

Model Opioids Biosurveillance Strategy

From an idea to public health practice

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Analysis. Answers. Action.

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Opioids Biosurveillance Task Force (OBTF)

Multi-disciplinary group of subject matter experts

- Medical toxicology
- Chemistry
- Forensic toxicology
- Epidemiology
- Clinical laboratory
- Law
- Injury prevention
- Birth defects and disability



APHL Opioids Biosurveillance Task Force

Model Opioids Biosurveillance Strategy for Public Health Practice



JULY 2020



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Opioids Biosurveillance in RI

RIDOH Advisory: Toxicology Report Submission Requirement for Suspected Non-Fatal Overdose Patients

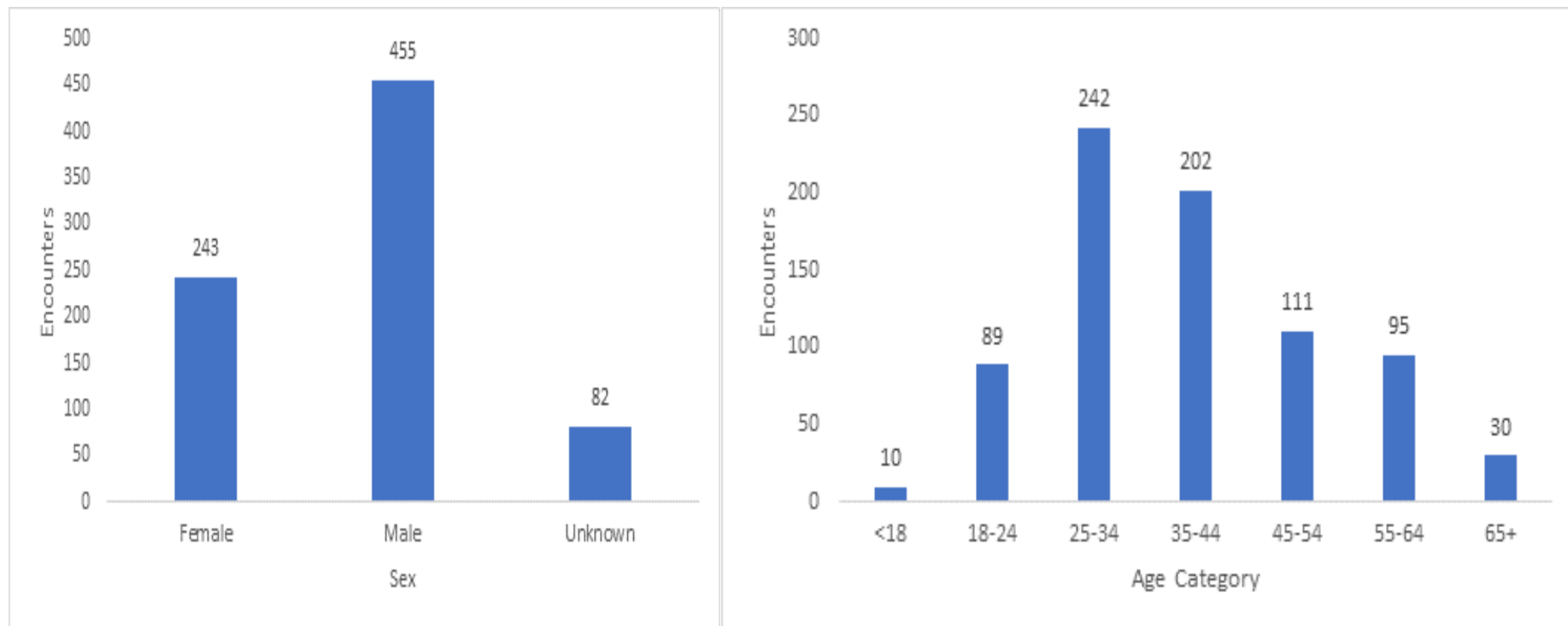
Dear Colleague,

The Rhode Island Department of Health (RIDOH) recognizes hospitals as important public health partners in reversing the local and national opioid crisis. Hospital laboratories are especially integral to these efforts, with access to data that can inform public health responses to this ever-changing epidemic. (...)

Related to the Levels of Care, regulations [on Opioid Overdose Prevention and Reporting \(216-RICR-20-20-5\)](#) and the [Reporting and Testing of Infectious, Environmental, and Occupational Diseases \(216-RICR-30-05-1, section 1.5.4.B.9\)](#) allow RIDOH to collect information and specimens related to suspected drug overdoses. Therefore, effective March 1, 2019, hospitals will be required to report toxicology results, including opioids and non-opioids, for all suspected, non-fatal overdose patients to RIDOH.

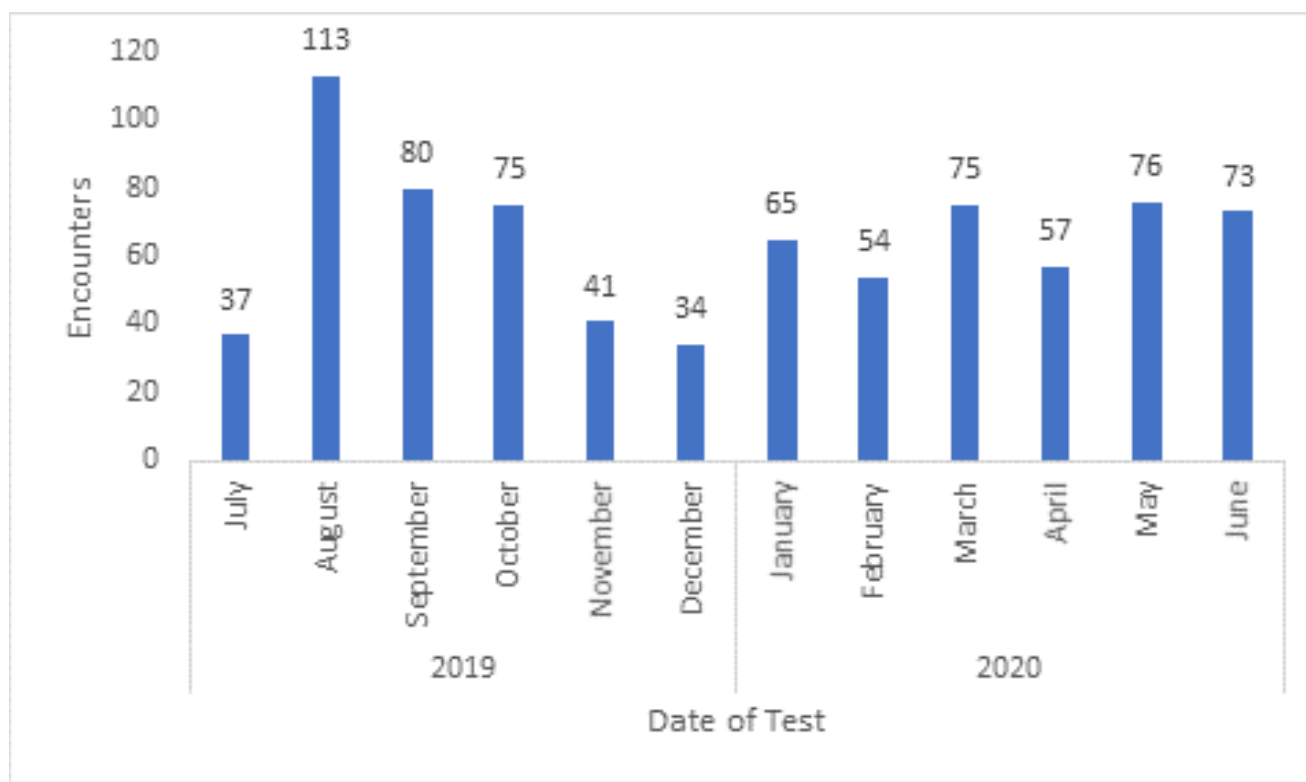
RI Biosurveillance Program

Specimens submitted for toxicology tests at RIDOH State Health Laboratories
Demographic data; July 2019-June 2020; n=780



RI Biosurveillance Program

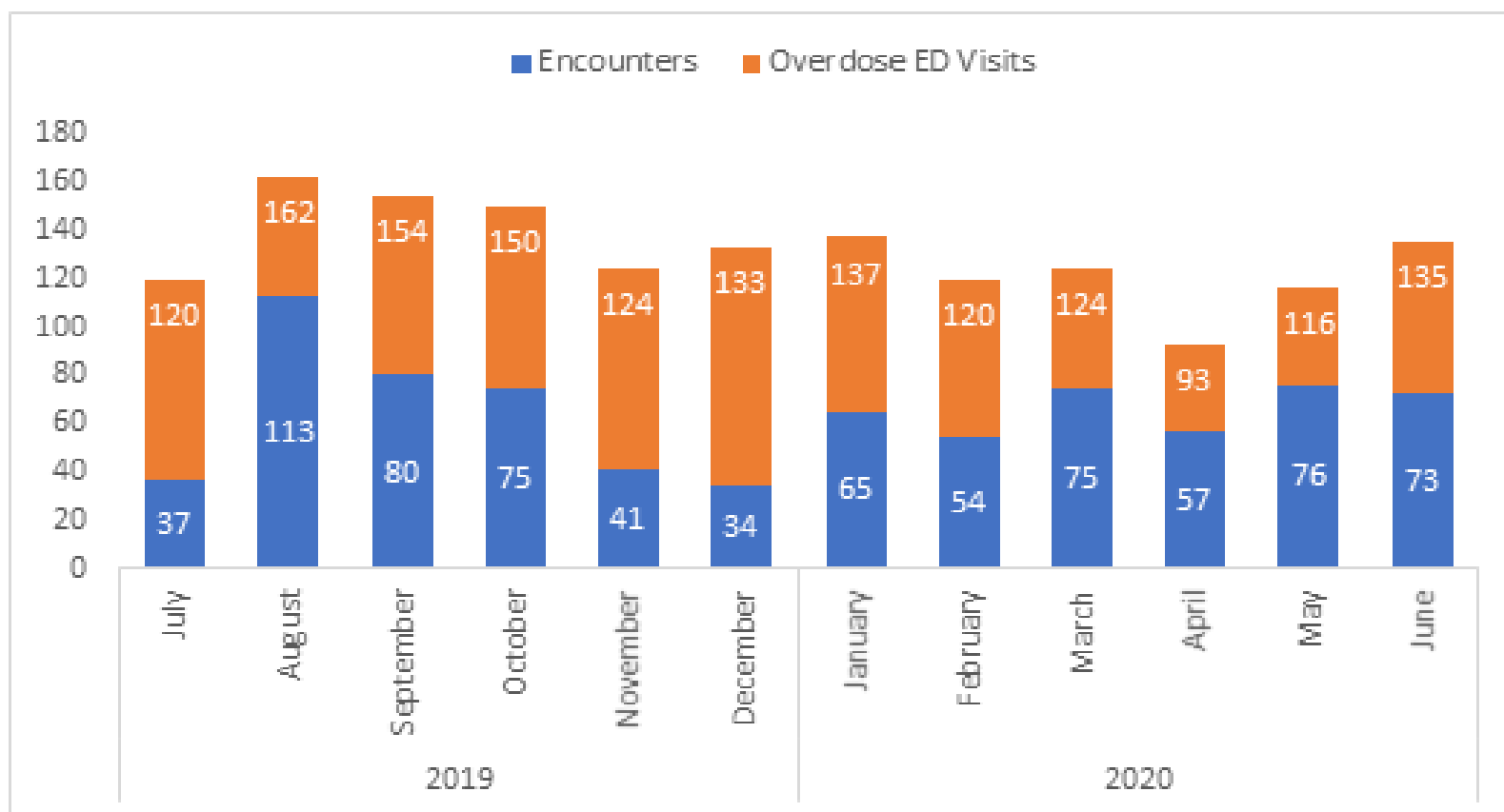
Specimens submitted for toxicology tests at RIDOH State Health Laboratories; July 2019-June 2020



RI Biosurveillance Program



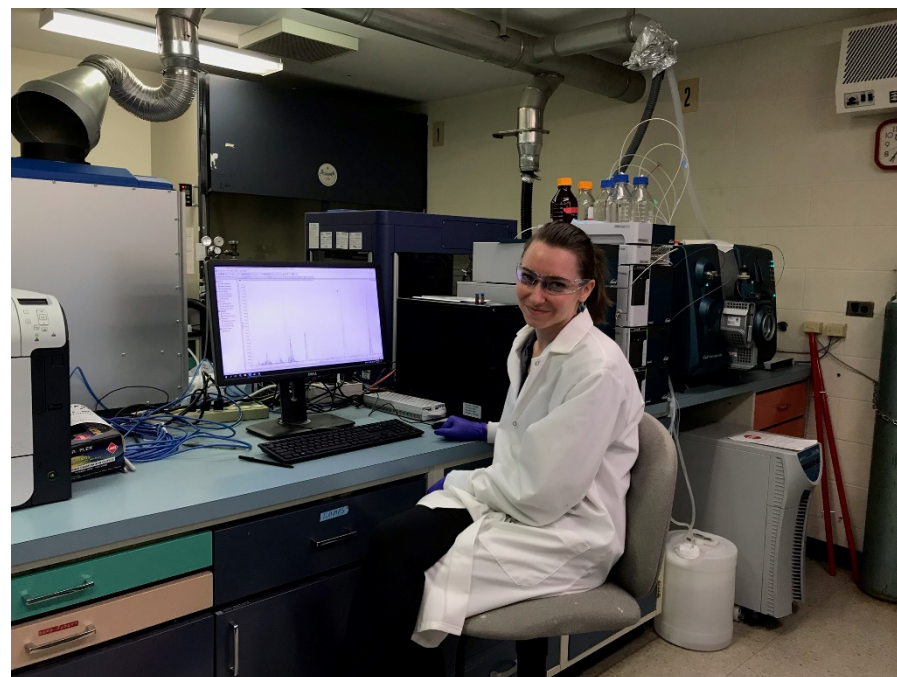
Specimens submitted for toxicology tests at RIDOH State Health Laboratories and reported ED visits related to non-fatal overdoses



Laboratory methodology

Solid phase extractions on Biotage Extrahera followed by LC-MS/MS on Exion /ABI 6500+

1. 6-Monoacetylmorphine
2. Buprenorphine
3. Codeine-6 β -D-glucuronide
4. Codeine
5. Dihydrocodeine
6. EDDP
7. Fentanyl
8. Hydrocodone
9. Hydromorphone
10. Methadone
11. Morphine-3 β -D-glucuronide
12. Morphine-6 β -D-glucuronide
13. Morphine
14. Norbuprenorphine
15. Norfentanyl
16. O-desmethyl Tramadol
17. Oxycodone
18. Oxymorphone
19. Tramadol
20. 4-ANPP
21. Acetylfentanyl
22. Acrylfentanyl
23. Benzylfentanyl
24. Butrylfentanyl
25. Carfentanil
26. Cis-3-Methylfentanyl
27. Cyclopropylfentanyl
28. Furanylfentanyl
29. +/- Hydrothiofentanyl
30. Methoxyacetylfentanyl
31. Methylacetylfentanyl
32. Norcarfentanil
33. p-Fluorobutrylfentanyl
34. p-Fluorofentanyl
35. Remifentanil
36. Sufentanil
37. U-47700
38. U-48800
39. U-49900
40. Valerylfentanyl

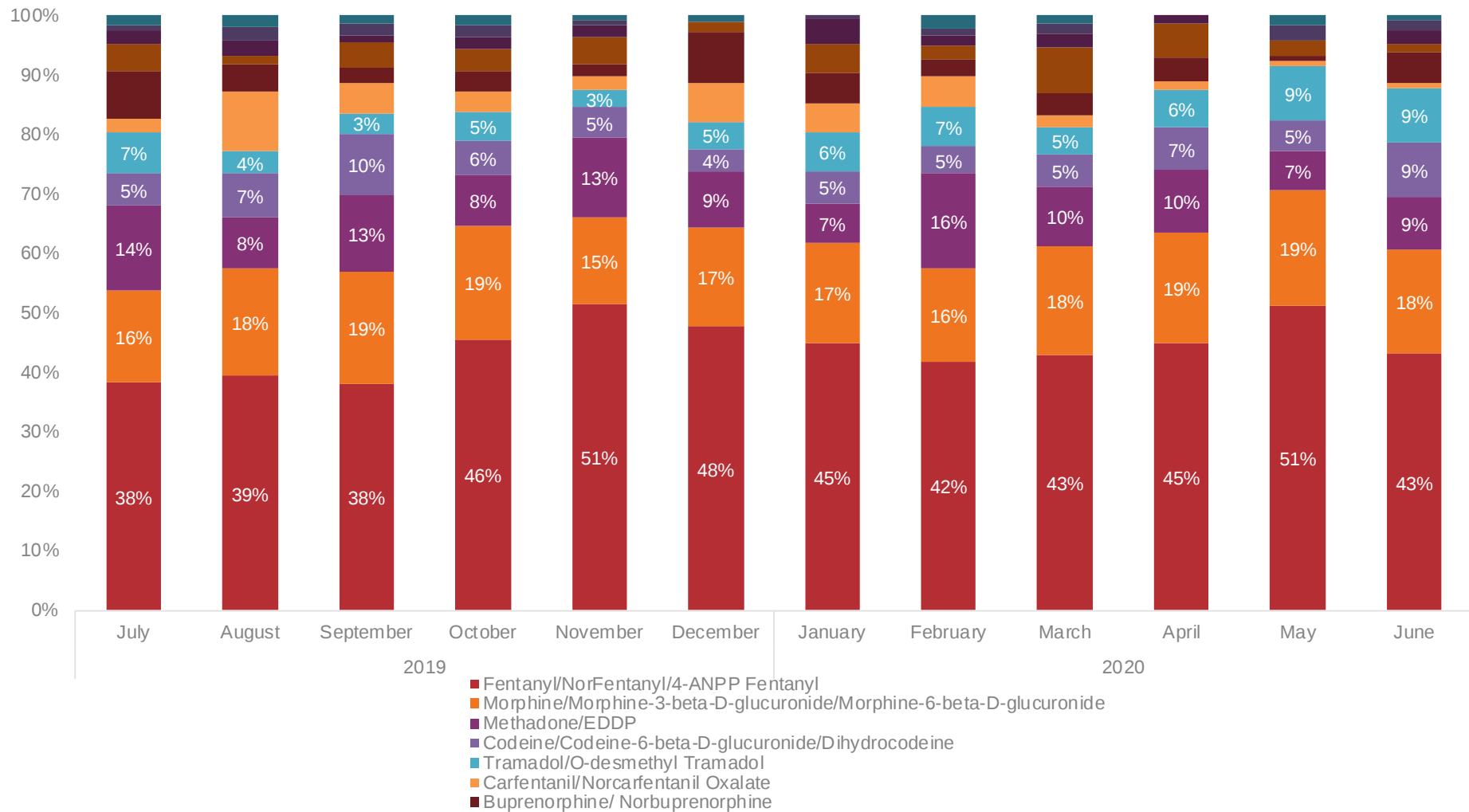


ED toxicology test results



	Positive Results	Percent Of Positives
Fentanyl/Norfentanyl/4-ANPP Fentanyl	1,123	43%
Morphine/Morphine-3-beta-D-glucuronide/Morphine-6-beta-D-glucuronide	464	18%
Methadone/EDDP	265	10%
Codeine/Codeine-6-beta-D-glucuronide/Dihydrocodeine	177	7%
Tramadol/O-desmethyl Tramadol	141	5%
Carfentanil/Norcarfentanil Oxalate	116	4%
Buprenorphine/ Norbuprenorphine	107	4%
Oxycodone/Oxymorphone	96	4%
Hydrocodone/Hydromorphone	53	2%
6-Monoacetylmorphine	40	2%
Acetylfentanyl/ Furanyl Fentanyl/ Valeryl Fentanyl/ Methoxyacetylfentanyl	31	1%
Total	2,613	100%

ED toxicology-continued



What else can we learn from the data:

- Analyze geographic/facility-level toxicology
- Compare nonfatal (ED) toxicology to fatal overdose toxicology
- Compare hospital screening data vs. confirmatory analysis
- Share data with submitting hospitals

Next steps?

How can we provide more informative laboratory data?

- Provide blood/serum testing
- Implement stimulants panel
- Implement benzodiazepine panel

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