Trends & Opportunities to Shift the Course of an Epidemic:
*The View from Rhode Island*

Traci C. Green, PhD, MSc
Deputy Director, Boston Medical Center Injury Prevention Center
Associate Professor of Emergency Medicine & Epidemiology
Boston University School of Medicine & The Warren Alpert School of Medicine at Brown University
Chair, RI Drug Overdose Prevention & Rescue Coalition
Opioid Overdose Epidemic

U.S. DRUG OVERDOSES

25 deaths per 100,000 people

Other*
Psychostimulants**
Narcotics other than heroin and cocaine
Heroin
Cocaine
Alcohol

Unspecified
Drug name not identified on death certificate

Pharmaceuticals
Undetermined Intent
Intentional self-harm
Unintentional self-harm

*Includes cannabis, LSD, opium, mescaline, mushrooms, and all cases of overdose by assault
**Includes methamphetamines, MDMA (ecstasy), and caffeine

Drug overdose data from the CDC National Center for Health Statistics’s multiple cause of death database (WONDER). Compiled by Popular Science.
Epidemiological Triad

- **Host (Person):** Past/current history of SUD, use in non-prescribed doses/other indications, age, race, gender, healthcare setting employment, psychiatric dual diagnosis
- **Environment:** Drug availability-Overprescribing, underprescribing, PDMP, Good Samaritan law, proximity of evidence based treatment, trafficking prosecutions
- **Agent (Drug):** Faster onset of action, higher magnitude of dopamine surge, route of administration, purity
HOST
Use as prescribed

Prescribed Misusers
- Psychiatric problems
- Older
- More women
- Pain, medical problems
- Oral

(Medically healthy) Abusers
- Combined with alcohol
  - Younger
  - More men
  - Low/no pain
  - Oral, snort

Illicit users
- Youngest
- Legal problems
- Other illicit drugs
- Snort, inject

B=Heroin only overdose deaths
*Greater urban concentration
*more deaths occurring in public

D=Prescription opioid overdose deaths
•Greater suburban/small town distribution
•*more deaths occurring at home


Patterns of communities, over time:
Low Hazard, Emergent, Persistent
<table>
<thead>
<tr>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demand</strong></td>
</tr>
<tr>
<td>• Prescriber Toolkit</td>
</tr>
<tr>
<td>• Clinician Prescription Monitoring Program Resources</td>
</tr>
<tr>
<td>• Targeted Medical Education</td>
</tr>
<tr>
<td>• Public Awareness Campaign</td>
</tr>
<tr>
<td>• Expanded treatment (especially medication assisted treatment)</td>
</tr>
<tr>
<td>• Recovery centers</td>
</tr>
<tr>
<td><strong>Supply</strong></td>
</tr>
<tr>
<td>• Prescriber Toolkit</td>
</tr>
<tr>
<td>• Clinician Prescription Monitoring Program Resources</td>
</tr>
<tr>
<td>• Targeted Medical Education</td>
</tr>
<tr>
<td>• Medication Dropboxes at Police Stations</td>
</tr>
<tr>
<td><strong>Harm</strong></td>
</tr>
<tr>
<td>• Naloxone Distribution to those at risk</td>
</tr>
<tr>
<td>• Naloxone Access for all</td>
</tr>
<tr>
<td>• First Responder Prevention</td>
</tr>
<tr>
<td>• Good Samaritan Law</td>
</tr>
<tr>
<td><strong>Structural</strong></td>
</tr>
<tr>
<td>Drug Poisoning as part of HEALTH Injury program</td>
</tr>
<tr>
<td>BHDDH Emergency regulations: drug treatment programs</td>
</tr>
<tr>
<td>HEALTH Emergency regulations: pharmacy and prescriber</td>
</tr>
<tr>
<td>Reporting/data collection for surveillance and evaluation</td>
</tr>
</tbody>
</table>
Regional Differences

Heroin initiation over time by US census region

- Northeast n=19,611
- South n=192,887
- West n=162,793
- Midwest n=153,737
- National
ENVIRONMENT
CT Substance Abuse-related Disciplinary Actions Against Health Professionals, 2008-2011

- 2008, NS: p=1.0
- 2009, $\chi^2=4.05, p=.04$
- 2010, $\chi^2=3.16, p=.07$
- 2011, NS: $p=.49$

- % of all state cases that are SA related
- % of study site cases that are SA related
- Study site prescription opioid overdose deaths
Removal of a local doctor reduced prescription opioid supply, price of the pain pills “got so expensive, and people saw an opportunity” for bringing heroin into the community

“Since they cracked down on the OxyContin [i.e., reformulated OxyContin], and a couple of the doctors, it’s [prescription opioid abuse] a little less ‘cause, I don't know, whatever it is, the DEA, you know, got a better watch on it, it’s, it’s a little bit harder [to get the pain pills]. But people are still getting their hands on it, you know, and they’re still selling them. So, you know, even though they’re not selling the OxyContin, or prescribing the OxyContin, they’re prescribing other things, it’s just, like, MSContins, Percocet, Perc 10s. If not opiates, it’s Benzos.”

Another participant summarized the trends as: “A few years ago [the pain pill problem] was much worse. They cracked down pretty good, took out the ‘Dr. Feelgood’. Then people moved on to heroin.”
AGENT
Accidental Drug Overdose in RI July 2013 - Feb 2015

- Total accidental drug deaths
- Opioid of any type
- Illicit drug (other than THC)
- Fentanyl of probable illicit source

*provisional data
Overdose and Fentanyl-involved death rate, 2014-2015

Overdose-related Death Rates per Capita by City (2014-2015)

- Fentanyl Present
- No Fentanyl Present
Substance Presence in Fentanyl and Non-Fentanyl Overdose Related Deaths (2014-2015)

34% No C/B/H

19% Cocaine
8% Benzodiazepine
16% Heroin

29% No C/B/H

13% Cocaine
4% Benzodiazepine
11% Heroin
22% Other

144 (40.3%)
213 (59.7%)

Fentanyl No Fentanyl
Fentanyl Trends & *What they Imply*

- Responsive, flexible, interdisciplinary
- Bridge & Create better data
  - Emergent trends, public health surveillance protocols
  - Specimen collection, rapid testing, presumptive tests
- Innovate interventions
  - Public Health, Public Safety partnerships, responses
  - Invest in highest risk settings
- Massive Demand Reduction efforts, investments
  - Prioritize Evidence-Based Treatment, Recovery Supports
- Mitigate Risk & Reduce Stigma at *every opportunity*
Rhode Island Governor’s Strategic Plan for Overdose & Addiction

- Locally derived, data driven, evidence based
- Sustainable
- Responsive
- Extraordinary
- Measureable
- Stigma-reducing

- “Dashboard”: public facing, privileged stakeholder access for transparency, accountability
- Communication strategy to market approach
Four initiatives to alter an epidemic

- **Treatment Strategy: Every Door is the Right One**

  - Medication assisted treatment at every location where opioid users are found
    - medical system (EDs, hospitals, clinics), criminal justice system, opioid treatment programs, community

  ![Graph showing trends in overdose deaths and patients treated](image)

  **Buprenorphine and Methadone in Baltimore:**

  Schwartz et al. AJPH 2013.
Leverage PMP for tracking Naloxone dispensing, affordable sustainable source for community & first responders, & destigmatize indication for naloxone by creating an opt-out when dispensed any C2, syringe sale, or opioid+benzo fill within 30 days.
Prevention Initiative: Safer Prescribing and Dispensing

- Reduce dangerous prescribing of benzodiazepines through PMP alerts, guidelines for MAT/benzo use, provider education & “detailing”

Source: Park TW et al., BMJ 2015
Recovery Strategy: *Expand Recovery Supports*

<table>
<thead>
<tr>
<th></th>
<th>Pre-Implementation January-February 2014</th>
<th>Post-Implementation September 2014-February 2015</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Discharged Overdose Patients N= 68</td>
<td>Discharged Overdose Patients N=147</td>
<td></td>
</tr>
<tr>
<td>Naloxone Distribution</td>
<td>0</td>
<td>72 (49%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Educational Video</td>
<td>0</td>
<td>64 (43.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Recovery Coach Consultation</td>
<td>0</td>
<td>53 (36.1%)*</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Referral to Treatment</td>
<td>2 (2.9%)</td>
<td>65 (44.2%)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*83% of Recovery Coach Consultation had confirmed linkage to treatment within 48 hours.

Source: L. Samuels, 2015

- Large-scale expansion of peer-based recovery coach reach and capacity
  - ED, prison, community, “outbreak” based street outreach
Summary

- Think like an epidemiologist (or ask one to collaborate with you and your team!)
- Penetration of prescription opioids generated large, varied pool of people at risk, more networks
- Distinct patterns of overdose in people, place, time
- Suggest a range of intervention points
- Need largest impact on demand, greatest mitigation of harm as enforcement focuses on supply, criminal elements
- Vigilance
Questions/Comments

Traci.c.green@brown.edu
tcgreen@bu.edu

If you let her
“sleep it off,”
she may never wake up.

Drug overdose is the #1 cause of accidental death for adults in Rhode Island.
Learn how to spot an overdose and what to do.
Massachusetts State Police: Suspected Heroin Overdoses

Drug-involved mortality per 100,000 population (dashed line)

Number of Public and multiple overdose deaths

Rate per 100,000 population

- Public overdoses
- Multiple overdoses
- Rate per 100,000 population
Drug Involved Deaths
September 2014 - May 2015

* Drug involved death data from Boston, Springfield, and Worcester are currently unavailable.

Data Sources:
MA State Police
Boston University Medical Center
MassGIS

Investigators:
Thomas J. Stopke
Tadh Green

Cartographer:
Marga Hutcheson