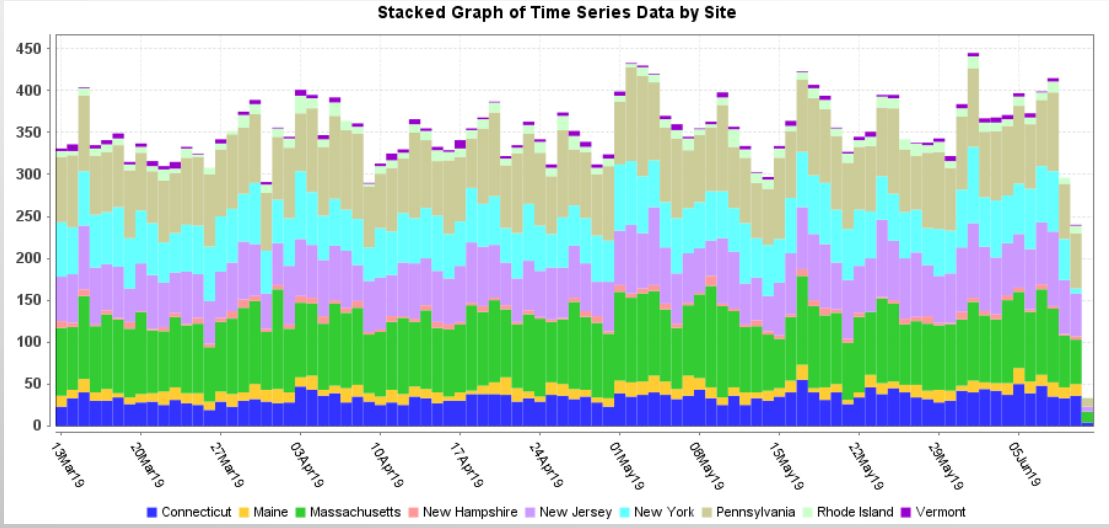
ALL DRUG – TEAM PURPLE

CCDD ALL DRUG V1 CLASSIFIER

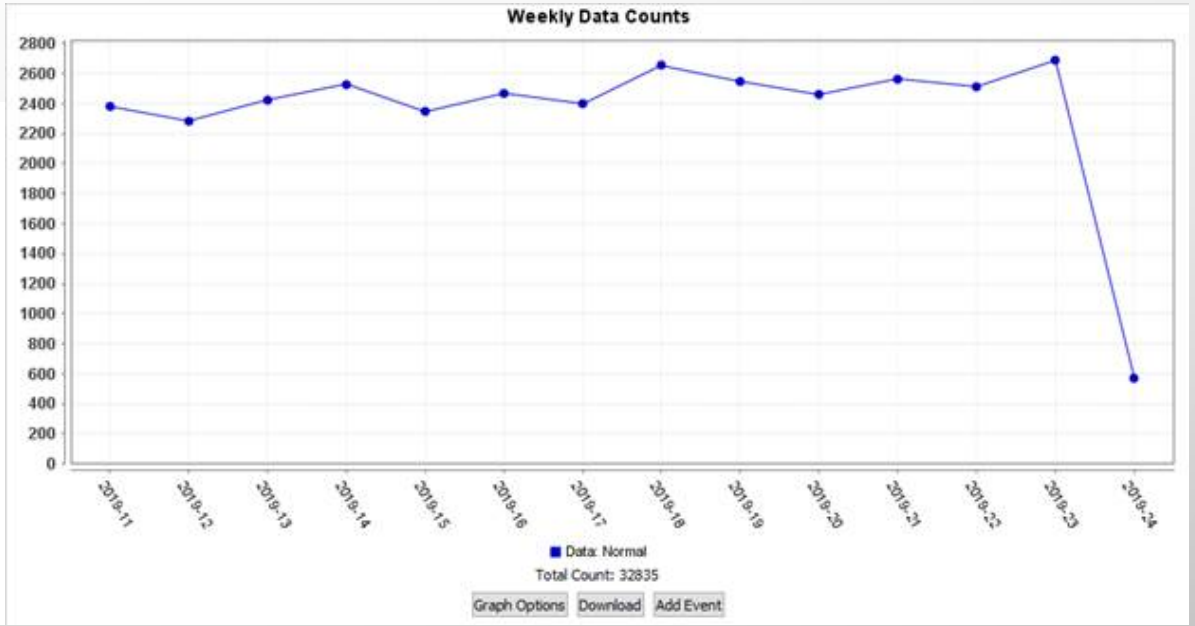
- DEFINITION OF PUBLIC HEALTH CONCERN
  - ALL DRUG WAS CREATED AFTER OPIOID, HEROIN, STIMULANTS, CDC ASSEMBLED AND OP/HER/STIM SHOULD ALL BE CONTAINED.
- CHANGES TO THE CLASSIFIER
  - AT THIS TIME NOT ENOUGH INFORMATION/EXPLORATION TO ASSESS CHANGE NEEDED
- CAVEATS:
  - RELIANCE ON QUALITY OF FIELDS (CC AND DD)
  - TIMELINESS OF RECEIVING DIAGNOSIS CODES (DELAYS)
- PUBLIC HEALTH ACTION
  - ANALYZE ALERTS TO DEVELOP A THRESHOLD
    - SEASONAL TRENDS
    - WEEKLY/MONTHLY PATTERNS
  - COMPARE INDIVIDUAL COMPONENTS AGAINST ALL DRUG CLASSIFIERS

CCDD ALL DRUG V1 CLASSIFIER

- DAILY FOR A 3 MONTH TIME RANGE
- STACKING BY 9 SITES



- WEEKLY FROM JAN – JUNE 9TH
- 9 SITES



BLACK - OPIOID

Objective 1 Classifier Scope and Purpose

- Classifier = Syndrome
- Scope
  - ID visits related to Opioid Overdose
  - Diagnosis Code/Discharge Code & Chief Complaint
  - Limitations – can’t distinguish prescription vs elicit OR fentanyl vs. fentanyl analog
- Purpose
  - Public Health Emergency Opioid Crisis
  - Use of Syndromic Surveillance data for more timely public health response
  - People moving over borders vs. Regional & Drugs moving across borders
  - Minimum Necessary Data Sharing infrastructure

Objective 2 – ID Eval Guidelines

- Prioritize Sensitivity
- Timeframe – Weekly data over the past 3 months
- ED data only

Objective 3 – Rationale for Refinements

- Free text – Chief Compliant
  - Keywords – “overdose” “heroin” “Narcan”
  - useless words (Eg. “Patient”) & replacing with useful words
  - Informing CDC definition search “Opioid”
  - Useful for states that don’t use Discharge Diagnosis Codes???
  - Changing the Classifier – Eg. “blood sugar”
- Challenges with using Discharge Diagnosis Codes
- Understanding the data (Eg. NY does not report Diagnosis Code)
- More info on metadata to know how other sites are performing for comparisons

Objective 4 – Manipulate Tools in Biosense

- Manipulating the view of Biosense Reports
- Public health interventions – What is desired & What can the data inform
- Understanding the entire workflow! The data informaticist must understand the public health intervention
- Leveraging existing traditional communicable disease resources for new problems

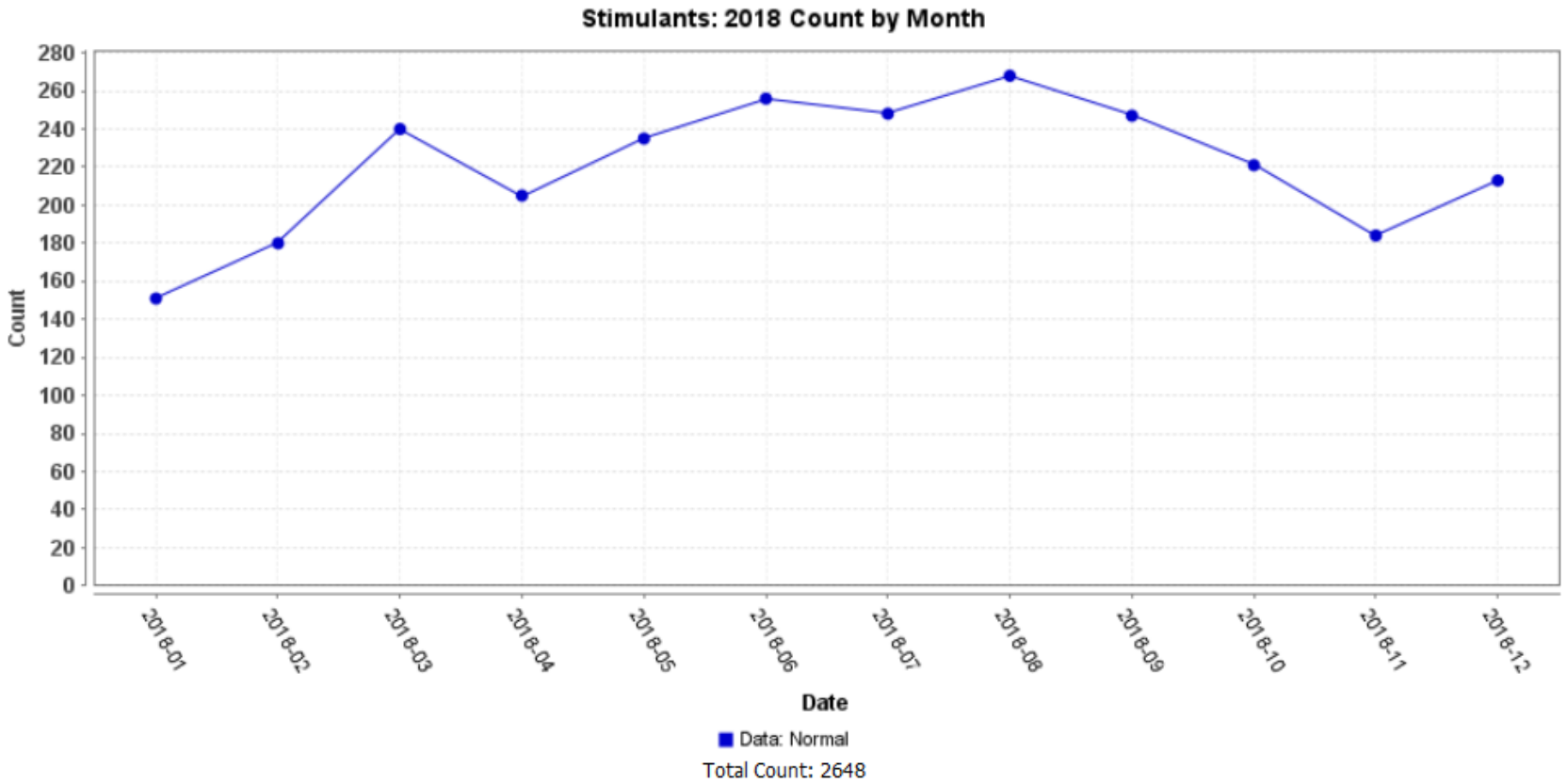
Classifier: Stimulant

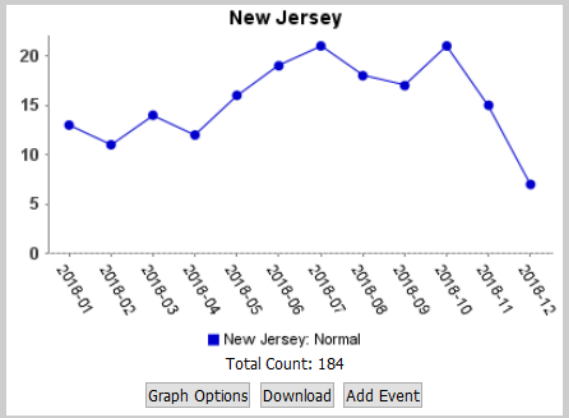
Team Orange

Stimulants

Public Health Concern: increase use of stimulants

Purpose of Stimulant Surveillance: cluster detection, monitoring trends

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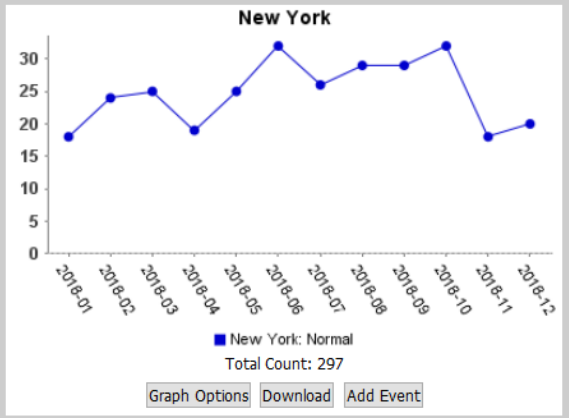
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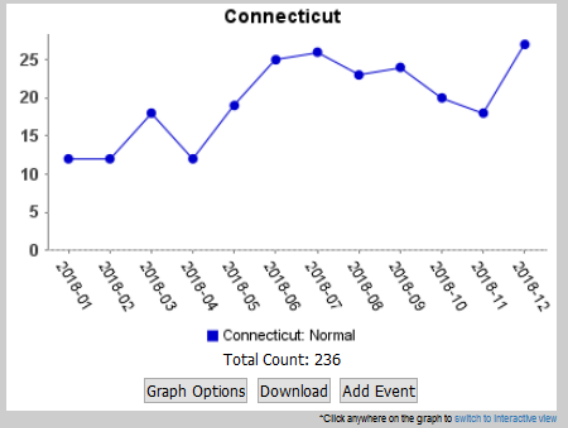
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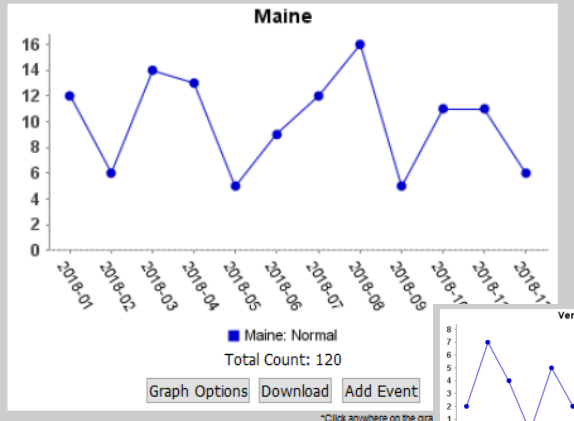
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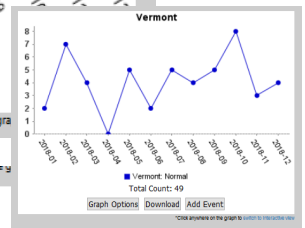
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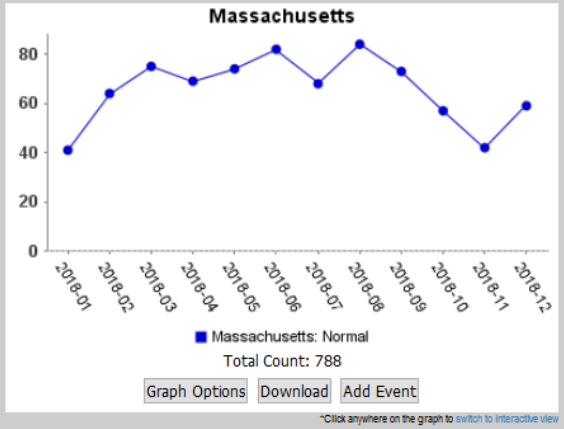
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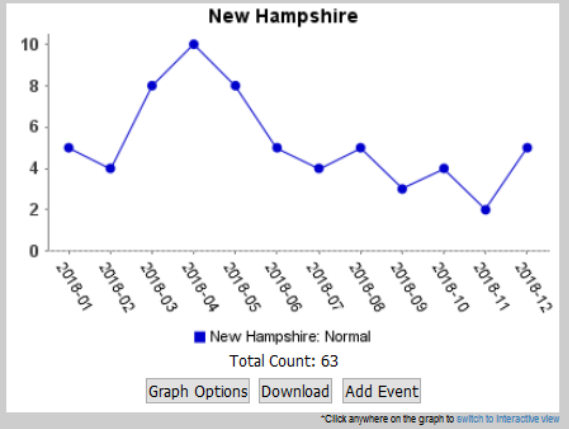
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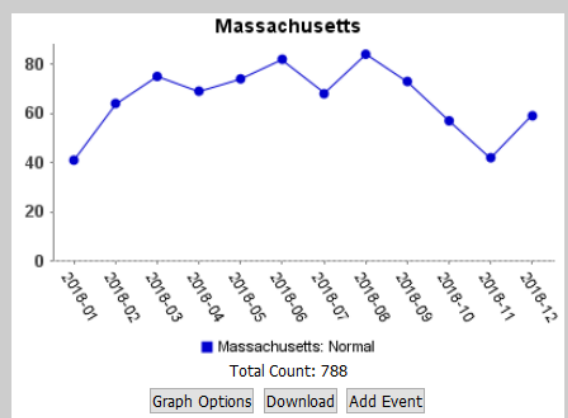
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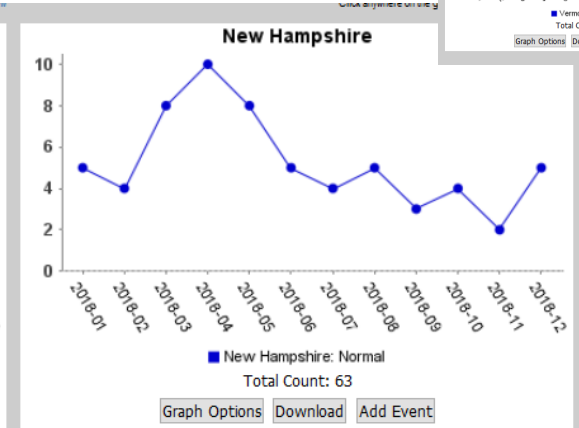
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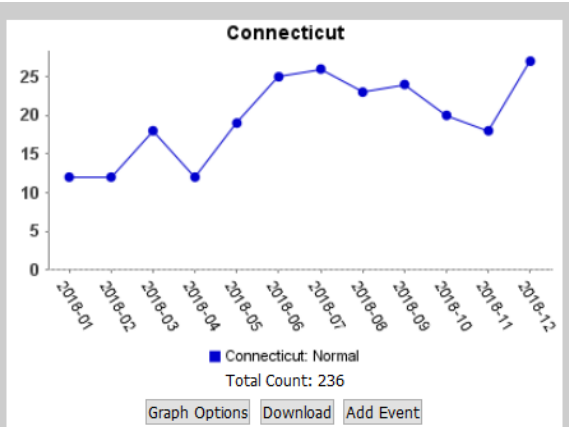
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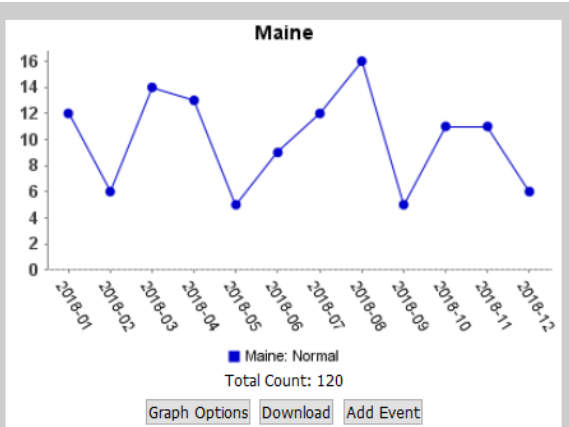
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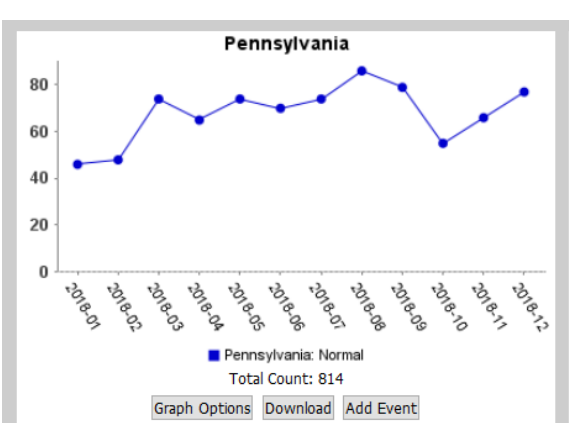
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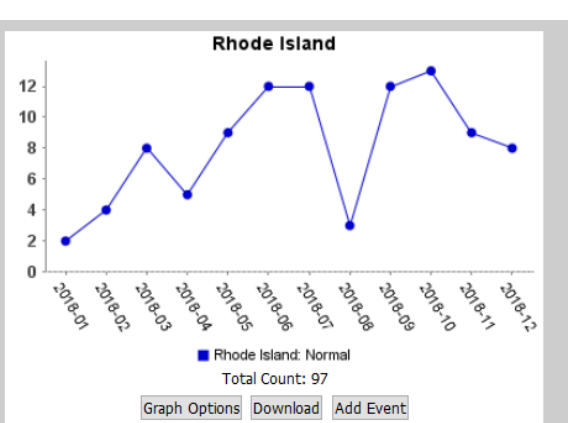
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CCDD

PATIENT WAS FOUND UNREPONSIVE SNORING RESPIRATION WITH A GOOD PULSE AT HOME SOMEONE AT HOUSE HAD DUMPED COLD WATER ON PATIENT INITIAL PRESENTATION PINPOINT PUPILS NA

;T40.601A;**Poison**ing by unspecified narcotics, accidental (unintentional), initial encounter;F14.10;**Cocaine** abuse, uncomplicated;F13.10;Sedative, hypnotic or anxiolytic abuse, uncomplicated;

O**VERDOSE** |

;F14.10;**Cocaine** abuse, uncomplicated;R11.2;Nausea with vomiting, unspecified;

O**VERDOSE** DRUG O**VERDOSE** |

;F13.120;Sedative, hypnotic or anxiolytic abuse with **intoxic**ation, uncomplicated;R07.9;Chest pain, unspecified;F14.10;**Cocaine** abuse, uncomplicated;E03.9;Hypothyroidism, unspecified;F31.10;Bipolar disorc

LEFT OBX 5 1 GT O**VERDOSE** LEFT OBX 5 1 GT LEFT OBX 5 1 GT DRUG O**VERDOSE** LEFT OBX 5 1 GT |

;T50.902A;**Poison**ing by unspecified drugs, medicaments and biological substances, intentional self-harm, initial encounter;F10.10;Alcohol abuse, uncomplicated;F14.10;**Cocaine** abuse, uncomplicated;R41.8

PATIENT TXFER VIA EMHC 76 FROM SORE THROAT FRANCIS FOR O**VERDOSE** PATIENT TOOK UNKNOWN AMOUNT OF PILLS POSSIBLY **VYVANSE** TRAZADONE CITALOPRAM PATIENT TXFER FOR OVERNIGI

;T43.212A;F32.9;F12.10;X83.8XXA;Z86.59;T50.902A;F32.9;F12.10;

EMS REPORT CALL FOR PURPOSEFUL O**VERDOSE** ON UNKNOWN QUANTITY OF METOPROLOL PATIENT WHO IS CAOX3 SELF ADMITS TO **INGEST**ING A LITER OF LIQUOR SOME **METH** EARLIER TODAY |

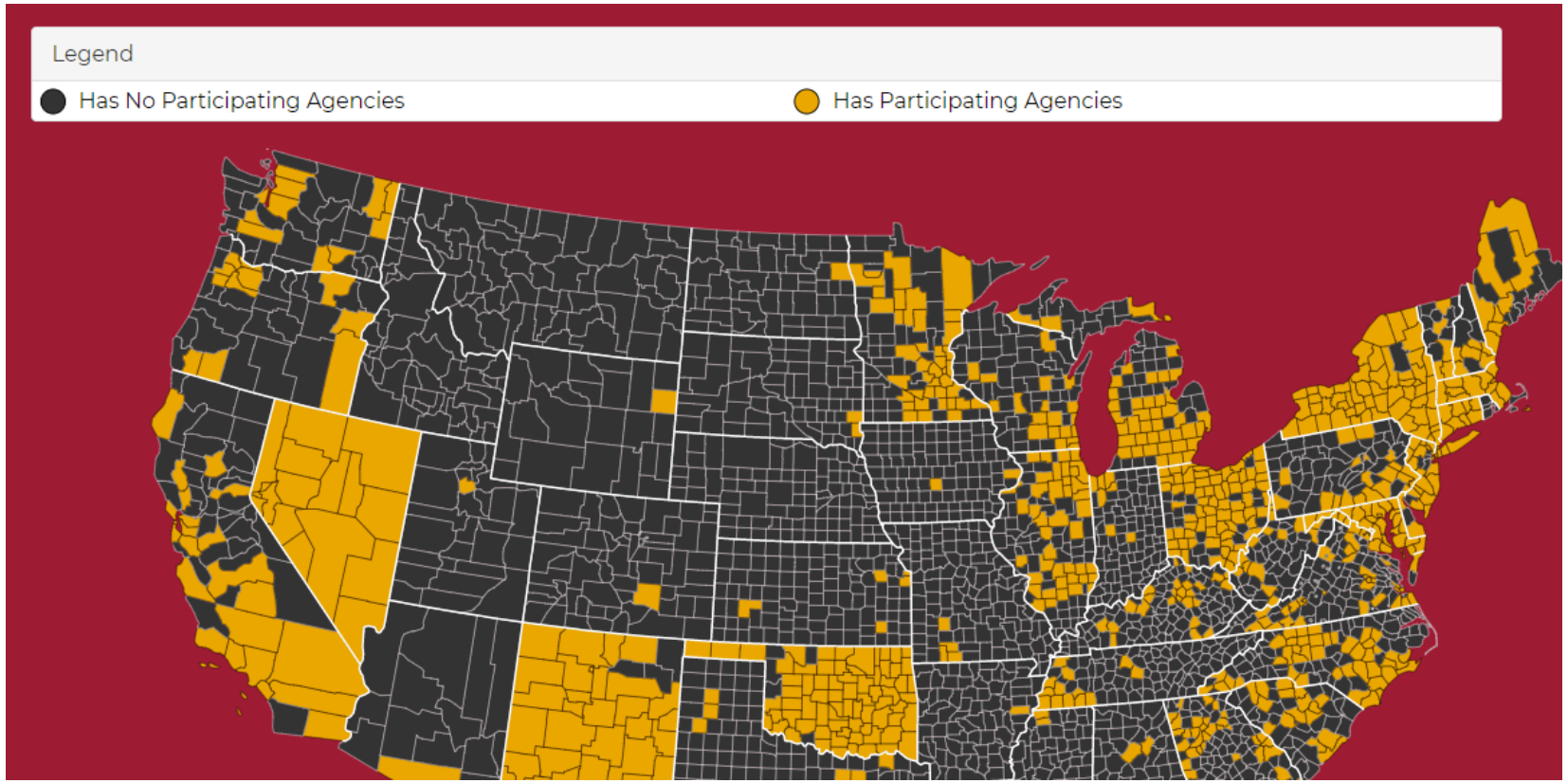
;T44.7X2A;T50.901A;T50.901A;T14.91XA;T14.91XA;

ALCOHOL **INTOXIC**ATION PICKED UP AT FREMONT STREET PATIENT SMOKED **METH** 2 AGO |

;F10.120;F10.129;F20.9;F31.9;F41.9;Z87.891;Z79.899;

Additional Data Sources

- ODMAP: Overdose Detection Mapping Application Program



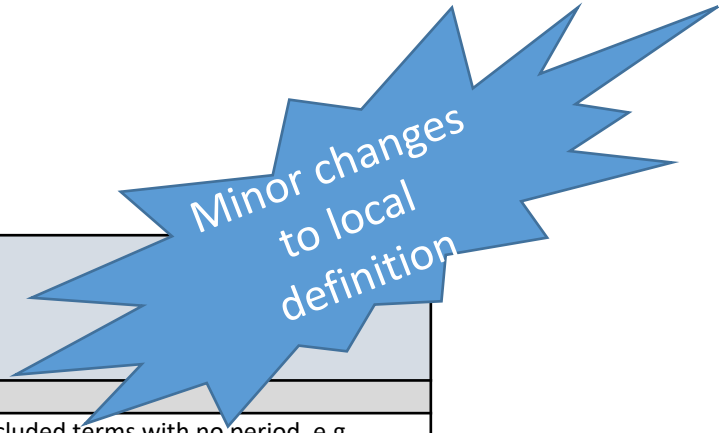
Team Heroin:
The Blue Belles

Teresa (NJ), Sara (ME), Kristen (CT), Carolyn(RI), Sarah (NYS), Tara(CDC)

Public Health Concern

- High morbidity/mortality
- Often contaminated with fentanyl
- Need actionable data to inform regional prevention/response
  - Ex. HIDTA

Inclusion/exclusion criteria (CDC)



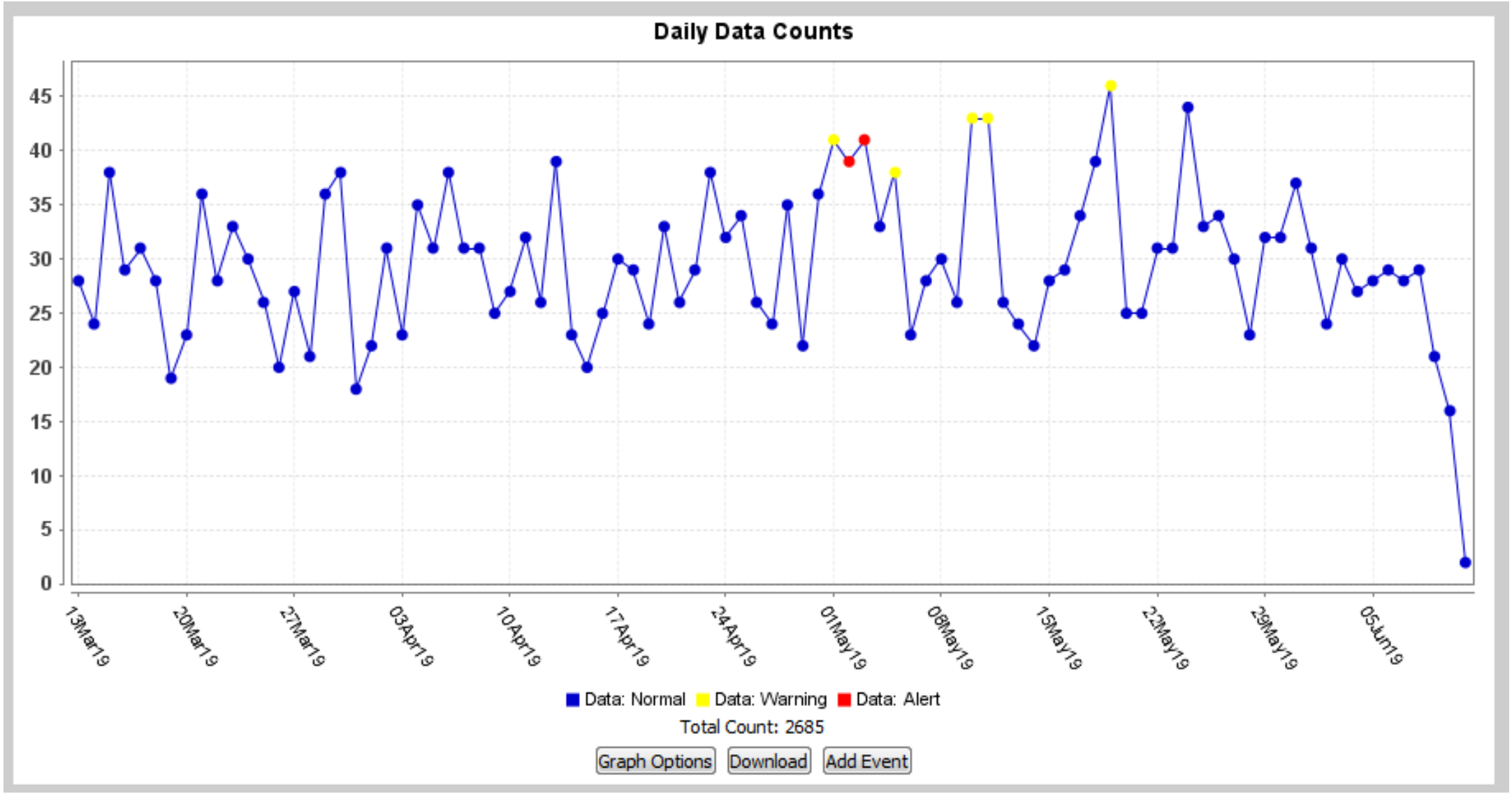
Variable	Automatic inclusion?	Specific terms
Inclusions		
Discharge Diagnosis – ICD-9-CM poisoning	Yes	965.01, E850.0 (also included terms with no period, e.g., "96501")
Discharge Diagnosis – ICD-10-CM poisoning	Yes	T40.1X1A, T40.1X4A (also included terms with no period, e.g., "T401X1A")
Discharge Diagnosis – SNOMED	Yes	295174006, 295175007, 295176008
Chief complaint – overdose term	No, must use in combination with opioid term	Poisoning (poison) Overdose (overdose, overdoes, averdose, averdoes, over does, overose) Nodding off Snort Ingestion (ingest, injest) Intoxication (intoxic) Unresponsive (unresponsiv) Loss of consciousness (syncopy, syncope) Shortness of breath (SOB), short of breath Altered mental status (AMS)
Chief complaint – heroin term	No, must use in combination with overdose term	Heroin, herion, heroine, HOD, speedball, dope
Exclusions		
Chief complaint	Exclude	See list below in ESSENCE code

(,^[;/]T40.1X1A^,OR,^[;/]T401X1A^,OR,^[;/]T40.1X4A^,OR,^[;/]T401X4A^,OR,^[;/]965.01[;/]^,OR,^[;/]96501[;/]^,OR,^[;/]E850.0^,OR,^[;/]E8500^,or,^295174006^,or,^295175007^,or,^295176008^,),or,(,(,(,^narcan^,or,^naloxo^,or,^poison^,or,^verdo[se][se]^,or,^over dose^,or,^overose^,or,^nodding^,or,^ nod ^,or,^snort^,or,^in[gj]est^,or,^intoxic^,or,^unresponsiv^,or,^loss of consciousness^,or,^syncop^,or,^shortness of breath^,or,^short of breath^,or,^altered mental status^,),and,(,^her[io][oi]n^,or,^ hod ^,or,^speedball^,or,^speed ball^,or,^dope^,),),andnot,(,^no loss of consciousness^,or,^denie[sd] loss of consciousness^,or,^negative loss of consciousness^,or,^denies any loss of consciousness^,or,^denies her[io][oi]n^,or,^deny her[io][oi]n^,or,^denied her[io][oi]n^,or,^denying her[io][oi]n^,or,^denies drug^,or,^deny drug^,or,^denied drug^,or,^denying drug^,or,^denies any drug^,or,^with dra^,or,^withdra^,or,^detoxification^,or,^detos^,or,^detoz^,or,^dtox^,),)

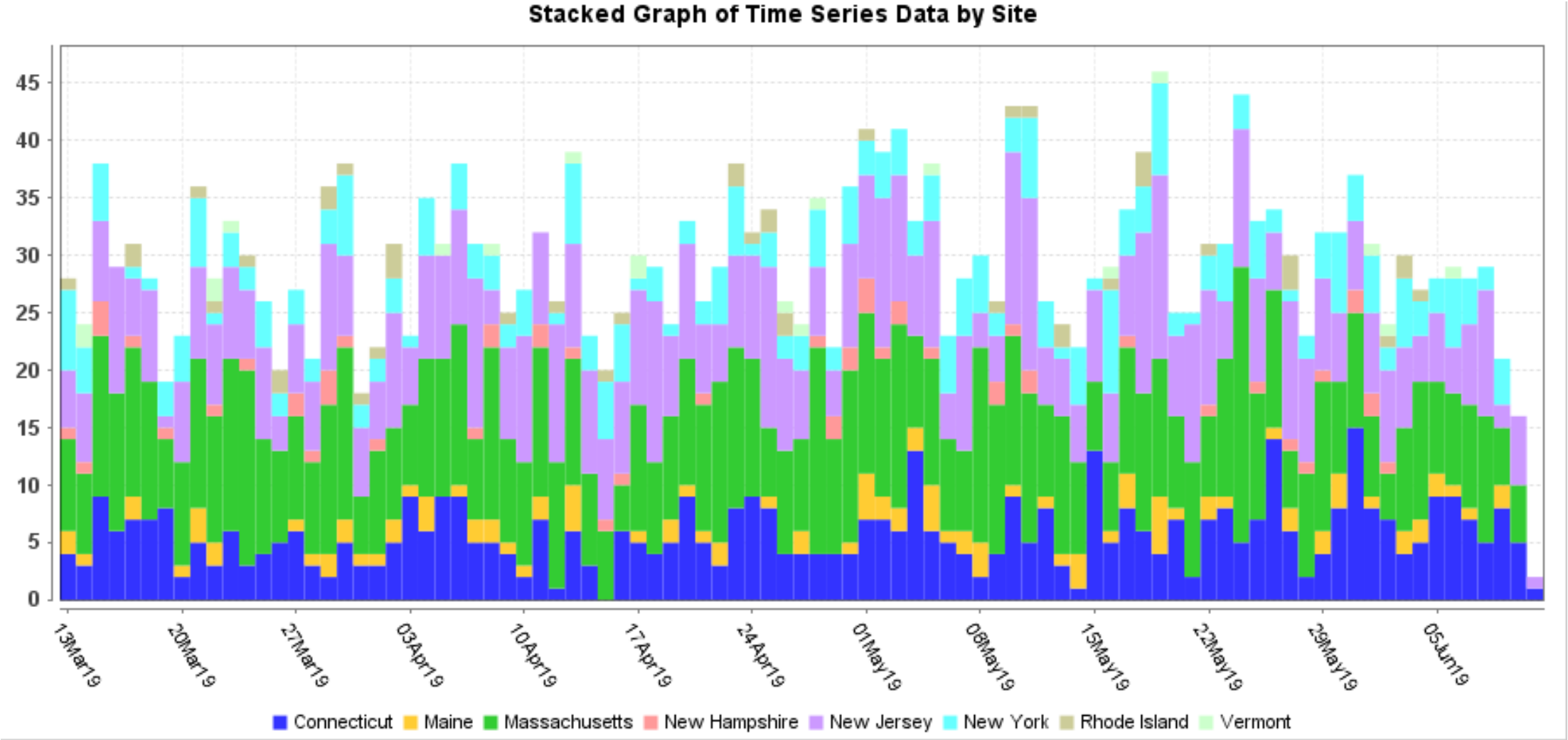
Definition Review

- Too hard to do in 20 minutes
- CDC definition is good enough for today
- In the real world, conduct routine manual or R-based review of definitions

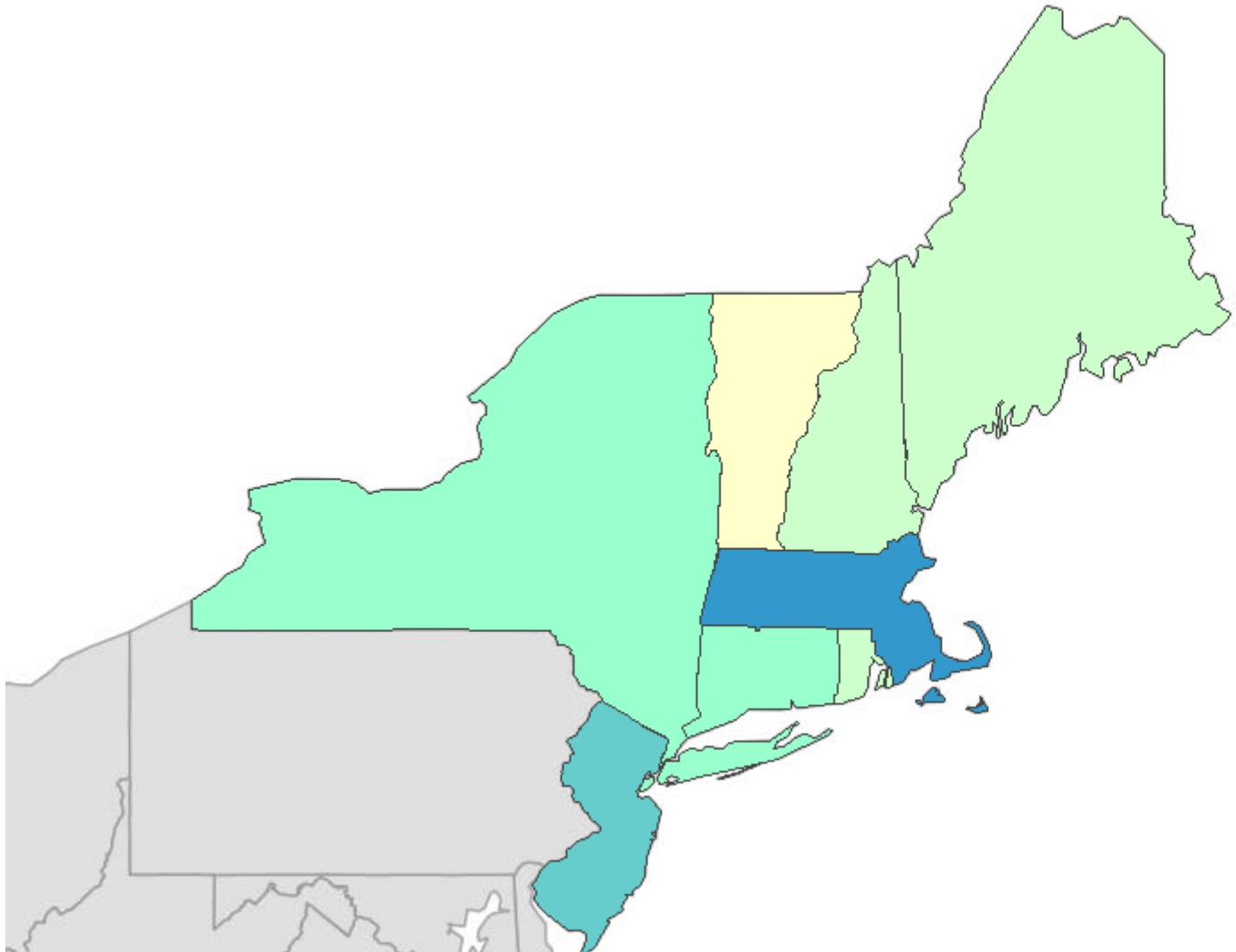
The Main Event!

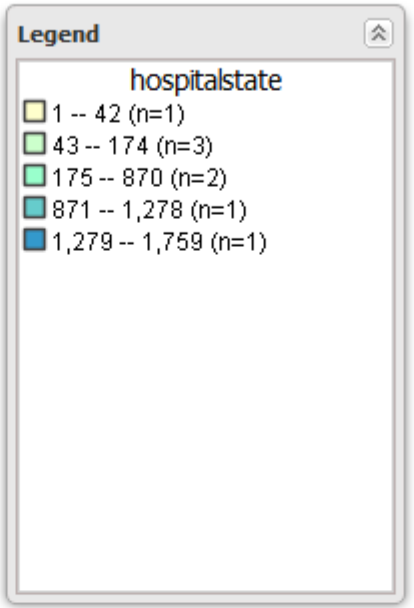


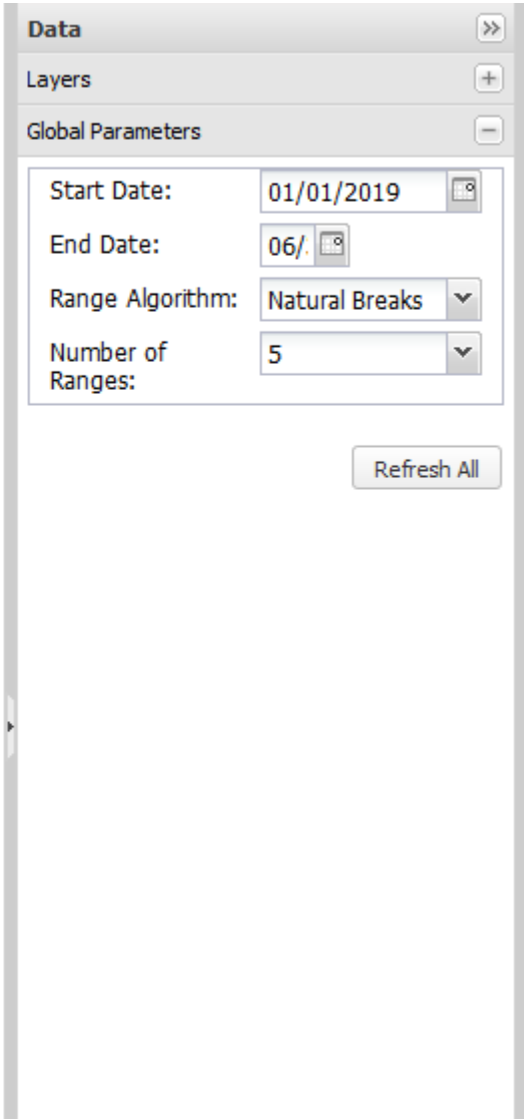
State-level variation



Year to date geographic trends







Cross-jurisdictional data insights

- Mixed use of local and CDC preferred definitions
  - This shouldn’t be a huge barrier since we are looking at trends and patterns
- Tracking trends across states along known drug trafficking routes
  - Side note: Everything is New York’s fault….
- Disease trends don’t stop at jurisdictional lines and there is a lot of patient (and heroin) movement across state borders
  - We are small areas compared to other parts of the country, lots of travel

Geographic variability

- Local—Prevention and response
- State—Events that exceed local capability
- Federal—Big picture awareness/resource allocation

Purpose or intention

- Developed in response to ESOOS
  - Nonfatal overdose surveillance
- CDC definition with state local input
- Identify trends to implement interventions
  - MAT location assessment
  - Naloxone distribution
  - Strike teams for cluster response
    - Work with law enforcement to remove product and harm reduction
  - Grant writing
  - Collaborate with partners: HIDTA, law enforcement, EMS, SSPs, community groups

Extra Slides

Likelihood that syndrome is present in ED data

- Expect high coverage for those who actually seek care in ED
  - May miss those refusing EMS transport or dead on scene
- Not common in chief complain
- Mixed experience with use of triage notes
  - Some found false positives
  - Some never used
  - Some are seeking to add
- Most commonly identified in discharge data
  - Jurisdictional differences in use of SNOMED and ICD-10 codes
- Variation in data elements collected at local level and shared with NSSP

Prioritization of sensitivity vs. specificity

- Highest specificity of ESOOS definitions
  - Substance-specific
  - Unintentional or unknown overdoses (Versus general heroin use)
- Likely missing people that have heroin overdoses but lack evidence in collected information

Timeframe for surveillance and observation

- Variable use of alerts across jurisdictions
  - Those that are using them have daily/hourly notifications
    - Alerts, SatSCAN
  - Geographic granularity varies
- Historic analysis can be difficult based on changes in data quality over time and use of longterm trend analysis varies by jurisdiction

Supplemental data sources

- EMS data
- PCC use variable
- Administrative discharge data

Classifier: Stimulant

Team Orange

Stimulants

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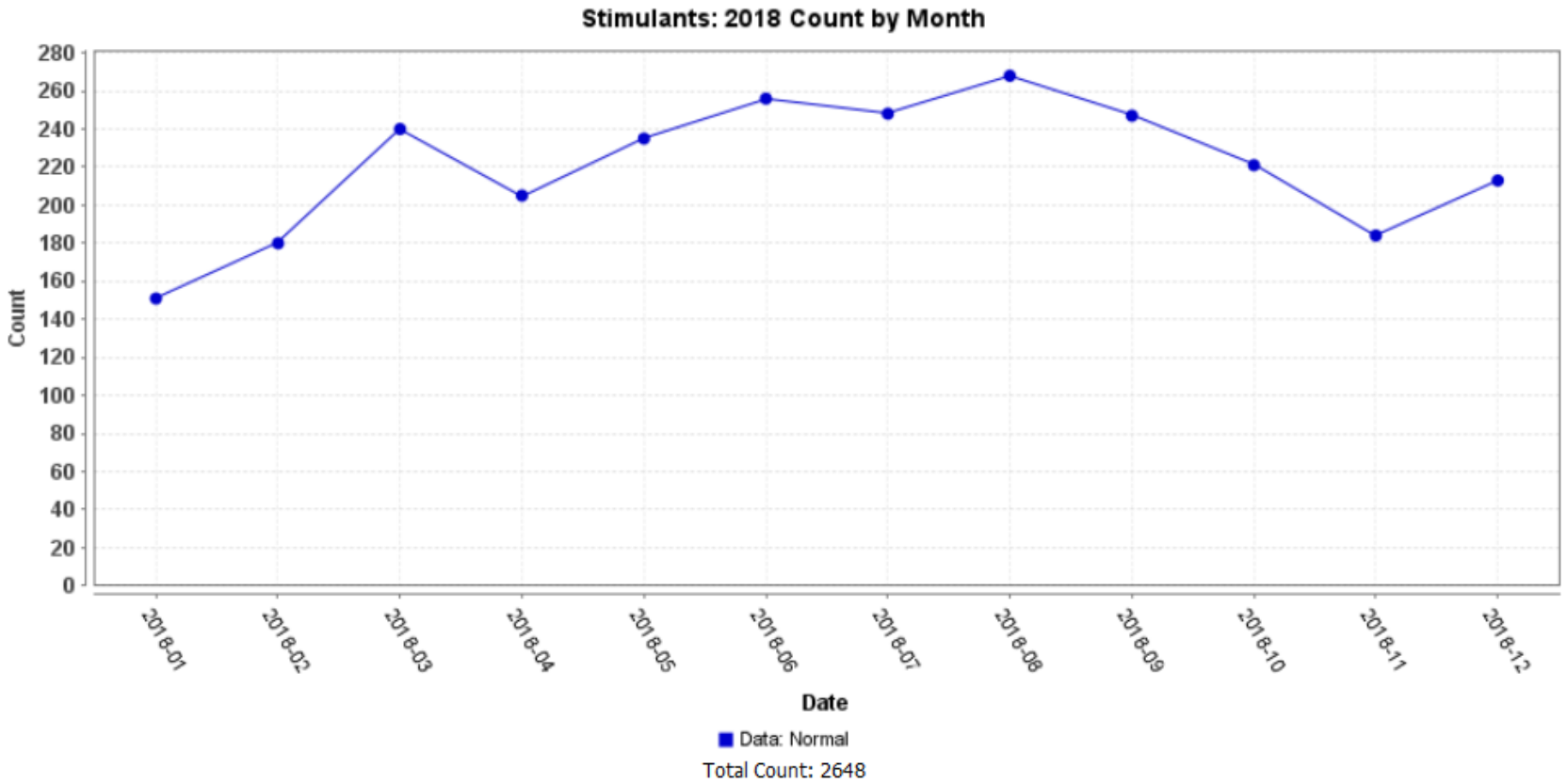
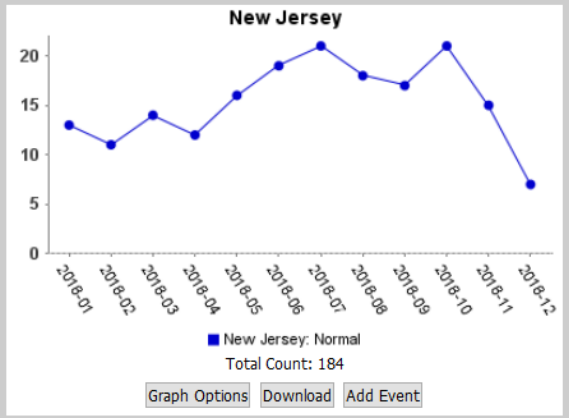
Purpose of Stimulant Surveillance: cluster detection, monitoring trends

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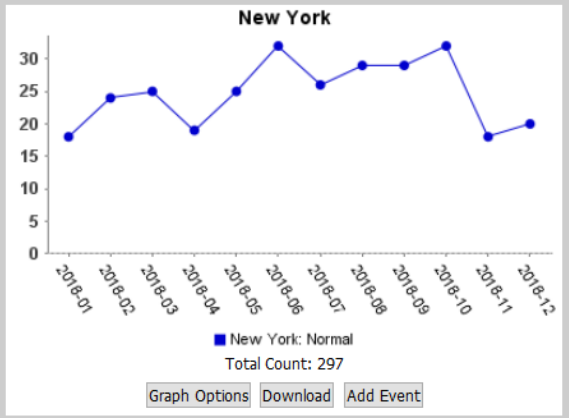
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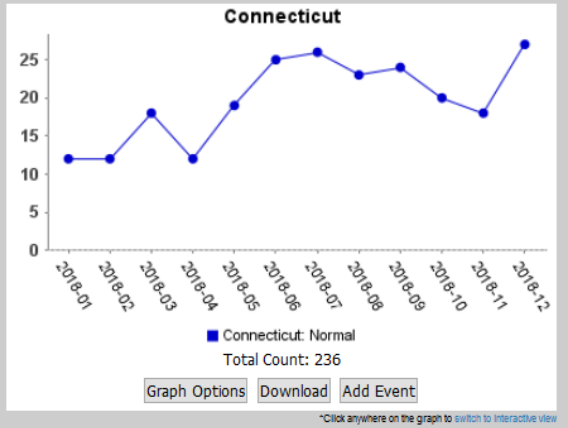
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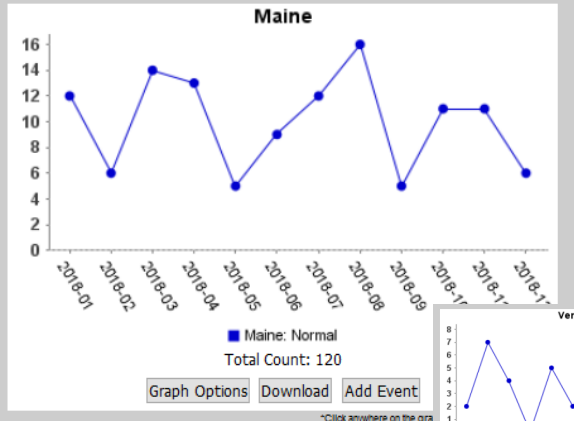
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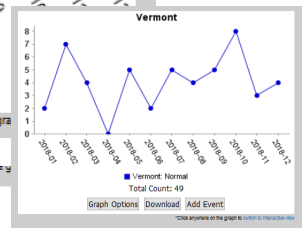
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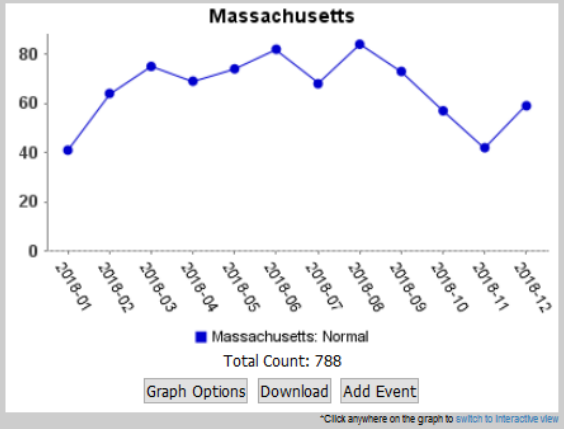
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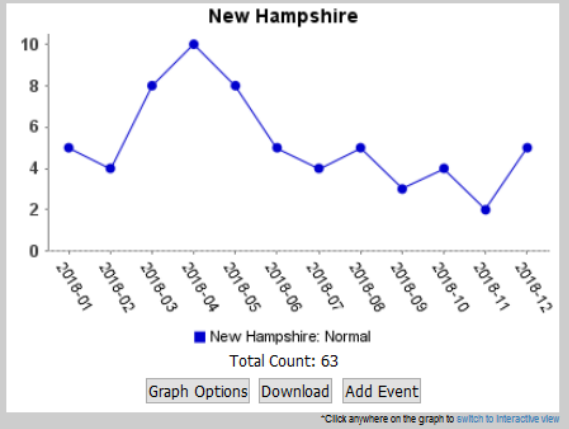
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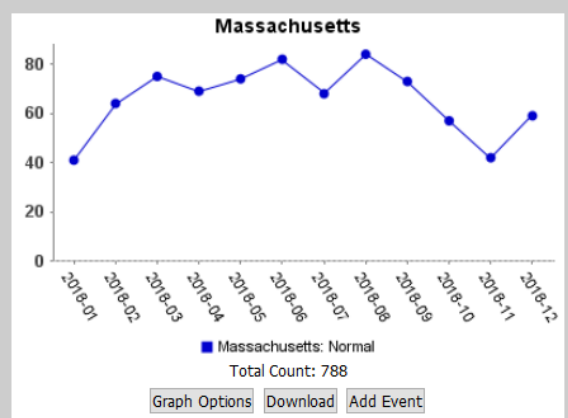
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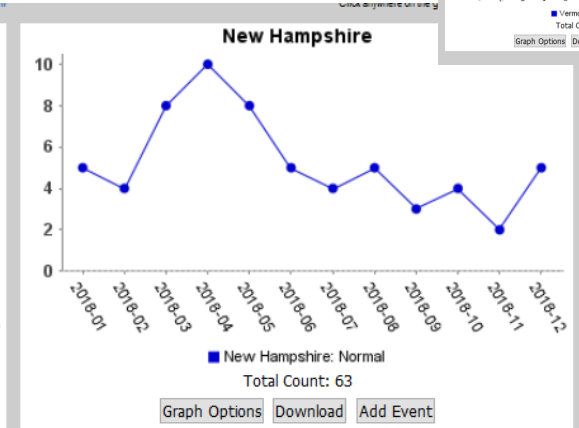
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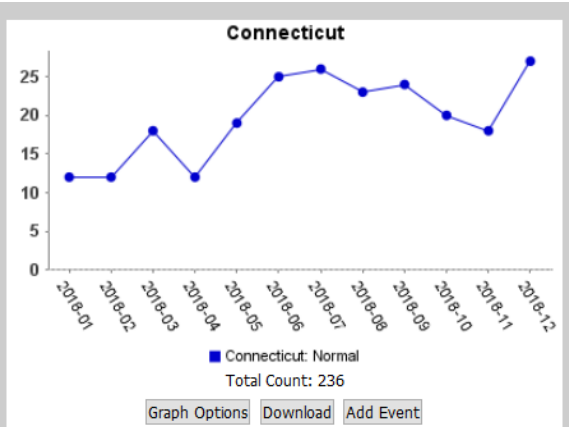
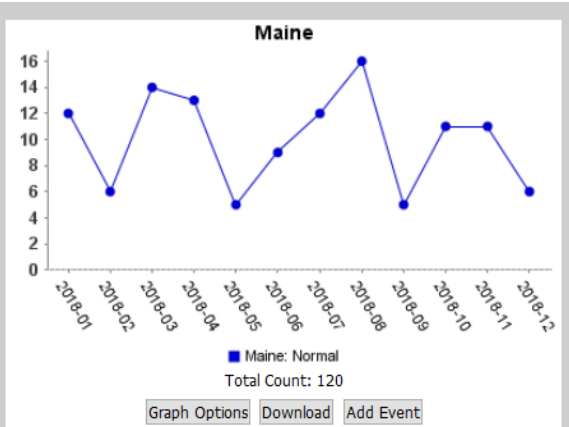
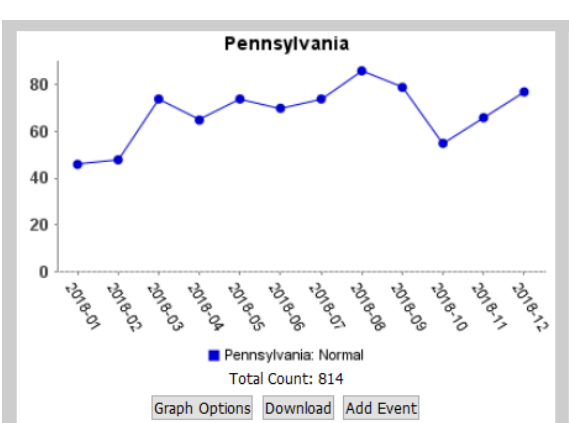
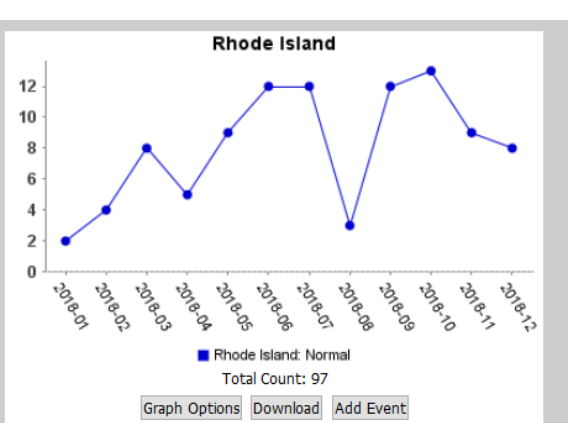
Add Event
*Click anywhere on the graph to switch to Interactive view


Connecticut
Connecticut: Normal
Total Count: 236
Graph Options
Download
Add Event
*Click anywhere on the graph to switch to Interactive view


Maine
Maine: Normal
Total Count: 120
Graph Options
Download
Add Event
*Click anywhere on the graph to switch to Interactive view


Pennsylvania
Pennsylvania: Normal
Total Count: 814
Graph Options
Download
Add Event
*Click anywhere on the graph to switch to Interactive view


Rhode Island
Rhode Island: Normal
Total Count: 97
Graph Options
Download
Add Event
*Click anywhere on the graph to switch to Interactive view

CCDD

PATIENT WAS FOUND UNREPONSIVE SNORING RESPIRATION WITH A GOOD PULSE AT HOME SOMEONE AT HOUSE HAD DUMPED COLD WATER ON PATIENT INITIAL PRESENTATION PINPOINT PUPILS NA

;T40.601A;**Poison**ing by unspecified narcotics, accidental (unintentional), initial encounter;F14.10;**Cocaine** abuse, uncomplicated;F13.10;Sedative, hypnotic or anxiolytic abuse, uncomplicated;

O**VERDOSE** |

;F14.10;**Cocaine** abuse, uncomplicated;R11.2;Nausea with vomiting, unspecified;

O**VERDOSE** DRUG O**VERDOSE** |

;F13.120;Sedative, hypnotic or anxiolytic abuse with **intoxic**ation, uncomplicated;R07.9;Chest pain, unspecified;F14.10;**Cocaine** abuse, uncomplicated;E03.9;Hypothyroidism, unspecified;F31.10;Bipolar disorc

LEFT OBX 5 1 GT O**VERDOSE** LEFT OBX 5 1 GT LEFT OBX 5 1 GT DRUG O**VERDOSE** LEFT OBX 5 1 GT |

;T50.902A;**Poison**ing by unspecified drugs, medicaments and biological substances, intentional self-harm, initial encounter;F10.10;Alcohol abuse, uncomplicated;F14.10;**Cocaine** abuse, uncomplicated;R41.8

PATIENT TXFER VIA EMHC 76 FROM SORE THROAT FRANCIS FOR O**VERDOSE** PATIENT TOOK UNKNOWN AMOUNT OF PILLS POSSIBLY **VYVANSE** TRAZADONE CITALOPRAM PATIENT TXFER FOR OVERNIGI

;T43.212A;F32.9;F12.10;X83.8XXA;Z86.59;T50.902A;F32.9;F12.10;

EMS REPORT CALL FOR PURPOSEFUL O**VERDOSE** ON UNKNOWN QUANTITY OF METOPROLOL PATIENT WHO IS CAOX3 SELF ADMITS TO **INGEST**ING A LITER OF LIQUOR SOME **METH** EARLIER TODAY |

;T44.7X2A;T50.901A;T50.901A;T14.91XA;T14.91XA;

ALCOHOL **INTOXIC**ATION PICKED UP AT FREMONT STREET PATIENT SMOKED **METH** 2 AGO |

;F10.120;F10.129;F20.9;F31.9;F41.9;Z87.891;Z79.899;

Additional Data Sources

- ODMAP: Overdose Detection Mapping Application Program