Heroin

History
Identification/Treatment
Current Patterns

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(continued)

In addition, 35% of the clinicians admitted that they do not know much about opioid dependence; 66% said they feel that a low level of education is a likely cause of the disorder; and 57% said that low income was a likely cause.

It is surprising to see that so many members of the treatment community have contributed to perpetuating stigma for these individuals.

Physicians feel that this is a disease. But they think it’s more of a psychological one than a chronic brain disorder, as it’s defined by the American Society of Addiction Medicine. It actually contributes neurophysiologic changes to the brain.

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The survey also found that 77% of the adult participants and 93% of the clinicians said that shame, embarrassment, or fear that others would find out are among the main reasons why those with the addiction might not seek treatment.

Although 7% of the adults and 85% of the clinicians said that many of these people think they can stop their addiction on their own, 83% and 92% agreed that a long-term combination of medication and behavioral changes is needed for successful treatment.

Interestingly, only 44% of all adults said that they were aware that prescription medication exists as a treatment option.

Opening Remarks on Opioid Dependence

New research suggests that misperceptions about opioid dependence, including how to screen for and treat the disorder, continue to persist for the public and for many clinicians.

An online survey of 1000 adults chosen at random plus 200 primary care physicians who were not addiction certified showed that almost half of the first group and a third of the latter said they believe that opioid dependence “is more of a psychological problem,” such as a lifestyle choice, than a chronic physical illness.

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A total of 1000 Americans between the ages of 26 and 49 years filled out the online survey between January 2 and January 7, 2013, as did 200 non-Drug Addiction Treatment Act of 2000 (DATA 2000) certified primary care, family practice, and internal medicine physicians between March 13 and March 22, 2013.

Results: 12% of the adults reported personally struggling with opioid dependence, which the surveyors point out is more than those who struggle with diabetes (7%) or cancer (3%).

However, only 59% of the adults and 88% of the clinicians said that this type of addiction is a disease, and 80% of the clinicians said that the condition “represents a mental health problem.”

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27% of the primary care physicians said they thought that any physician can prescribe medication to someone with opioid dependence;

31% thought they did not need DATA 2000 certification to treat these patients; and

7% said that they prefer to not treat these patients in any way.

The most commonly cited reasons for not wanting to treat patients with opioid dependence included that they are difficult to treat, that it would require too much paperwork or take up too much office staff time, and that clinicians did not want to be viewed as having an addiction practice.
### Prescription Opioid Use: A First Step to Heroin Use?
- Prescription opioid pain medications such as Oxycontin and Vicodin can have effects similar to heroin when taken in doses or in ways other than prescribed, and they are currently among the most commonly used drugs in the United States. Research now suggests that use of these drugs may open the door to heroin use.
- Nearly half of young people who inject heroin surveyed in three recent studies reported abusing prescription opioids before starting to use heroin. Some individuals reported taking up heroin because it is cheaper and easier to obtain than prescription opioids.
- Many of these young people also report that crushing prescription opioid pills to snort or inject the powder provided their initiation into these methods of drug administration.

### What is it?
- **AKA:** H, Smack, Junk, Skag, Horse
- Heroin is an opioid drug that is synthesized from morphine, a naturally occurring substance extracted from the seed pod of the Asian opium poppy plant. Heroin usually appears as a white or brown powder or as a black sticky substance, known as “black tar heroin.”
- In 2011, 4.2 million Americans aged 12 or older (or 1.6 percent) had used heroin at least once in their lives. It is estimated that about 23 percent of individuals who use heroin become dependent on it.

### How Is Heroin Used?
- Heroin can be injected, inhaled by snorting or sniffing, or smoked. All three routes of administration deliver the drug to the brain very rapidly, which contributes to its health risks and to its high risk for addiction, which is a chronic relapsing disease caused by changes in the brain and characterized by uncontrollable drug-seeking no matter the consequences.

### How Does Heroin Affect the Brain?
- When it enters the brain, heroin is converted back into morphine, which binds to molecules on cells known as opioid receptors. These receptors are located in many areas of the brain.
- After an intravenous injection of heroin, users report feeling a surge of euphoria (“rush”) accompanied by dry mouth, a warm flushing of the skin, heaviness of the extremities, and clouded mental functioning.
- Regular heroin use changes the functioning of the brain. One result is tolerance, in which more of the drug is needed to achieve the same intensity of effect. Another result is dependence, characterized by the need to continue use of the drug to avoid withdrawal symptoms.

### What Are the Other Health Effects of Heroin?
- Heroin use is associated with a number of serious health conditions, including fatal overdose, spontaneous abortion, and infectious diseases like hepatitis and HIV.
- In addition to the effects of the drug itself, street heroin often contains toxic contaminants or additives that can clog blood vessels leading to the lungs, liver, kidneys, or brain, causing permanent damage to vital organs.

### What does Heroin look like?
![Heroin appearance images](Heroin Appearance Images)
Signs and Symptoms of Heroin Use

Individuals who use heroin may exhibit a number of signs and symptoms. However, not all users will react to the drug in the same way. While signs and symptoms of use may vary from person to person, most people exhibit certain symptoms and behavior indicative of an use problem. Signs of heroin include:

- Behavioral changes
- Hyperactivity followed by fatigue
- Disorientation
- Irresponsibility at work or school
- Lying
- Wearing long shirts and pants even during warm weather
- Increased sleeping
- Slurred speech
- Track marks on arms or legs
- Weight loss
- Constant runny nose
- Scabs or bruises due to picking at the skin
Opium poppy – *Papaver somniferum*
Initially, the term "laudanum" referred to any combination of opium and alcohol. Paracelsus’ laudanum was strikingly different from the standard laudanum of the 17th century and beyond.

His preparation contained opium, crushed pearls, musk, amber, and other substances. One researcher has documented that "Laudanum, as listed in the London Pharmacopoeia (1618), was a pill made from opium, saffron, castor, ambergris, musk and nutmeg."

While laudanum is known as a "whole opium" preparation since it historically contained all the opium alkaloids, today the drug is often processed to remove all or most of the noscapine (also known as narcotine) present as this is a strong emetic and does not add appreciably to the analgesic or anti-propulsive properties of opium; the resulting solution is called Denarcotized Tincture of Opium or Deodorized Tincture of Opium (DTO).
Noscapine has also been used to identify drug users who are taking street heroin at the same time as prescribed diamorphine.

Since the diamorphine in street heroin is the same as the pharmaceutical diamorphine, examination of the contaminants is the only way to test whether street heroin has been used.

Other contaminants looked for in urine drug screen alongside noscapine are papaverine and acetylcodeine.

Laudanum remains available by prescription in the United States and the United Kingdom, although today the drug's therapeutic indications are generally confined to controlling diarrhea, alleviating pain, and easing withdrawal symptoms in infants born to mothers dependent on opiates.

While the terms laudanum and tincture of opium are generally interchangeable, in contemporary medical practice, the latter is used almost exclusively.

Laudanum remained largely unknown for many years until the 1660s when an English physician named Thomas Sydenham (1624–1689) compounded a proprietary opium tincture that he also named laudanum, although it differed substantially from the laudanum of Paracelsus.

In 1676 Sydenham published a seminal work, Medical Observations Concerning the History and Cure of Acute Diseases, in which he promoted his brand of opium tincture, and advocated its use for a range of medical conditions.
Opium, and after 1820, morphine, was mixed with everything imaginable: mercury, hashish, cayenne pepper, ether, chloroform, belladonna, whiskey, wine and brandy.

Innumerable Victorian women were prescribed the drug for relief of menstrual cramps and vague aches.
Nurses also spoon-fed laudanum to infants.
The Victorian era was marked by the widespread use of laudanum in Europe and the United States.

Mary Todd Lincoln, for example was a laudanum addict, as was the English poet Samuel Taylor Coleridge, who was famously interrupted in the middle of an opium-induced writing session of *Kubla Khan* by a "person from Porlock", actually it was his physician stopping by to deliver more laudanum.
Initially a working class drug, laudanum was cheaper than a bottle of gin, because it was treated as a medication for legal purposes and not taxed as an alcoholic beverage.

- So if still used today, could one use pretax Flex dollars for it?

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**Morphine**

- Is considered to be the prototypical opiate.
- It was discovered in 1803 by Fredrich Sertürner.
- First distributed by him in 1817.
- First commercially sold by Merck in 1827, which at the time was a single small chemists' shop.

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**A opiate is usually consider to be based on coming from opium, an opioid is usually considered to be a chemical not occurring in nature.**

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**Francis Rynd (1801-1861)**

- 1844 Introduced the hypodermic method of medication for the relief of pain.
- This he accomplished by the use of a small gravity device of his own invention.
- He possessed an extremely modest disposition and allowed a Scotchman named Wood to be given most the credit for priority in this field.
- Investigators have, however, clearly established since then that honor belongs to Rynd.
The idea that opiates debase the will and sap the capacity for moral action becomes the foundation of the view that addiction is a moral vice rather than an illness.

The use of opium and morphine in the treatment of disease and injury is widespread during the Civil War and the use of the hypodermic syringe becomes more widespread by the end of the War.

The Soldier’s Disease
The Army’s Disease
Leading some to say
- The brand name Heroin
- Comes from “Hero in” or a drug for heroes
- Bayer says the name was derived from the German word "heroisch" (heroic) due to its perceived “heroic” effects upon a user.

It was chiefly developed as a morphine substitute for cough suppressants that did not have morphine's addictive adverse effects.
Morphine at the time was a popular recreational drug, and Bayer wished to find a similar but non-addictive substitute to market.
However, contrary to Bayer’s advertising as a “non-addictive morphine substitute,” heroin would soon have one of the highest rates of addiction amongst its users.

The first case of morphine addiction involving the use of the hypodermic syringe is documented.
1870s-90s
- Physicians prescribe morphine for wide-ranging indications, reflecting the range of morphine’s physiological actions and prevailing ideas about disease.
- Morphine is known to relieve pain, promote sleep, ease anxiety, combat diarrhea, reduce coughing.

1872
- Described “Chronic Opium Disease” as a new and “intricate” disease.
  - “Opium is often taken for the relief of suffering from chronic diseases until the opium habit has become confirmed and the two diseases reign together.”
- Note habit and disease used interchangeably.

1874
- Heroin is invented but is not marketed until 1898.
1898

- The Bayer company puts heroin on the market (same year as Aspirin) as an antitussive.
- As a sniffable powder marketed as a cough remedy, it quickly gains favor as a recreational drug among young men (and, to a lesser extent, women) in urban neighborhoods.

1898

- The U.S. enters and quickly wins the Spanish-American War and gains new territories, including the Philippines.
- Missionary observers are appalled at the levels of opium addiction they find there and see this problem as an obstacle to economic modernization for the islands.
- Similarly, missionaries portray the prevalence of opium use in China as a sign of China’s backwardness.

These concerns help launch the international missionary movement which sparks domestic efforts to pass federal legislation banning opiates, on the grounds that American missionaries could hardly urge other countries to pass prohibitive legislation when the U.S. lacked such laws.

- This lead to the Harrison Narcotics Act in 1914

Harrison Narcotics Act

- Should be a separate lecture.
- Started with the idea of helping doctors use tapering doses to get addicts off of opiates.
- Ended with criminalizing doctors who prescribed ANY opiates for addicts (with or without the knowledge of the doctor).
- ~25,000 doctors charged and ~5,000 jailed for short periods of time and ~2,000 doctors went to prison for years.
  - McNeil Island built for this and the NW main area of struggle and enforcement

- 65 mg Morphine per 30 ml
Based on SAMHSA's Treatment Episode Data Set (TEDS), annual admissions to substance use treatment for primary heroin use increased from 228,000 in 1995 to 254,000 in 2005. However, the proportion of primary heroin admissions remained steady at about 14% to 15% of all substance use treatment admissions.

The proportion of primary heroin admissions who injected heroin declined from 69% in 1995 to 63% in 2005.

The proportion who inhaled heroin increased from 27% among the primary heroin admissions in 1995 to 37% in 2005.

The proportion of primary heroin injection admissions for which medication-assisted opioid therapy was planned declined from 55% in 1995 to 38% of the primary heroin injection admissions in 2005.

However, for primary heroin inhalation admissions, the proportion of planned medication-assisted opioid therapy remained stable at about 30% of primary heroin inhalation admissions during the decade.
**Heroin is leading cause of drug-related deaths in Oregon**

PORTLAND, OR (KPTV) - More than 200 people died of drug-related deaths in Oregon in 2012, and heroin was the leading cause.

The Oregon State Medical Examiner released statistics Tuesday showing 233 deaths tied to illegal drugs for the year, a 7 percent drop from 2011. However, 2011 had the highest statewide total of drug-related deaths on record. The figures for 2012 represent the third highest overall total.

Heroin was the leading cause of drug-related deaths in 2012, accounting for 147 cases.

Cocaine-related deaths, 19, were the lowest for the state since 2000 and a 43 percent drop from 2011. There were 69 deaths linked to cocaine in 2000.

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**Drug-related Statistics in Oregon**

A review of the 233 illicit drug-related deaths and their frequency of use in those deaths in 2012 reflected:

- Heroin was the leading cause with 147 recorded deaths; a 2.5 percent increase over the previous record number (143) recorded in 2011. Sixty-five (65) percent of all drug-related deaths were associated with heroin use.
- Cocaine-related deaths (19) in 2012 were the lowest recorded since 2000 and a 43 percent drop from last year’s 33 deaths. The highest number of Cocaine-related deaths (69) occurred in 2000. The 19 cocaine-related deaths occurred only in Marion, Multnomah, and Washington counties.

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**Statistics and Trends**

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* Data in brackets indicate statistically significant change from the previous year.

**Treating Heroin Addiction**

- A range of treatments including behavioral therapies and medications are effective at helping patients stop using heroin and return to stable and productive lives.
- Medications include buprenorphine and methadone. Naltrexone treatment and a new long-acting version given by injection in a doctor’s office may increase this treatment’s efficacy. Another drug called naloxone is sometimes used as an emergency treatment to counteract the effects of heroin overdose.

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Methamphetamine was blamed for 93 deaths around the state.

The medical examiner’s office said multiple drugs were counted among some of the individual deaths.

The majority of Oregon counties noted the same or less drug-related deaths for the year. However, Jackson County jumped from 9 to 19 and Marion County increased from 10 to 19.

Multnomah County drug-related deaths decreased from 19 to 103 in 2012, however, the county still accounted for about half of the state’s total.

Five Oregon counties recorded drug-related deaths in 2012 after none the previous year, including three in Klamath County and two in Hood River County.
Chronic use of heroin leads to physical dependence, a state in which the body has adapted to the presence of the drug. If a dependent user reduces or stops use of the drug abruptly, he or she may experience severe symptoms of withdrawal. These symptoms—which can begin as early as a few hours after the last drug administration—can include restlessness, muscle and bone pain, insomnia, diarrhea and vomiting, cold flashes with goose bumps ("cold turkey"), and kicking movements ("kicking the habit"). Users also experience severe craving for the drug during withdrawal, which can precipitate continued use and/or relapse.
Do not forget the following:

- Alcohol
- Nicotine
- Methamphetamine
- Cocaine
- Marijuana
- Ecstasy
- Spice
- Bath Salts

Questions?