

# Harm Reduction Strategies to Combat the Opioid Emergency/Overdose Crisis



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## Learning Objectives

- Review the prevalence of substance-related deaths in the US
- Define harm reduction and its application to substance use disorders (SUD)
- Identify harm reduction strategies in relation to illicit substance use
- Review naloxone access in the state of IL
- Identify other harm reduction resources available to pharmacists and providers

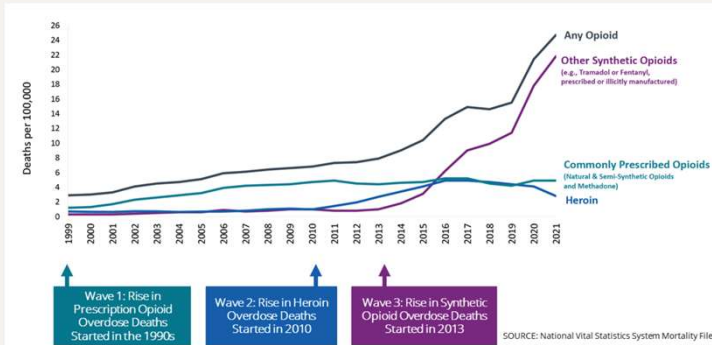
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## The Opioid Crisis



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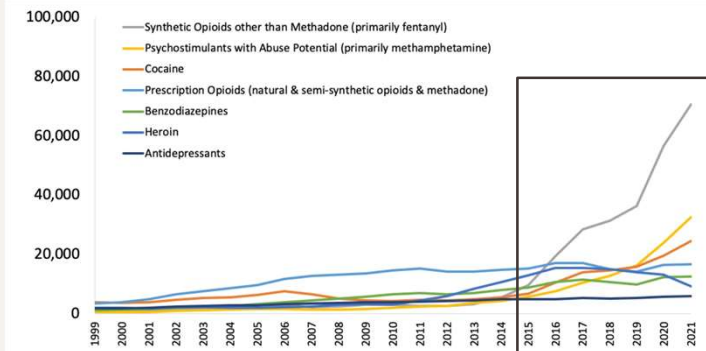
## Three Waves of Opioid Overdoses



<https://www.cdc.gov/opioids/basics/epidemic.html>

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## All Drug-Involved Overdose Deaths



<https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates>

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## US Overdose Statistics

- 600,000 opioid overdose deaths from 1999-2021
- 107,000 total overdose deaths in 2021
  - 75% were due to opioids
  - 16% increase from 2020



<https://www.cdc.gov/opioids/basics/epidemic.html>

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## Why Fentanyl?

Synthetic opioid 50x more potent than heroin and 100x more potent than morphine

Prescribing rates of fentanyl have NOT increased

Overdose rates driven by illicitly manufactured fentanyl (IMF) as seen drug submissions to law enforcement

Can be cheaply produced; creates a "synergistic high"

<https://www.cdc.gov/opioids/basics/epidemic.html>

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## Fentanyl Contamination

IMF can be mixed into heroin, cocaine, or methamphetamine

May be cost-saving as a "cutting" ingredient to bulk another product

"Synergistic high" to ensure customers come back

Northeast has highest rates of fentanyl deaths, followed by Midwest and South

<https://www.cdc.gov/opioids/basics/epidemic.html>

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## Fentanyl Analogs

Will vary from being less to more potent than fentanyl

Difficult to assess true potency as lack of human studies

Analogs seen in the US

- Furanylfentanyl
- Acetylfentanyl
- Carfentanil

Carfentanil is considered 10,000x more potent than morphine

<https://www.cdc.gov/drugoverdose/deaths/opioid-overdose.html>

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## Opioid Binding Affinities

Smaller  $K_i$  = tighter binding affinity to mu receptors

Drug	Human $K_i$ (nM)	Marmoset $K_i$ (nM)	Guinea Pig $K_i$ (nM)
Tramadol	12,500		
Meperidine	450		
Methadone	3.38		
Fentanyl	1.35	$1.32 \pm 0.35$	$1.20 \pm 0.2$
Morphine	1.14		
Oxymorphone	0.406		
Hydromorphone	0.365		
Sufentanil		$0.24 \pm 0.05$	
Carfentanil		$0.22 \pm 0.08$	$0.024 \pm 0.004$
Lofentanil		$0.055 \pm 0.006$	$0.023 \pm 0.004$

<https://cen.acs.org/content/dam/ken/95/24/09524-scitech3.pdf>  
Ellis GR, et al.

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## Risk Factors and Symptoms of Opioid Overdose

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## Risk Factors for Opioid Overdose

- Prescriptions with higher daily dose (>50 MME/day)
- Concurrent use of other CNS depressants
  - Sedatives
  - Alcohol
- Recent abstinence from opioids
  - Decreased tolerance to previous daily dose
  - Ex: Heroin users that relapse after not using for some time
- Concurrent illicit opioid use
  - Especially if injecting IV
  - Unknown purity/potency of opioid

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## Risk Factors for Opioid Overdose

- Comorbid conditions
  - Obstructive sleep apnea (OSA)
  - Pulmonary disease (COPD, asthma)
- Adverse childhood experiences
  - Neglect
  - Abuse
  - Parental incarceration
  - Exposure to violence (witnessed, threatened, victim)

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## Opioid Risk Tool (ORT)

- Designed to identify risk of aberrant behaviors indicative of misuse
  - Using additional opioids than prescribed
  - Forging prescriptions
  - Seeking euphoric effect of use
  - IV drug use
  - Abnormal UDS
  - Obtaining opioids from multiple providers
  - Requesting early refills

Opioid Risk Tool		
<small>This tool should be administered to patients upon an initial visit prior to beginning opioid therapy for pain management. A score of 3 or lower indicates low risk for future opioid abuse, a score of 4 to 7 indicates moderate risk for opioid abuse, and a score of 8 or higher indicates a high risk for opioid abuse.</small>		
Mark each box that applies	Female	Male
<b>Family history of substance abuse</b>		
Alcohol	1	3
Illegal drugs	2	3
Rx drugs	4	4
<b>Personal history of substance abuse</b>		
Alcohol	3	3
Illegal drugs	4	4
Rx drugs	5	5
Age between 16–45 years	1	1
History of preadolescent sexual abuse	3	0
<b>Psychological disease</b>		
ADD, OCD, bipolar, schizophrenia	2	2
Depression	1	1
Scoring totals		

Low risk = 0-3    Mod risk = 4-7    High risk = ≥ 8

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## Acute Opioid Intoxication Presentation

### Mental Status

- CNS depression, coma

### Vital Signs

- Bradypnea, apnea, hypothermia, bradycardia, hypotension

### Other manifestations

- Hyporeflexia, pulmonary edema

### Pupils

- Miosis

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## Acute Opioid Intoxication

### Depressed mental status

- Euphoria
- Stupor
- Coma
- Seizures (tramadol, meperidine, tapentadol)

### Respiratory depression

- Decreased respiratory rate and tidal volume (RR < 12)
- No respirations
- Neurogenic pulmonary edema

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## Other Signs and Symptoms

### Decreased bowel sounds

- Constipation

### Myoglobinuria

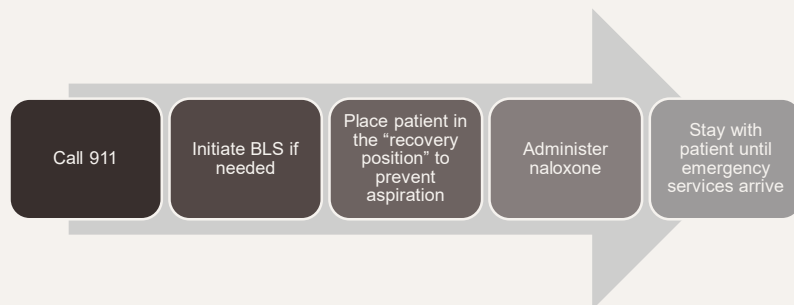
- Stupor associated rhabdomyolysis, renal failure, compartment syndrome

### Hepatotoxicity

- Elevated LFTs

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## Treating Opioid Overdose



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## Harm Reduction

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## Definition

“Interventions aimed at reducing negative effects of health behaviors without necessarily extinguishing the problematic health behaviors completely”



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## Examples of Harm Reduction Outside of Substance Use



Condoms



Sunscreen



Motorbike helmets



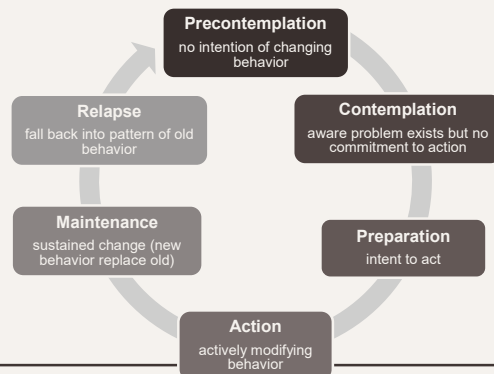
Seatbelts



Bullet-proof vests for police force

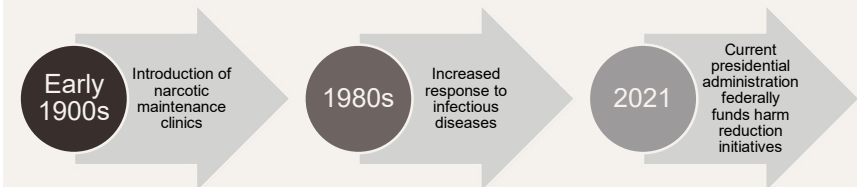
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## Trans-Theoretical Model of Change



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## Evolution of Harm Reduction



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## Harm Reduction in Substance Use

Public health approach to reduce negative consequences associated with substance use

People with SUD are entitled to **basic human rights** and services to reduce harmful effects of substance use

Personalize treatment on the patient's stage of change

Improved quality of life and well-being for the individual and community are markers of success

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## Other Elements of Harm Reduction

Recognize there are harms associated with substance use

Acknowledge some methods of substance use are safer than others

Use non-judgmental and non-coercive approaches to provide services

Encourage people with **lived experience** to provide input into the creation of services

Affirm people who use substances as their primary agent for reducing negative consequences and empower them to support others

Acknowledge forms of discrimination and social inequalities affect a person's vulnerability and capacity for effectively reducing the harms of substance use

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## Evidence for Harm Reduction in Substance Use

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## Keep in Mind!

- These are examples of harm reduction in OUD
- Local laws may dictate which services are allowed
- Check with local laws and institutions prior to implementing new services
- However, language we use and education we provide are not restricted by law

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## Harm Reduction Strategies

Overdose education and naloxone distribution (OEND)

Syringe services programs (SSPs)

Infection prevention

Safe disposal

Patient education

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## Opioid Overdose Prevention and Response with Naloxone

- Recommended for those with OUD
- Includes education about risk reduction
- Observational data shows community-based distribution is associated with:
  - Decreased opioid overdose deaths
  - Reduced opioid-related ED visits
  - Reported beneficial behaviors with opioid use
- No association with increased drug use



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## Naloxone Review

- MOA: Opioid antagonist that competitively binds at all 3 opioid receptors
  - Mu, kappa, delta
- Rapid reversal of opioid agonists
  - Reversal of hypotension and sedative effects
  - Increase in respiratory rate within 1-3 mins
- Induces withdrawal symptoms in opioid-dependent or intoxicated patients
  - Sweating, nausea, vomiting, tremors, headaches
- Formulations
  - Nasal spray, solution for IM/IV administration



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## Naloxone Formulations



### Narcan® Nasal Spray

- Single-use intranasal spray (0.1 mL)
- 1 box contains **two, 4 mg dose** of naloxone



### Kloxado® Nasal Spray

- Single-use intranasal spray (0.1 mL)
- 1 box contains **two, 8 mg dose** of naloxone

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## Nalmefene – Opvee®

- Opioid antagonist approved in May 2023 for known/suspected opioid overdose
- Similar MOA to naloxone – possibly higher affinity for kappa and mu opioid receptors
  - Greater potency than naloxone
- Formulations
  - Nasal spray, IV injection
- Utility
  - Known illicit substance user in areas with higher rates of fentanyl analogs



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## Good Samaritan Protections (GSPs)

People witnessing an opioid overdose do not:

- Call 911 due to fear of being prosecuted for possession/paraphernalia
- Administer naloxone due to fear of liability for providing care

GSPs provide legal protection to those who provide emergency care to people who are injured or in danger

Protect bystanders administering naloxone or calling 911 from civil and criminal prosecution

All 50 states and DC have enacted these protections

- Exact protections vary from state to state

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## GSPs and Harm Reduction

- States with Good Samaritan Laws have **15% lower incidence of deaths** from opioid overdose than states without
- Implementation of New York's Good Samaritan Law increased 911 calls
  - People properly trained with the law were 3x more likely to call 911 after an overdose compared to those not educated correctly
- Good Samaritan Laws enactment are not associated with increased nonmedical opioid use

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## Syringe and Clean Works Access Programs

- Intended to reduce spread of bloodborne infections (HCV, HIV) through distribution of safe injection kits
- Often these programs provide additional harm reduction services
  - HIV/HCV testing
  - Education about decreasing risky behavior
  - Linkage to treatment services (SUD, MH, PCP)
  - Naloxone distribution
  - Condom distribution

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## Syringe and Clean Works Access Programs

- Associated with **decreased** risky injection behavior (sharing needles) and HIV seroconversion
  - Multiple studies demonstrate positive outcomes while others show no difference
  - Authors believe education about risk reduction with syringe access may be needed for efficacy
- Insufficient evidence demonstrating decreased HCV seroconversion
- Associated with decreased abscesses

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## Syringe and Clean Works Access Programs

### **NOT** associated with the following harms to the community

- Number of new persons who use drugs
- Frequency of injecting substances
- Discarded needles in public spaces
- Crime in the community

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## Safe Medication Disposal

- Intended to reduce the number of unused pharmaceuticals at home
- DEA National Drug Take-Back Day
  - Normally every April and October
  - Law enforcement sites set up take-back program for the day
- DEA-authorized collector
- Pharmacy mail-back programs
- Illicit drugs are not allowed in any of the above methods
- No research on the impact on SUD outcomes



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## Point-of-Care (POC) Testing – Serology

### Increases access to screening for those unaware of infection

- 20-30% living with HIV are unaware
- Up to 75% living with HCV are unaware

### Requires clinical laboratory improvement amendments (CLIA)-waived test

- Simple to conduct with minimal risk of error

### HIV/HCV testing

- Multiple POC tests available: HCV antibody, HIV-1 antibody/antigen
- Requires access disease management programs: in case of positive results

### POC testing associated with

- Increased in number of people tested
- Decrease in loss to follow-ups after positive test → engaged in treatment
- Successful linkage to treatment

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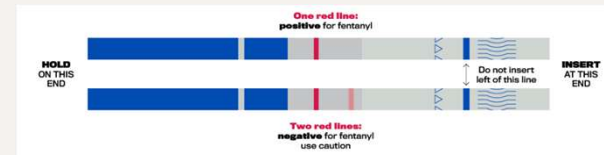
## POC Testing – Fentanyl Contamination Testing

- Contamination found in heroin, methamphetamine, cocaine, and other illicit
- Most are not aware when substances are contaminated with fentanyl
- Fentanyl test strips (FTS) for UDS are used off-label testing of illicit drug supplies
  - Requires education to properly dilute sample and avoid false positives/negatives
  - People were able to demonstrate proper use of FTS and reported using FTS given to them
  - Associated with changes in drug use behavior when a sample is positive

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## How to Use Fentanyl Test Strips

- Put small amount of drug aside in clean, dry container
- Add water to container and mix
- Place wavy end of FTS in water and let absorb for ~15 seconds
- Wait 2 to 5 min to read results



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## Patient Education

Have naloxone available

Avoid using alone

Avoid sharing or reusing injection supplies

Go slow, use less

Try an alternative route of administration to injection

Test products using FTS when possible

Seek healthcare if naloxone is used, new or worsening wound/infection

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## Naloxone Access in Illinois

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## IL Naloxone Laws

IL Naloxone Expansion Act (2010)	• Legalized non-medical persons to administer naloxone to prevent a fatal opioid overdose
Drug Overdose Prevention Program (2012)	• Permits healthcare professionals to prescribe and dispense naloxone either directly or via standing order to any person who meets criteria • Provides the prescriber with protection from professional disciplinary action
IL Emergency Medical Services Access Act: Good Samaritan Law (2012)	• Protects individuals from possession charges for small amounts of illegal drugs when calling 911 or taking someone to an emergency room for an overdose
Illinois Public Act (2015)	• Enables nonmedical personnel to administer naloxone without liability

<https://www.dhs.state.il.us/page.aspx?item=58142>

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## Heroin Crisis Act – Lali’s Law (2015)

Required all individual and group health insurance plans to cover at least one opioid antagonist

Strengthened Illinois Prescription Monitoring Program (ILPMP)

Greater access to medication-assisted treatment for OUD

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## Illinois Naloxone Standing Order

Allows pharmacies and other eligible entities to provide naloxone to anyone with the intent to respond to a suspected opioid overdose without a direct prescription

Pharmacists must complete approved training & education to access the standing order

Pharmacies utilizing the standing order must report naloxone dispensing information to the Illinois Prescription Monitoring Program (PMP)

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## OTC Naloxone

- FDA approved OTC naloxone 4 mg in March 2023
- Other formulations/doses are still prescription only
- FSA eligible: \$30-50 per box



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## Additional Considerations and Resources

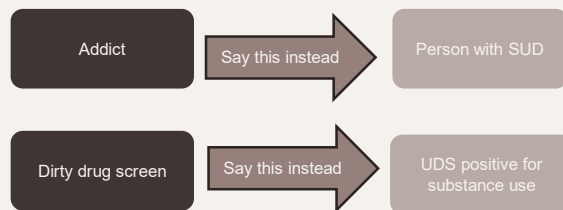
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## Person First Language

- Intended to decrease stigma, perpetuation of stereotypes, and reinforcement of negative attitudes
- Identifies person with condition versus someone as a condition
- Evidence that the language healthcare professionals use affects patient care
  - Providers tend to assign more blame and use punitive language when using stigmatizing words
- Considered standard in scientific journals, government publications, various organizations and United Nations

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## Harm Reduction Through Stigma-Free Language



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## People with Lived Experience

- Encourages people with lived experience to provide input into the creation of services and materials
- Pharmacists are frequently involved with developing education materials, treatment guidelines and new services
- Ensures material and services meet the needs of people living with SUD
  - Examples: developing handouts on how to start buprenorphine
  - Increasing the efficiency of providing OUD pharmacy service

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## National Resources



- **Harm Reduction Coalition**

- National advocacy and capacity-building organization with online resources as well as links to local resources
- [www.harmreduction.org](http://www.harmreduction.org)

- **Drug Policy Alliance**

- National advocacy organization with online resources including examples of successful harm reduction efforts
- [www.drugpolicy.org](http://www.drugpolicy.org)

- **Substance Abuse and Mental Health Services Administration (SAMHSA)**

- US Department of Health and Human Services agency that includes evidence-based practices resources (ex. alcohol management as harm reduction)
- [www.samhsa.gov](http://www.samhsa.gov)

- **DEA Controlled Substance Public Disposal Locations Search**

- [Link](#)

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## Summary



HR strategies are evidence-based treatments to reduce negative consequences associated with OUD and have not been found to increase use



Key is acceptance that people who use substances are entitled to basic human rights and services to reduce harmful effects of substance use



Laws for some harm reduction strategies vary from state to state



Pharmacists have opportunities to engage in evidence-based HR strategies to reduce the morbidity and mortality for people experiencing OUD

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