlled Ingredient: secobarbital sodium, 100 mg



Trade Name: Tuinal
Controlled Ingredient: amobarbital sodium, 100 mg, secobarbital sodium, 100 mg

Schedule IV



Trade Name: Ambien Zolpidem
Controlled Ingredient: Zolpidem Tartrate, 10 mg

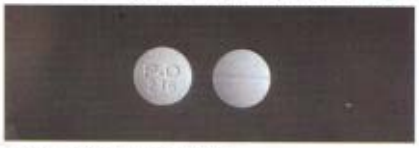
Trade Name: Ambien Zopidem
Controlled Ingredient: Zolpidem Tartrate, 5 mg

Trade Name: Ativan
Controlled Ingredient: lorazepam. 1.0 mg

Trade Name: Ativan
Controlled Ingredient: lorazepam. 0.5 mg

Trade Name: Ativan
Controlled Ingredient: lorazepam. 2.0 mg

Trade Name: Centrax
Controlled Ingredient: prazepam, 10 mg

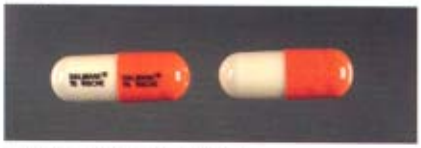


Trade Name: Centrax
Controlled Ingredient: prazepam, 10 mg

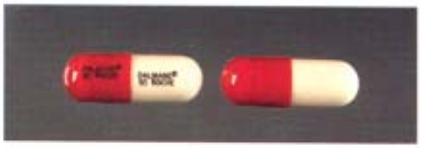
Trade Name: Centrax
Controlled Ingredient: prazepam 5 mg

Depressants Identification

Trade Name: Centrax Prazepam
Controlled Ingredient: prazepam
5 mg



Trade Name: Dalmane
Controlled Ingredient: flurazepam hydrochloride,
15 mg



Trade Name: Dalmane
Controlled Ingredient: flurazepam hydrochloride,
30 mg

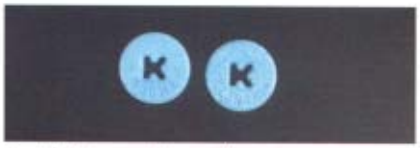
Trade Name: Equanil
Controlled Ingredient: meprobamate,
200 mg

Trade Name: Equanil
Controlled Ingredient: meprobamate,
400 mg

Trade Name: Halcion
Controlled Ingredient: triazolam,
0.25 mg

Trade Name: Halcion
Controlled Ingredient: triazolam,
0.50 mg

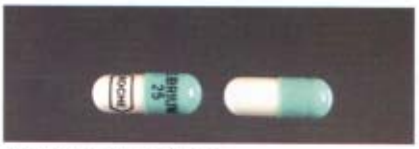
Trade Name: Klonopin
Controlled Ingredient: clonazepam,
0.50 mg



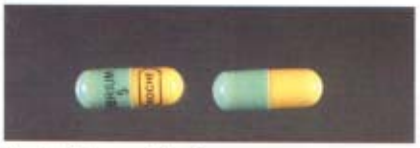
Trade Name: Klonopin
Controlled Ingredient: clonazepam,
1.0 mg

Trade Name: Klonopin
Controlled Ingredient: clonazepam,
2.0 mg

Trade Name: Librium
Controlled Ingredient: chlordiazepoxide
hydrochloride, 10 mg



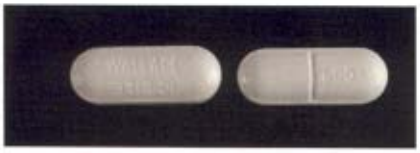
Trade Name: Librium
Controlled Ingredient: chlordiazepoxide
hydrochloride, 25 mg



Trade Name: Librium
Controlled Ingredient: chlordiazepoxide
hydrochloride, 5 mg

Depressants Identification

Trade Name: Miltown 400
Controlled Ingredient: meprobamate,
400 mg



Trade Name: Miltown 600
Controlled Ingredient: meprobamate,
600 mg

Trade Name: Placidyl
Controlled Ingredient: ethchlorvynol,
200 mg

Trade Name: Placidyl
Controlled Ingredient: ethchlorvynol, 500 mg

Trade Name: Placidyl
Controlled Ingredient: ethchlovynol,
750 mg

Trade Name: Restoril
Controlled Ingredient: temazepam.
15 mg

Trade Name: Restoril
Controlled Ingredient: temazepam.
30 mg

Trade Name: Serax
Controlled Ingredient: oxazepam,
15 mg

Trade Name: Serax
Controlled Ingredient: oxazepam,
15 mg

Trade Name: Serax
Controlled Ingredient: oxazepam,
30 mg

Trade Name: Tranxene
Controlled Ingredient: chlorazepate dipotassium,
15 mg

Trade Name: Tranxene
Controlled Ingredient: chlorazepate dipotassium,
3.75 mg

Trade Name: Tranxene
Controlled Ingredient: chlorazepate dipotassium,
7.5 mg

Depressants Identification

Trade Name: Valium
Controlled Ingredient: diazepam,
10 mg

Trade Name: Valium
Controlled Ingredient: diazepam,
5 mg

Trade Name: Valium
Controlled Ingredient: diazepam,
2 mg

Trade Name: Xanax
Controlled Ingredient: alprazolam,
0.25 mg

Trade Name: Xanax
Controlled Ingredient: alprazolam,
0.5 mg

Trade Name: Xanax
Controlled Ingredient: alprazolam,
1.0 mg

Trade Name: Rohypnol
Controlled Ingredient: flunitrazepam -not sold or marketed in the U.S. but illicitly smuggled into the country

Trade Name: Rohypnol

Cannabis

Indoor marijuana growth has become a popular means of clandestine cultivation.

Cannabis sativa L., the cannabis plant, grows wild throughout most of the tropic and temperate regions of the world. Prior to the advent of synthetic fibers, the cannabis plant was cultivated for the tough fiber of its stem. In the United States, cannabis is legitimately grown only for scientific research.

Cannabis contains chemicals called cannabinoids that are unique to the cannabis plant. Among the cannabinoids synthesized by the plant are cannabinol, cannabidiol, cannabinolidic acids, cannabigerol, cannabichromene, and several isomers of tetrahydrocannabinol. One of these, delta-9-tetrahydrocannabinol (THC), is believed to be responsible for most of the characteristic psychoactive effects of cannabis. Research has resulted in development and marketing of the dronabinol (synthetic THC) product, Marinol®, for the control of nausea and vomiting caused by chemotheraputic agents used in the treatment of cancer and to stimulate appetite in AIDS patients. Marinol® was rescheduled in 1999 and placed in Schedule III of the CSA.

Cannabis products are usually smoked. Their effects are felt within minutes, reach their peak in 10 to 30 minutes, and may linger for two or three hours. The effects experienced often depend upon the experience and expectations of the individual user, as well as the activity of the drug itself. Low doses tend to induce a sense of well-being and a dreamy state of relaxation, which may be accompanied by a more vivid sense of sight, smell, taste, and hearing, as well as by subtle alterations in thought formation and expression. This state of intoxication may not be noticeable to an observer. However, driving, occupational, or household accidents may result from a distortion of time and space relationships and impaired motor coordination. Stronger doses intensify reactions. The individual may experience shifting sensory imagery, rapidly fluctuating emotions, fragmentary thoughts with disturbing associations, an altered sense of self-identity, impaired memory, and a dulling of attention despite an illusion of heightened insight. High doses may result in image distortion, a loss of personal identity, fantasies, and hallucinations.

Bongs.

Three drugs that come from cannabis—marijuana, hashish, and hashish oil—are distributed on the U.S. illicit market. Having no currently accepted medical use in treatment in the United States, they remain under Schedule I of the CSA. Today, cannabis is illicitly cultivated, both indoors and out, to maximize its THC content, thereby producing the greatest possible psychoactive effect.

Marijuana

Marijuana is the most frequently encountered illicit drug worldwide. In the United States, according to the 2003 Monitoring the Future Study, 57 percent of adults aged 19 to 28 reported having used marijuana in their lifetime. Among younger Americans, 17.5 percent of 8th graders and 46.1 percent of 12th graders had used marijuana in their lifetime. The term "marijuana," as commonly used, refers to the leaves and flowering tops of the cannabis plant that are dried to produce a tobacco-like substance. Marijuana varies significantly in its potency, depending on the source and selection of plant materials used. The form of marijuana known as sinsemilla (Spanish, sin semilla: without seed), derived from the unpollinated female cannabis plant, is preferred for its high THC content. Marijuana is usually smoked in the form of loosely rolled cigarettes called joints, bongs, or hollowed out commercial cigars called blunts. Joints and blunts may be laced with a number of adulterants including phencyclidine (PCP), substantially altering the effects and toxicity of these products. Street names for marijuana include pot, grass, weed, Mary Jane, and reefer. Although marijuana grown in the United States was once considered inferior because of a low concentration of THC, advancements in plant selection and cultivation have resulted in higher THC-containing domestic

marijuana. In 1974, the average THC content of illicit marijuana was less than one percent. Today most commercial grade marijuana from Mexico/Columbia and domestic outdoor cultivated marijuana has an average THC content of about 4 to 6 percent. Between 1998 and 2002, NIDA-sponsored Marijuana Potency Monitoring System (MPMP) analyzed 4,603 domestic samples. Of those samples, 379 tested over 15 percent THC, 69 samples tested between 20 and 25 percent THC and four samples tested over 25 percent THC.

Marijuana contains known toxins and cancer-causing chemicals. Marijuana users experience the same health problems as tobacco smokers, such as bronchitis, emphysema, and bronchial asthma. Some of the effects of marijuana use also include increased heart rate, dryness of the mouth, reddening of the eyes, impaired motor skills and concentration, and hunger with an increased desire for sweets. Extended use increases risk to the lungs and reproductive system, as well as suppression of the immune system. Occasionally, hallucinations, fantasies, and paranoia are reported. Long-term chronic marijuana use is associated with an Amotivational Syndrome characterized by: apathy; impairment of judgement, memory and concentration; and loss of interest in personal appearance and pursuit of goals.

Rolling papers used to make marijuana cigarettes (joints).

Hashish

Hashish consists of the THC-rich resinous material of the cannabis plant, which is collected, dried, and then compressed into a variety of forms, such as balls, cakes, or cookie-like sheets. Pieces are then broken off, placed in pipes, and smoked. The Middle East, North Africa, and Pakistan/ Afghanistan are the main sources of hashish. The THC content of hashish that reached the United States, where demand is limited, averaged about five percent in the 1990s.

Hashish Oil

The term "hash oil" is used by illicit drug users and dealers, but is a misnomer in suggesting any resemblance to hashish. Hash oil is produced by extracting the cannabinoids from plant material with a solvent. The color and odor of the resulting extract will vary, depending on the type of solvent used. Current samples of hash oil, a viscous liquid ranging from amber to dark brown in color, average about 15 percent THC. In terms of its psychoactive effect, a drop or two of this liquid on a cigarette is equal to a single "joint" of marijuana.

Synthetic THC Identification

Schedule III

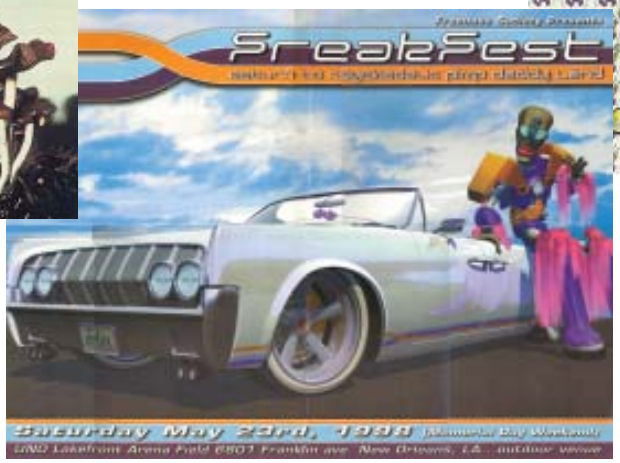
Trade Name: Marinol
Controlled Ingredients:
dronabinol,
2.5 mg

Trade Name: Marinol
Controlled Ingredients:
dronabinol,
5 mg

Trade Name: Marinol
Controlled Ingredients:
dronabinol,
10 mg

Hallucinogens

Mushrooms.



Rave poster.

LSD blotter paper.

Hallucinogens are among the oldest known group of drugs used for their ability to alter human perception and mood. For centuries, many of the naturally occurring hallucinogens found in plants and fungi have been used for a variety of shamanistic practices. In more recent years, a number of synthetic hallucinogens have been produced, some of which are much more potent than their naturally occurring counterparts.

The biochemical, pharmacological, and physiological basis for hallucinogenic activity is not well understood. Even the name for this class of drugs is not ideal, since hallucinogens do not always produce hallucinations.

However, taken in non-toxic dosages, these substances produce changes in perception, thought, and mood. Physiological effects include elevated heart rate, increased blood pressure, and dilated pupils. Sensory effects include perceptual distortions that vary with dose, setting, and mood. Psychic effects include disorders of thought associated with time and space. Time may appear to stand still and forms and colors seem to change and take on new significance. This experience may be either pleasurable or extremely frightening. It needs to be stressed that the effects of hallucinogens are unpredictable each time they are used.

Weeks or even months after some hallucinogens have been taken, the user may experience flashbacks—fragmentary recurrences of certain aspects of the drug experience in the absence of actually taking the drug. The occurrence of a flashback is unpredictable, but is more likely to occur during times of stress and seem to occur more frequently in younger individuals. With time, these episodes diminish and become less intense.

The abuse of hallucinogens in the United States received much public attention in the 1960s and 1970s. A subsequent decline in their use in the 1980s may be attributed to real or perceived hazards associated with taking these drugs.

However, a resurgence of the use of hallucinogens is cause for concern. According to the 2003 Monitoring the Future Study, 10.6 percent of 12th graders reported hallucinogenic use in their lifetime. According to the 2003 National Survey on Drug Use and Health, approximately 1 million Americans were current hallucinogen users. Hallucinogenic mushrooms, LSD, and MDMA are popular among junior and senior high school students who use hallucinogens.

There is a considerable body of literature that links the use of some of the hallucinogenic substances to neuronal damage in animals, and recent data support that some hallucinogens are neurotoxic to humans. However, the most common danger of hallucinogen use is impaired judgment that often leads to rash decisions and accidents.

LSD

Lysergic acid diethylamide (LSD) is the most potent hallucinogen known to science, as well as the most highly studied. LSD was originally synthesized in 1938 by Dr. Albert Hoffman. However, its hallucinogenic effects were unknown until 1943 when Hoffman accidentally consumed some LSD. It was later found that an oral dose of as little as 0.000025 grams (or 25 micrograms, equal in weight to a couple grains of salt) is capable of producing rich and vivid hallucinations. Because of its structural similarity to a chemical present in the brain and its similarity in effects to certain aspects of psychosis, LSD was used as a research tool to study mental illness. LSD abuse was popularized in the 1960s by individuals like Timothy Leary who encouraged American students to "turn on, tune in, and drop out." LSD use has varied over the years but it still remains a significant drug of abuse. In 2003, lifetime prevalence of LSD use for 8th and 12th graders was 2.1 and 5.9 percent, respectively.

The average effective oral dose is from 20 to 80 micrograms with the effects of higher doses lasting for 10 to 12 hours. LSD is usually sold in the form of impregnated paper (blotter acid), typically imprinted with colorful graphic designs. It has also been encountered in tablets (microdots), thin squares of gelatin (window panes), in sugar cubes and, rarely, in liquid form.

High school students often purchase drugs from fellow students.

Physical reactions may include dilated pupils, lowered body temperature, nausea, "goose bumps," profuse perspiration, increased blood sugar, and rapid heart rate. During the first hour after ingestion, the user may experience visual changes with extreme changes in mood. In the hallucinatory state, the LSD user may suffer impaired depth and time perception, accompanied by distorted perception of the size and shape of objects, movements, color, sound, touch, and the user's own body image. During this period, the ability to perceive objects through the senses is distorted: a user may describe "hearing colors" and "seeing sounds." The ability to make sensible judgments and see

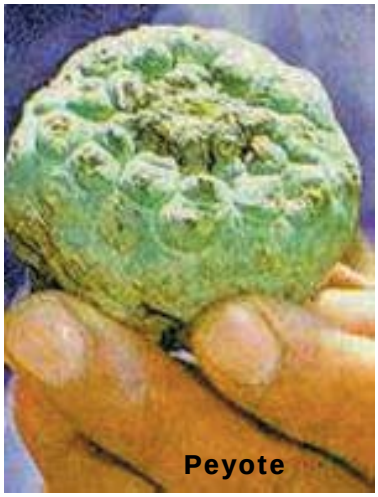
common dangers is impaired, making the user susceptible to personal injury. After an LSD "trip," the user may suffer acute anxiety or depression for a variable period of time. Flashbacks have been reported days or even months after taking the last dose.

Psilocybin & Psilocyn and other Tryptamines

A number of Schedule I hallucinogenic substances are classified chemically as tryptamines. Most of these are found in nature but many, if not all, can be produced synthetically. Psilocybin and psilocyn (4-hydroxy-N,N-dimethyltryptamine) are obtained from certain mushrooms indigenous to tropical and subtropical regions of South America, Mexico, and the United States. As pure chemicals at doses of 10 to 20 mg, these hallucinogens produce muscle relaxation, dilation of pupils, vivid visual and auditory distortions, and emotional disturbances. However, the effects produced by consuming preparations of dried or brewed mushrooms are far less predictable and largely depend on the particular mushrooms used and the age and preservation of the extract. There are many species of "magic" mushrooms that contain varying amounts of these tryptamines, as well as uncertain amounts of other chemicals. As a consequence, the hallucinogenic activity, as well as the extent of toxicity produced by various plant samples, are often unknown.

Dimethyltryptamine (DMT) N,N-Dimethyltryptamine has a long history of use and is found in a variety of plants and seeds. It can also be produced synthetically. It is ineffective when taken orally, unless combined with another drug that inhibits its metabolism. Generally it is sniffed, smoked, or injected. The effective hallucinogenic dose in humans is about 50 to 100 mg and lasts for about 45 to 60 minutes. Because the effects last only about an hour; the experience has been referred to as a "businessman's trip."

A number of other hallucinogens have very similar structures and properties to those of DMT.


Peyote

Diethyltryptamine (DET) N,N-Diethyltryptamine, for example, is an analogue of DMT and produces the same pharmacological effects but is somewhat less potent than DMT. Alpha-ethyltryptamine (AET) is another tryptamine hallucinogen added to the list of Schedule I hallucinogens in 1994. Bufotenine (5-hydroxy-N,N-dimethyltryptamine) is a Schedule I substance found in certain mushrooms, seeds, and skin glands of Bufo toads. In general, most bufotenine preparations from natural sources are extremely toxic. N,N-Diisopropyl-5-methoxytryptamine (referred to as Foxy-Methoxy) is an orally active tryptamine recently encountered in the United States.

Peyote & Mescaline

Peyote is a small, spineless cactus, *Lophophora williamsii*, whose principal active ingredient is the hallucinogen mescaline (3, 4, 5-trimethoxyphenethylamine). From earliest recorded time, peyote has been used by natives in northern Mexico and the southwestern United States as a part of their religious rites.

The top of the cactus above ground—also referred to as the crown—consists of disc-shaped buttons that are cut from the roots and dried. These buttons are generally chewed or soaked in water to produce an intoxicating liquid. The hallucinogenic dose of mescaline is about 0.3 to 0.5 grams and lasts about 12 hours. While peyote produced rich visual hallucinations that were important to the native American peyote users, the full spectrum of effects served as a chemically induced model of mental illness. Mescaline can be extracted from peyote or produced synthetically. Both peyote and mescaline are listed in the CSA as Schedule I hallucinogens.

Many chemical variations of mescaline and amphetamine have been synthesized for their "feel good" effects. 4-Methyl-2,5-dimethoxy-amphetamine (DOM) was introduced into the San Francisco drug scene in the late 1960s and was nicknamed STP; an acronym for "Serenity, Tranquility, and Peace." Other illicitly produced analogues include 4-bromo-2,5-dimethoxy-amphetamine (DOB) and 4-bromo-2,5-dimethoxy-phenethylamine (2C-B or Nexus). In 2000, *para*-methoxyamphetamine (PMA,) and *para*-methoxy-methamphetamine (PMMA) were identified in tablets sold as Ecstasy. PMA, which first appeared on the illicit market briefly in the early 1970s, is associated with a number of deaths in both the United States and Europe.

New Hallucinogens

A number of phenethylamine and tryptamine analogues have been encountered on the illicit market. Those recently placed under federal control include, 2C-T-7 (dimethoxy-4-(n)-propylthio-phenethylamine) permanently placed in Schedule I in March 2004 and 5-MeO-DIPT (5-methoxy-diisopropyltryptamine) and AMT (alpha-methyltryptamine) which were placed in Schedule I on an emergency basis in April 2003. In addition, a number of other analogues are being encountered. These include DIPT (N,N-diiso-propyltryptamine), DPT (N,N-dipropyltryptamine), 5-MeO-AMT (5-methoxy-alphamethyltryptamine), MIPT (N,N-methylisopropyltryptamine) and 5-MeO-MIPT (5-Methoxy, N,N-methyliso-propyltryptamine) to name a few. While these drugs are not specifically listed under the CSA, individuals trafficking in these substances can be prosecuted under the Analogue Statute of the CSA. The ever-increasing number of these types of hallucinogens being encountered by law enforcement is a testament to the efforts of individuals to engage in profitable drug enterprises while trying to avoid criminal prosecution.

MDMA (Ecstasy) and other Phenethylamines

3, 4-Methylenedioxymethamphetamine (MDMA, Ecstasy) was first synthesized in 1912 but remained in relative obscurity for many years. In the 1980s, MDMA gained popularity as a drug of abuse resulting in its final placement in Schedule I of the CSA. Today, MDMA is extremely popular. In 2000, it was estimated that two million tablets were smuggled into the United States every week.

MDMA (Ecstasy) tablets are sold in many colors with a variety of logos designed to attract young abusers.

Ecstasy is often purchased at "rave" parties advertised by colorful posters.

MDMA produces both amphetamine-like stimulation and mild mescaline-like hallucinations. It is touted as a "feel good" drug with an undeserved reputation of safety. MDMA produces euphoria, increased energy, increased sensual arousal, and enhanced tactile sensations. However, it also produces nerve cell damage that can result in psychiatric disturbances and long-term cognitive impairments. The user will often experience increased muscle tension, tremors, blurred vision, and hyperthermia. The increased body temperature can result in organ failure and death.

MDMA is usually distributed in tablet form and taken orally at doses ranging from 50 to 200 mg. Individual tablets are often imprinted with graphic designs or commercial logos, and typically contain 80-100 mg of MDMA. After oral administration, effects are felt within 30 to 45 minutes, peak at 60 to 90 minutes, and last for 4 to 6 hours. Analysis of seized MDMA tablets indicates that about 80 percent of all samples actually contain MDMA. About 10 percent of the MDMA-positive samples also contain MDA (3,4-methylenedioxyamphetamine) and MDEA (3,4-methylenedioxyethylamphetamine), while another 10 percent contain amphetamine, methamphetamine, or both. Fraudulent MDMA tablets frequently contain combinations of ephedrine, dextromethorphan, and caffeine or newer piperazine compounds.

Hundreds of compounds can be produced by making slight modifications to the phenethylamine molecule. Some of these analogues are pharmacologically active and differ from one another in potency, speed of onset, duration of action, and capacity to modify mood, with or without producing overt hallucinations. The drugs are usually taken orally, sometimes snorted, and rarely injected. Because they are produced in clandestine laboratories, they are seldom pure and the amount in a capsule or tablet is likely to vary considerably.

According to the National Survey on Drug Use and Health , initiation of Ecstasy use has increased from 1993 until 2001, when it peaked at 1.8 million new users. In 2002 the number declined to 1.1 million. Two-thirds (66 percent) of new Ecstasy users in 2002 were 18 or older, and 50 percent were male.

Phencyclidine and Related Drugs

In the 1950s, phencyclidine (PCP) was investigated as an anesthetic but, due to the side effects of confusion and delirium, its development for human use was discontinued. It became commercially available for use as a veterinary anesthetic in the 1960s under the trade name of Sernylan® and was placed in Schedule III of the CSA. In 1978, due to considerable abuse, phencyclidine was transferred to Schedule II of the CSA and manufacturing of Sernylan® was discontinued. Today, virtually all of the phencyclidine encountered on the illicit market in the United States is produced in clandestine laboratories.

PCP is illicitly marketed under a number of other names, including Angel Dust, Supergrass, Killer Weed, Embalming Fluid, and Rocket Fuel, reflecting the range of its bizarre and volatile effects. In its pure form, it is a white crystalline powder that readily dissolves in water. However, most PCP on the illicit market contains a number of contaminants as a result of makeshift manufacturing, causing the color to range from tan to brown, and the consistency from powder to a gummy mass. Although sold in tablets and capsules as well as in powder and liquid form, it is commonly applied to a leafy material, such as parsley, mint, oregano, or marijuana, and smoked.

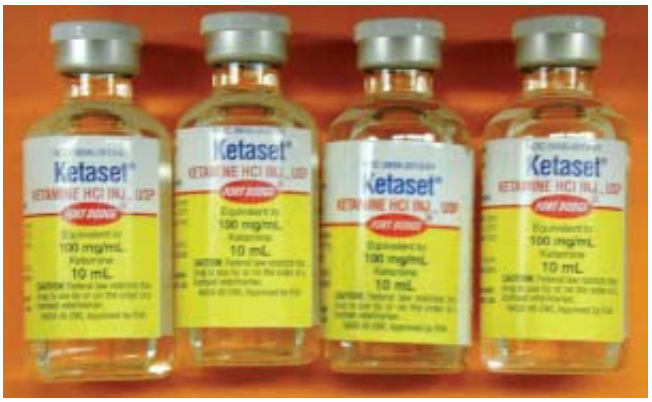
The drug's effects are as varied as its appearance. A moderate amount of PCP often causes the user to feel detached, distant, and estranged from his surroundings. Numbness, slurred speech, and loss of coordination may be accompanied by a sense of strength and invulnerability. A blank stare, rapid and involuntary eye movements, and an exaggerated gait are among the more observable effects. Auditory hallucinations, image distortion, severe mood disorders, and amnesia may also occur. In some users, PCP may cause acute anxiety and a feeling of impending doom; in others, paranoia and violent hostility; and in some, it may produce a psychosis indistinguishable from schizophrenia. PCP use is associated with a number of risks, and many believe it to be one of the most dangerous drugs of abuse.

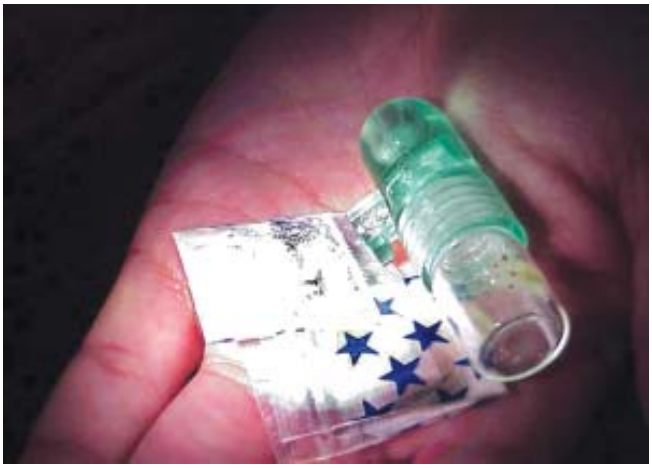
Modification of the manufacturing process may yield chemically related analogues capable of producing psychic effects similar to PCP. Four of these substances N-ethyl-l-phenylcyclohexylamine or PCE, l-(phenylcyclohexyl)pyrrolidine or PCPy, l-[l-(2-thienyl)cyclohexyl]piperdine or TCP, and l-[l-(2-thienyl)cyclohexyl]pyrrolidine or TCPy have been encountered on the illicit market and have been placed in Schedule I of the CSA. Telazol®, a Schedule III veterinary anesthetic containing tiletamine (a PCP analogue), in combination with zolazepam, (a benzodiazepine), is sporadically encountered as a drug of abuse.

Ketamine

Ketamine is a rapidly acting general anesthetic. Its pharmacological profile is essentially the same as phencyclidine. Like PCP, ketamine is referred to as a dissociative anesthetic because patients feel

Ketamine.





Ketamine powder is clandestinely sold at "rave" parties and is usually snorted.

detached or disconnected from their pain and environment when anesthetized with this drug. Unlike most anesthetics, ketamine produces only mild respiratory depression and appears to stimulate, not depress, the cardiovascular system. In addition, ketamine has both analgesic and amnesic properties and is associated with less confusion, irrationality, and violent behavior than PCP. Use of ketamine as a general anesthetic for humans has been limited due to adverse effects including delirium and hallucinations. Today, it is primarily used in veterinary medicine, but has some utility for emergency surgery in humans.

Although ketamine has been marketed in the United States for many years, it was only recently associated with significant diversion and abuse and placed in Schedule III of the CSA in 1999. Known in the drug culture as "Special K" or "Super K," ketamine has become a staple at dance parties or "raves." Ketamine is supplied to the illicit market by the diversion of legitimate pharmaceuticals (Ketaset®, Ketalar®). It is usually distributed as a powder obtained by removing the liquid from the pharmaceutical products. As a drug of abuse, ketamine can be administered orally, snorted, or injected. It is also sprinkled on marijuana or tobacco and smoked. After oral or intranasal administration, effects are evident in about 10 to 15 minutes and are over in about an hour.

After intravenous use, effects begin almost immediately and reach peak effects within minutes. Ketamine can act as a depressant or a psychedelic. Low doses produce vertigo, ataxia, slurred speech, slow reaction time, and euphoria. Intermediate doses produce disorganized thinking, altered body image, and a feeling of unreality with vivid visual hallucinations. High doses produce analgesia, amnesia, and coma.

Inhalants

Many types of household glues contain harmful vapors that are inhaled when placed in bags or spread inside of a painters face mask.

Inhalants are a diverse group of substances that include volatile solvents, gases, and nitrites that are sniffed, snorted, huffed, or bagged to produce intoxicating effects similar to alcohol. These substances are found in common household products like glues, lighter fluid, cleaning fluids, and paint products. Inhalant abuse is the deliberate inhaling or sniffing of these substances to get high, and it is estimated that about 1,000 substances are misused in this manner. The easy accessibility, low cost, legal status, and ease of transport and concealment make inhalants one of the first substances abused by children.

According to the National Survey on Drug Use and Health, there were over 1 million new inhalant users in 2002. During 2003, almost 23 million (9.7%) persons ages 12 and older reported using an inhalant at least once in their lifetime. The 2003 Monitoring the Future Study from the University of Michigan reported that 8.7 percent of 8th graders, 5.4 percent of 10th graders, and 3.9 percent of 12th graders used inhalants in the past year. The study also showed that 4.1 percent of 8th graders, 2.2 percent of 10th graders, and 1.6 percent of 12th graders used inhalants in the past month.

The highest incidence of use is among 10 to 12 year old children with rates of use declining with age. Parents worry about alcohol, tobacco, and drug use but may be unaware of the hazards associated with products found throughout their homes. Knowing what these products are, how they might be harmful, and recognizing the signs and symptoms of their use as inhalants, can help a parent prevent inhalant abuse.

For example, volatile solvents are found in a number of everyday products. Some of these products include nail polish remover, lighter fluid, gasoline, paint and paint thinner, rubber glue, waxes, and varnishes. Chemicals found in these products include toluene, benzene, methanol, methylene chloride, acetone, methyl ethyl ketone,

methyl butyl ketone, trichloroethylene, and trichlorethane. The gas used as a propellant in canned whipped cream and in small lavender metallic containers called "whippets" (used to make whipped cream) is nitrous oxide or "laughing gas"—the same gas used by dentists for anesthesia. Tiny cloth-covered ampules, called poppers or snappers by abusers, contain amyl nitrite, a medication used to dilate blood vessels. Butyl nitrite, sold as tape head cleaner and referred to as "rush," "locker room," or "climax," is often sniffed or huffed to get high.

Inhalants may be sniffed directly from an open container or huffed from a rag soaked in the substance and held to the face. Alternatively, the open container or soaked rag can be placed in a bag where the vapors can concentrate before being inhaled. Some chemicals are painted on the hands or fingernails or placed on shirt sleeves or wrist bands to enable an abuser to continually inhale the fumes without being detected by a teacher or other adult. Although inhalant abusers may prefer one particular substance because of taste or odor, a variety of substances may be used because of similar effects, availability, and cost. Once the substance is inhaled, the extensive capillary surface of the lungs allows rapid absorption of the substance, and blood levels peak rapidly. Entry into the brain is fast, and the intoxicating effects are short-lived but intense.

Inhalants depress the central nervous system, producing decreased respiration and blood pressure. Users report distortion in perceptions of time and space. Many users experience headaches, nausea, slurred speech, and loss of motor coordination. Mental effects may include fear, anxiety, or depression. A rash around the nose and mouth may be seen, and the abuser may start wheezing. An odor of paint or organic solvents on clothes, skin, and breath is sometimes a sign of inhalant abuse. Other indicators of inhalant abuse include slurred speech or staggering gait, red, glassy, watery eyes, and excitability or unpredictable behavior.

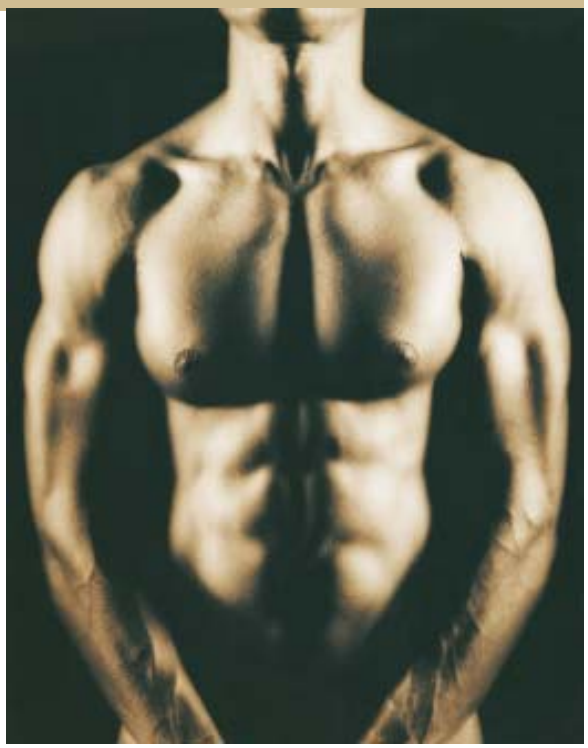
The chronic use of inhalants has been associated with a number of serious health problems. Sniffing glue and paint thinner causes kidney abnormalities, while sniffing the solvents toluene and trichloroethylene cause liver damage. Memory impairment, attention deficits, and diminished non-verbal intelligence have been related to the abuse of inhalants. Deaths resulting from heart failure, asphyxiation, or aspiration have occurred.

For more information regarding inhalants, contact the National Inhalant Prevention Coalition by telephone (1-800-269-4237) or by the Internet (www.inhalants.org).

Left. Vapors from pocket lighters are inhaled or "huffed" through the nostrils. These lighters are cheap and easily concealed.

Right. Markers are placed in a sandwich bag and then stepped on and crushed to breath the vapors.

Steroids



When athletes gather the issue of performance enhancing drugs, especially anabolic steroids, once again gained international attention. These drugs are used by high school, college, professional, and elite amateur athletes in a variety of sports (e.g., weight lifting, track and field, swimming, cycling, and others) to obtain a competitive advantage. Body builders and fitness buffs take anabolic steroids to improve their physical appearance, and individuals in occupations requiring enhanced physical strength (e.g., body guards, night club bouncers, construction workers) are also known to use these drugs.

Concerns over a growing illicit market, abuse by teenagers, and the uncertainty of possible harmful long-term effects of steroid use, led Congress in 1991 to place anabolic steroids as a class of drugs into Schedule III of the Controlled Substances Act (CSA). The CSA defines anabolic steroids as any drug or hormonal substance chemically and pharmacologically related to testosterone (other than estrogens, progestins, and corticosteroids) that promotes muscle growth.

Once viewed as a problem associated only with professional and elite amateur athletes, various reports indicate that anabolic steroid abuse has increased significantly among adolescents. According to the 2003 Monitoring the Future Study, 2.5 percent of 8th graders, 3.0 percent of 10th graders, and 3.5 percent of 12th graders reported using steroids at least once in their lifetime.

Most illicit anabolic steroids are sold at gyms, competitions, and through mail-order operations. For the most part, these substances are smuggled into the United States from many countries. The illicit market includes various preparations intended for human and veterinary use as well as bogus and counterfeit products. The most commonly encountered anabolic steroids on the illicit market include testosterone, nandrolone, methenolone, stanozolol, and methandrostenolone. Other steroids seen in the illicit market include boldenone, fluoxymesterone, methandriol, methyltestosterone, oxandrolone, oxymetholone, and trenbolone.

A limited number of anabolic steroids have been approved for medical and veterinary use. The primary legitimate use of these drugs in humans is for the replacement of inadequate levels of testosterone resulting from a reduction or absence of functioning testes. Other indications include anemia and breast cancer. Experimentally, anabolic steroids have been used to treat a number of disorders including AIDS wasting, erectile dysfunction, and osteoporosis. In veterinary practice, anabolic steroids are used to promote feed efficiency and to improve weight gain, vigor, and hair coat. They are also used in veterinary practice to treat anemia and counteract tissue breakdown during illness and trauma.

When used in combination with exercise training and a high protein diet, anabolic steroids can promote increased size and strength of muscles, improve endurance, and decrease recovery time between workouts. They are taken orally or by intramuscular injection. Users concerned about drug tolerance often take steroids on a schedule called a cycle. A cycle is a period of between 6 and 14 weeks of steroid use, followed by a period of abstinence or reduction in use. Additionally, users tend to "stack" the drugs, using multiple drugs concurrently. Although the benefits of these practices are unsubstantiated, most users feel that cycling and stacking enhance the efficiency of the drugs and limit their side effects.

Another mode of steroid use is called "pyramiding." With this method users slowly escalate steroid use (increasing the number of drugs used at one time and/or the dose and frequency of one or more steroids), reach a peak amount at mid-cycle and gradually taper the dose toward the end of the cycle. The escalation of steroid use can vary with different types of training. Body builders and weight lifters tend to escalate their dose to a much higher level than do long distance runners or swimmers.

The long-term adverse health effects of anabolic steroid use are not definitely known. There is, however, increasing concern of possible serious health problems associated with the abuse of these agents, including cardiovascular damage, cerebrovascular toxicity, and liver damage.

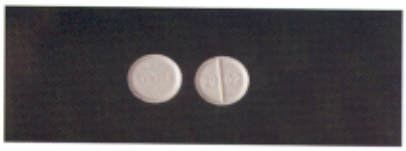
Physical side effects include elevated blood pressure and cholesterol levels, severe acne, premature balding, reduced sexual function, and testicular atrophy. In males, abnormal breast development (gynecomastia) can occur. In females, anabolic steroids have a masculinizing effect, resulting in more body hair, a deeper voice, smaller breasts, and fewer menstrual cycles. Several of these effects are irreversible. In adolescents, abuse of these agents may prematurely stop the lengthening of bones, resulting in stunted growth. For some individuals, the use of anabolic steroids may be associated with psychotic reactions, manic episodes, feelings of anger or hostility, aggression, and violent behavior.

A variety of non-steroid drugs are commonly found within the illicit anabolic steroid market. These substances are primarily used for one or more of the following reasons: 1) to serve as an alternative to anabolic steroids; 2) to alleviate short-term adverse effects associated with anabolic steroid use; or 3) to mask anabolic steroid use. Examples of drugs serving as alternatives to anabolic steroids include clenbuterol, human growth hormone, insulin, insulin-like growth factor, and GHB. Drugs used to prevent or treat adverse effects of anabolic steroid use include tamoxifen, diuretics, and human chorionic gonadotropin. Diuretics, probenocid, and epitestosterone may be used to mask anabolic steroid use.

Over the last few years, a number of precursors to either testosterone or nandrolone have been marketed as dietary supplements in the United States. Some of these substances include androstenedione, androstenediol, norandrostenedione, norandrostenediol, and dehydroepiandrosterone (DHEA). New legislation has been introduced in Congress to add several steroids to the CSA and to alter the CSA requirements needed to place new steroids under control in the CSA.

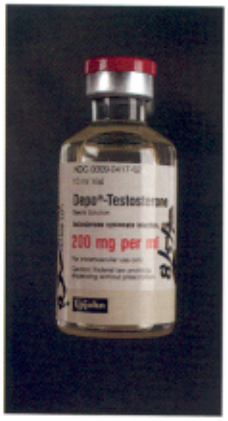
Steroids Identification

Schedule III



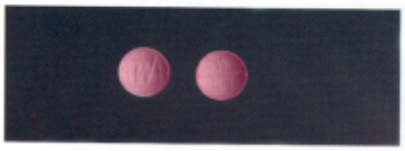
Trade Name: Anadrol
Controlled Ingredients: oxymetholone, 50 mg

Trade Name: Android-25
Controlled Ingredients: methyltestosterone, 25 mg



Trade Name: Depo- Testosterone
Controlled Ingredients: testosterone cypionate, 200 mg/ml

Trade Name: Testosterone
Controlled Ingredients: testosterone cypionate, 200 mg/ml



Trade Name: Winstrol
Controlled Ingredients: stanozolol, 2mg/ml

The 22 controlled syteroid substances are sold under hundreds of brand names. This is just a sampling.

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U.S. Department of Justice

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The National Drug Intelligence Center (NDIC), established in 1993, is a component of the U.S. Department of Justice and the nation's principal center for strategic domestic counterdrug intelligence.

Products and Services Available to Law Enforcement Personnel:

Strategic Drug Threat Assessments

NDIC produces national, regional, and state drug threat assessments to provide policymakers and law enforcement officials with timely, predictive reports of the threat posed by illicit drugs in the United States. The reports highlight the most current information on availability, demand, production and cultivation, transportation, and distribution of illicit drugs in the United States.

Narcotics Digest Weekly

NDIC publishes a weekly digest of current intelligence, indications and warnings of emerging drug trends. Law enforcement officials, drug treatment providers and educators may receive the digest by e-mail or in hard copy.

Document and Computer Exploitation (Doc Ex)

NDIC supports major drug investigations by quickly analyzing information to expedite evidence processing. Doc Ex teams in reviewing seized documents and electronic media use the Real-time Analytical Intelligence Database (RAID) to identify hidden assets, previously unknown associates, and other leads for further investigation. Investigators and prosecutors are provided with a fully sourced summary report of the key findings in about a week's time.

Counterdrug Analysis Training

NDIC provides a 1-week counterdrug analysis training course at no cost for federal, state, and local law enforcement personnel via video teleconferencing to networked distance learning sites in four cities, four times per year.

Counternarcotics Publications Quarterly

NDIC publishes a quarterly abstract index listing titles of counterdrug publications from various federal, state, and local agencies.

For more information on NDIC's products and services:

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U.S. Department of Justice
Drug Enforcement Administration

DRUGS OF ABUSE / Uses and Effects

Drugs	CSA Schedules	Trade or Other Names	Medical Uses	Dependence: Physical	Dependence: Psychological	Tolerance	Duration (Hours)	Usual Method	Possible Effects	Effects of Overdose	Withdrawal Syndome
Narcotics											
Heroin	Substance I	Diamorphine, Horse, Smack, Black tar, *Chiva, Negra (black tar)*	None in U.S., Analgesic, Antitussive	High	High	Yes	3-4	Injected, snorted, smoked	Euphoria, drowsiness, respiratory depression, constricted pupils, nausea	Slow and shallow breathing, clammy skin, convulsions, coma, possible death	Watery eyes, runny nose, yawning, loss of appetite, irritability, tremors, panic, cramps, nausea, chills and sweating
Morphine	Substance II	MS-Contin, Roxanol, Oramorph SR, MSIR	Analgesic	High	High	Yes	3-12	Oral, injected			
Hydrocodone	Substance II, Product III,V	Hydrocodone w/Acetaminophen, Vicodin, Vicoprofen, Tussionex, Lortab	Analgesic, Antitussive	High	High	Yes	3-6	Oral			
Hydromorphone	Substance II	Dilaudid	Analgesic	High	High	Yes	3-4	Oral, injected			
Oxycodone	Substance II	Roxicet, Oxycodone w/Acetaminophen, OxyContin, Endocet, Percocet, Percodan	Analgesic	High	High	Yes	3-12	Oral			
Codeine	Substance II, Products III,V	Acetaminophen, Guaifenesin or Promethazine w/Codeine, Fiorinal, Fioricet or Tylenol w/Codeine	Analgesic, Antitussive	Moderate	Moderate	Yes	3-4	Oral, injected			
Other Narcotics	Substance II,III,IV	Fentanyl, Demerol, Methadone, Darvon, Stadol, Talwin, Paregoric, Buprenex	Analgesic, Antidiarrheal, Antitussive	High-Low	High-Low	Yes	Variable	Oral, injected, snorted, smoked			
Depressants											
gamma Hydroxybutyric Acid	Sub I, Product III	GHB, Liquid Ecstasy, Liquid X, Sodium Oxybate, Xyrem®	None in U.S., Anesthetic	Moderate	Moderate	Yes	3-6	Oral	Slurred speech, disorientation, drunken behavior without odor of alcohol, impaired memory of events, interacts with alcohol	Shallow respiration, clammy skin, dilated pupils, weak and rapid pulse, coma, possible death	Anxiety, insomnia, tremors, dellrium, convulsions, possible death
Benzodiazepines	Substance IV	Valium, Xanax, Halcion, Ativan, Restoril, Rohypnol (Roofies, R-2), Klonopin	Antianxiety, Sedative, Anticonvulsant, Hypnotic, Muscle Relaxant	Moderate	Moderate	Yes	1-8	Oral, injected			
Other Depressants	Substance I,II,III,IV	Ambien, Sonata, Meprobamate, Chloral Hydrate, Barbiturates, Methaqualone (Quaalude)	Antianxiety, Sedative, Hypnotic	Moderate	Moderate	Yes	2-6	Oral			
Stimulants											
Cocaine	Substance II	Coke, Flake, Snow, Crack, *Coca, Blanca, Perico, Nieve, Soda*	Local anesthetic	Possible	High	Yes	1-2	Snorted, smoked, injected	Increased alertness, excitation, euphoria, increased pulse rate & blood pressure, insomnia, loss of appetite	Agitation, increased body temperature, hallucinations, convulsions, possible death	Apathy, long periods of sleep, irritability, depression, disorientation
Amphetamine/Methamphetamine	Sub II	Crank, Ice, Cristal, Krystal Meth, Speed, Adderall, Dexedrine, Desoxyn	Attention deficit/hyperactivity disorder, narcolepsy, weight control	Possible	High	Yes	2-4	Oral, injected, smoked			
Methylphenidate	Substance II	Ritalin (Illy's), Concerta, Focalin, Metadate	Attention deficit/hyperactivity disorder	Possible	High	Yes	2-4	Oral, injected, snorted, smoked			
Other Stimulants	Substance III,IV	Adipex P, Ionamin, Prelu-2, Didrex, Provigil	Vasoconstriction	Possible	Moderate	Yes	2-4	Oral			
Hallucinogens											
MDMA and Analogs	Substance I	(Ecstasy, XTC, Adam), MDA (Love Drug), MDEA (Eve), MBDB	None	None	Moderate	Yes	4-6	Oral, snorted, smoked	Heightened senses, teeth grinding and dehydration	Increased body temperature, electrolyte imbalance, cardiac arrest	Muscle aches, drowsiness, depression, acne
LSD	Substance I	Acid, Microdot, Sunshine, Boomers	None	None	Unknown	Yes	8-12	Oral			
Phencyclidine and Analogs	Sub I,II,III	PCP, Angel Dust, Hog, Loveboat, Ketamine (Special K), PCE, PCPy, TCP	Anesthetic (Ketamine)	Possible	High	Yes	1-12	Smoked, oral, injected, snorted	Illusions and hallucinations, altered perception of time and distance	(LSD) Longer, more intensed "trip" episodes	None
Other Hallucinogens	Substance I	Psilocybe mushrooms, Mescaline, Peyote Cactus, Ayahausca, DMT, Dextromethorphan* (DXM)	None	None	None	Possible	4-8	Oral		Unable to direct movement, feel pain, or remember	Drug seeking behavior
Cannabis											*Not regulated
Marijuana	Substance I	Pot, Grass, Sinsemilla, Blunts, *Mota, Yerba, Grifa*	None	Unknown	Moderate	Yes	2-4	Smoked, oral	Euphoria, relaxed inhibitions, increased appetite, disorientation	Fatigue, paranoia, possible psychosis	Occasional reports of insomnia, hyperactivity, decreased appetite
Tetrahydrocannabinol	Sub I, Product III	THC, Marinol	Antinauseant, Appetite stimulant	Yes	Moderate	Yes	2-4	Smoked, oral			
Hashish and Hashish Oil	Substance I	Hash, Hash oil	None	Unknown	Moderate	Yes	2-4	Smoked, oral			
Anabolic Steroids											
Testosterone	Substance III	Depo Testosterone, Sustanon, Sten, Cypt	Hypogonadism	Unknown	Unknown	Unknown	14-28 days	Injected	Virilization, edema, testicular atrophy, gynecomastia, acne aggressive behavior	Unknown	Possible depression
Other Anabolic Steroids	Substance III	Parabolan, Winstrol, Equipose, Anadrol, Dianabol, Primabolin-Depo, D-Ball	Anemia, Breast cancer	Unknown	Yes	Unknown	Variable	Oral, injected			
Inhalants											
Amyl and Butyl Nitrite		Pearls, Poppers, Rush, Locker Room	Angina (Amyl)	Unknown	Unknown	No	1	Inhaled	Flushing, hypotension, headache	Methemoglobinemia	Agitation
Nitrous Oxide		Laughing gas, balloons, Whippets	Anesthetic	Unknown	Low	No	0.5	Inhaled	Impaired memory, slurred speech, drunken behavior, slow onset vitamin deficiency, organ damage	Vomiting, respiratory depression, loss of consciousness, possible death	Trembling, anxiety, insomnia, vitamin deficiency, confusion, hallucinations, convulsions
Other Inhalants		Adhesives, spray paint, hair spray, dry cleaning fluid, spot remover, lighter fluid	None	Unknown	High	No	0.5-2	Inhaled			
Alcohol		Beer, wine, liquor	None	High	High	Yes	1-3	Oral			

June 2004