Drug Addiction Science

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Drug Overdose Rates are Increasing:
Estimated Age-adjusted Death Rates per 100,000 for Drug Poisoning by County.

70,237 Deaths in 2017
(47,600 from Prescription and Illicit Opioids)

Evolution of Drivers of Opioid Overdose Deaths:

- Analgesics
- Heroin
- Fentanyl

Source: NCHS WONDER

- 28,466 “Fentanyl”
- 17,029 Prescribed
- 15,482 Heroin
Opioid Overdose Death Rates by Race/Ethnicity

SOURCE: CDC/NCHS National Vital Statistics System, Mortality
Heroin Overdose Death Rates by Race/Ethnicity

SOURCE: CDC/NCHS National Vital Statistics System, Mortality
Other Synthetics  Overdose Death Rates by Race/Ethnicity

SOURCE: CDC/NCHS National Vital Statistics System, Mortality
Sustained Impact of the **Opioid Crisis**: U.S. Overdose Death Rates over 50 years

Exponential increases in overdose death rates 1979—2016: *Fundamental underlying processes?*

Jalal et al., *Science* 2018

Source: CDC WONDER
Rising rates of HCV

Counties Deemed Highly Vulnerable to Rapid Dissemination of HCV or HIV

Acute Cases of HCV in USA

HIV (and Hepatitis C) Outbreak Linked to Oxymorphone Injection Use in Indiana, 2015

Source: Van Handel et al, JAIDS 2016
Opioid Use and Misuse During Pregnancy

17% of pregnant women are prescribed an opioid during pregnancy.

Buprenorphine resulted in a shorter duration of NAS treatment and length of hospital stay than treatment with morphine.


Overlap of Benzodiazepines and Opioids

Opioid Analgesic ED Visits and OD Deaths Involving Benzodiazepines & Benzodiazepine ED Visits and OD Deaths Involving Opioids

AAPC = 8.4% (95% CI 7.1%-9.7%)

AAPC = 1.5% (95% CI 0.8%-2.2%)

ENVIRONMENTAL AVAILABILITY: Current Opioid Crisis Originated with Prescribing Increases

Opioid prescriptions

*Tripled to MORE THAN 200 MILLION prescriptions in recent years*
People misusing analgesics **Directly & Indirectly** obtain them by prescription.

SOURCE WHERE PAIN RELIEVERS OBTAINED FOR MOST RECENT MISUSE

Source: Han, Compton, et al. Annals of Internal Medicine 2017

**Diagram:**
- 87% obtained **Prescription**
- 54% obtained from **Friend/Relative**
- 10% obtained from **Other**
ECONOMICS: Heroin Increases Due to Lower Price and Greater Availability

The relentless marketing of pain pills. Crews from one small Mexican town selling heroin like pizza. The collision has led to America’s greatest drug scourge.

The True Tale of America’s Opiate Epidemic

DREAMLAND

SAM QUINONES

"Retail" Price Per Pure Gram

HHS Five-Point Opioid Strategy

1. Better addiction prevention, treatment, and recovery services
2. Better data
3. Better pain management
4. Better targeting of overdose reversing drugs
5. Better research
Opioid Prescribing Guidelines

- Intended for primary care providers
- Applies to patients >18 years old in chronic pain outside of end-of-life care
- Builds on joint CDC, NIDA, ONC, SAMHSA summary on “Common Elements in Guidelines for Prescribing Opioids for Chronic Pain” and the NIH Pathways to Prevention for Opioids in Treating Chronic Pain
- Published March 15, 2016

Recent Landscape for Guidelines:
- Small Number
- Outdated
- Not Conflict Free

Solution.... Opioid Prescribing Guidelines
Opioid Effect
Log Dose

Full Agonist
(Methadone: Daily Dosing)

Partial Agonist
(Buprenorphine: 3-4X week)

Antagonist
(Naltrexone: ER 1 month)

• **DECREASES:**
  • Opioid use
  • Opioid-related overdose deaths
  • Criminal activity
  • Infectious disease transmission

• **INCREASES**
  • Social functioning
  • Retention in treatment

But MAT is highly underutilized!
Relapse rates are very high!

**Medication Assisted Treatment (MAT)**

**OUD Cascade of Care in USA**

Current estimates
Treatment gap
90% goal

*Williams AR, Nunes E, Olfson M.*
*Health Affairs Blog, 2017*
• Complex professional, economic and social aspects of influenced the crisis and suggest the need *multipronged responses*.  
• The severity of the opioid crisis demands *urgent action*. 

**Summary:**

- Advancing Addiction Science
- Resources for Medical Students, Resident Physicians & Faculty

www.drugabuse.gov/coe

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