

Overview of the Opioid Crisis and Role of Chemistry to Combat Emerging Drug Threats

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RISE IN OPIOID OVERDOSE DEATHS IN AMERICA

A Multi-Layered Problem in Three Distinct Waves

Nearly **450,000** people died
from an opioid overdose (1999-2018)

1990s

mark a rise in
prescription opioid
overdose deaths



Rx OPIOIDS

Include natural, semi-synthetic,
and methadone and can be
prescribed by doctors

2010

marks a rise in
heroin
overdose deaths



HEROIN

An illegal opioid

2013

marks a rise in
synthetic opioid
overdose deaths



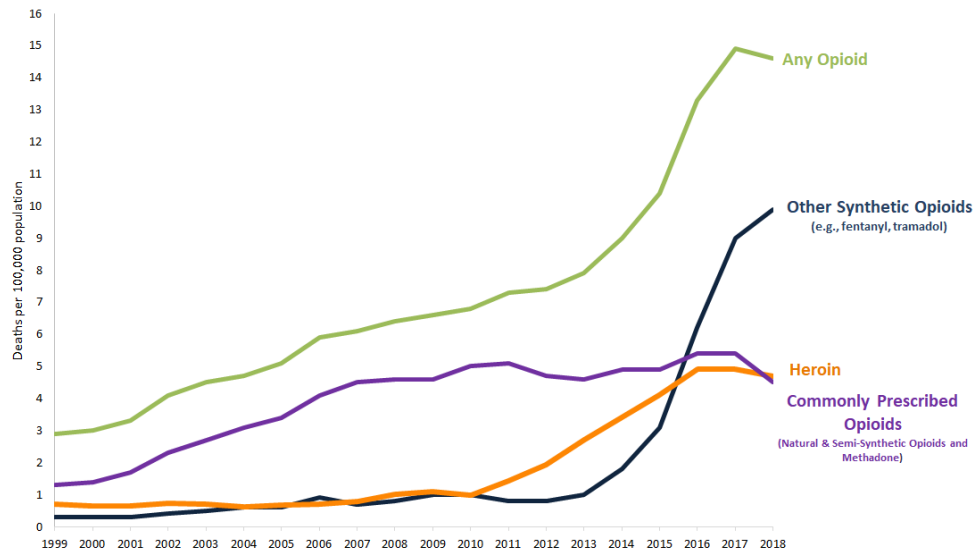
SYNTHETIC OPIOIDS

Include fentanyl and can be
illicitly made



Learn more about the evolving opioid overdose crisis: www.cdc.gov/drugoverdose

Overdose Death Rates Involving Opioids, by Type, United States, 1999-2018



SOURCE: CDC/NCHS, National Vital Statistics System, Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human Services, CDC; 2020.
<https://wonder.cdc.gov/>

www.cdc.gov
Your Source for Credible Health Information



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<https://www.cdc.gov/drugoverdose/data/analysis.html>

Considerations

What does the drug landscape look like?

What information is needed? And why?

Who collects this information?

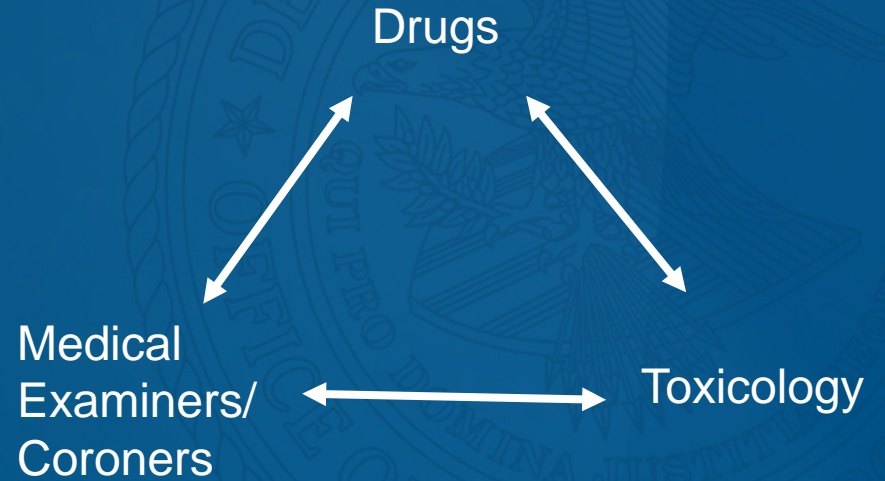
How is the information collected? How is it shared?

How can chemists get involved?

Where can you go for further information?

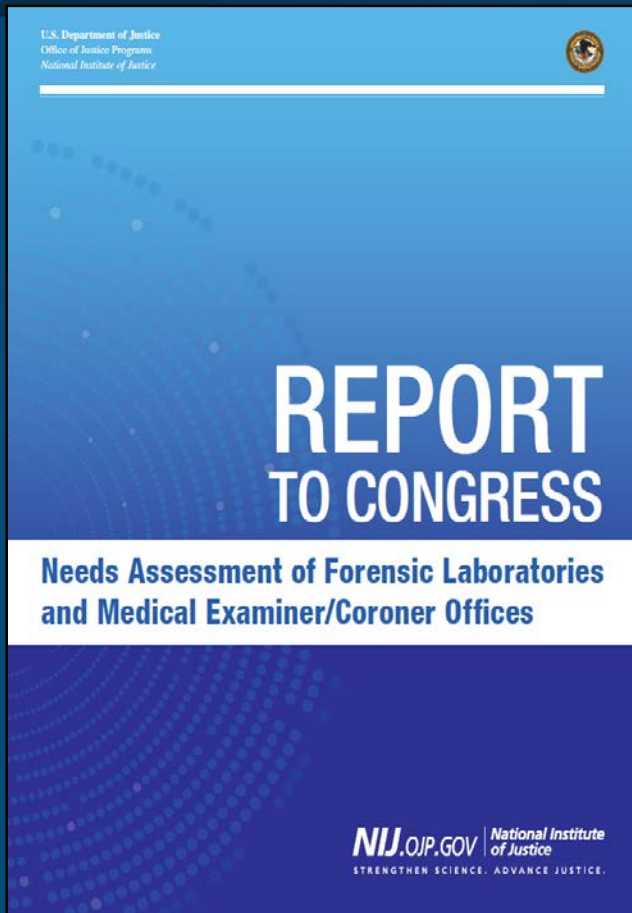


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<https://www.nflis.deadiversion.usdoj.gov/>



“Opioid Crisis and Emerging Drug Threats”:

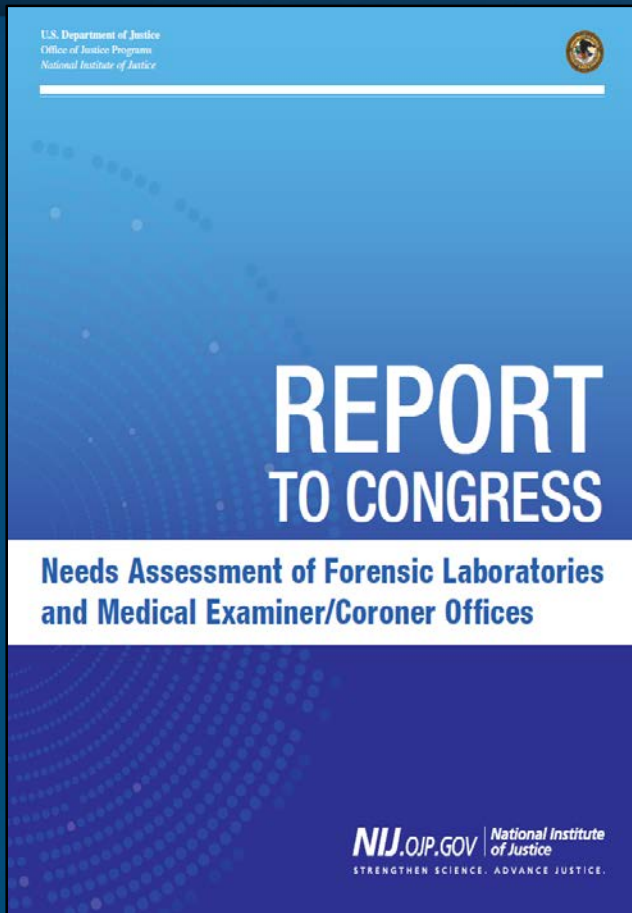
- Continuous emergence of new drugs (including synthetic drug analogues) and drug mixtures
- U.S. state and local forensic laboratory expenditures approx. \$270 million in 2015
- Expenditure increases: 37% for drugs, 25% for toxicology
- Dramatic increases in backlogs and turnaround times



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<https://nij.ojp.gov/library/publications/report-congress-needs-assessment-forensic-laboratories-and-medical>

<https://www.justice.gov/olp/forensic-science#needs>



“Opioid Crisis and Emerging Drug Threats”:

Identified Need:

“Resources to help forensic laboratories coordinate with public safety and public health officials to implement field detection equipment for developing actionable information and sharing timely data.”

Promising Practice:

Deploying field-portable drug detection instrumentation to provide preliminary results and triage casework, in coordination with a forensic laboratory for operational management and oversight.



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<https://nij.ojp.gov/library/publications/report-congress-needs-assessment-forensic-laboratories-and-medical>

<https://www.justice.gov/olp/forensic-science#needs>



2015



2016



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[https://sites.nationalacademies.org/DBASSE/CLAJ/Support for Forensic Science Research/index.htm](https://sites.nationalacademies.org/DBASSE/CLAJ/Support%20for%20Forensic%20Science%20Research/index.htm)

<https://forensiccioe.org/report-federal-investment-in-forensic-science-rd/>

NIJ Resources and Funding Opportunities

- Forensic Technology Center of Excellence (FTCoE)

<https://forensiccoe.org/>

Landscape study of field portable devices for presumptive drug testing. (2018)

<https://rti.connectsolutions.com/alsfpd/>

- “Forensic Science R&D for Criminal Justice Purposes” solicitation

<https://nij.ojp.gov/funding/opportunities/nij-2020-17294>

- “Testing and Interpretation of Physical Evidence in Publicly Funded Forensic Laboratories” solicitation

<https://nij.ojp.gov/funding/opportunities/nij-2020-17293>

- Drugs and Crime Program

<https://nij.ojp.gov/topics/drugs>

- Fellowship and Student Programs

<https://nij.ojp.gov/funding/fellowship-programs>

- Connecting Researchers with Forensic Laboratories

<https://nij.ojp.gov/topics/forensics/connecting-researchers-forensic-laboratories>

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Further information

- Morrow, J. et al. The opioid epidemic: Moving toward an integrated, holistic analytical response. *Journal of Analytical Toxicology*, 2019. <https://doi.org/10.1093/jat/bky049>
- The Opioid Detection Challenge: <https://www.opioiddetectionchallenge.com/>
- American Society of Crime Laboratory Directors (ASCLD) Opioid Resource Center. <https://www.asclcd.org/opioid-resource-center/>
- National Drug Early Warning System (NDEWS). National Institute of Drug Abuse, Center for Substance Abuse Research. <https://ndews.umd.edu/>
- Speaker, P., Roper-Miller, J. The hidden costs of the opioid crisis and the implications for financial management in the public sector. *Forensic Science International: Synergy*, 2019. <https://doi.org/10.1016/j.fsisyn.2019.09.003>
- NIJ Forensic Technology Center of Excellence (FTCoE) Additional Resources
 - Opioid & Emerging Drug Threats Policy & Practice Forum, 2019
<https://forensiccoe.org/workshop/emerging-drug-opioid-forum-2019/>
 - NPS Discovery Toolkit <https://forensiccoe.org/nps-discovery-toolkit/>
 - Webinar Series: <https://forensiccoe.org/webinar/opioids-emerging-drug-threats-series/>
<https://forensiccoe.org/webinar/opioid-crisis-a-public-health-enemy-webinar-series/>

