Significant Findings

3:15PM EST | November 17th, 2020 | 2020 SyS Symposium

Moderated by MisChele Vickers, MPA – Alabama Department of Public Health

Speakers:

MisChele Vickers, MPA – Alabama Department of Public Health

Ami Gandhi, MPH – Georgia Department of Public Health

Diksha Ramnani, MPH – Wisconsin Department of Health Services

Darcy Phelan-Emrick, DrPH, MHS – Baltimore City Health Department (Maryland)

Kelley Bemis, MPH – Cook County Department of Public Health (Illinois)

National Syndromic Surveillance Program
Community of Practice
Advancing the Science and Practice of Syndromic Surveillance

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Council of State and Territorial Epidemiologists

MisChele Vickers, MPA
Alabama Department of Public Health

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AlaSyS Significant Findings

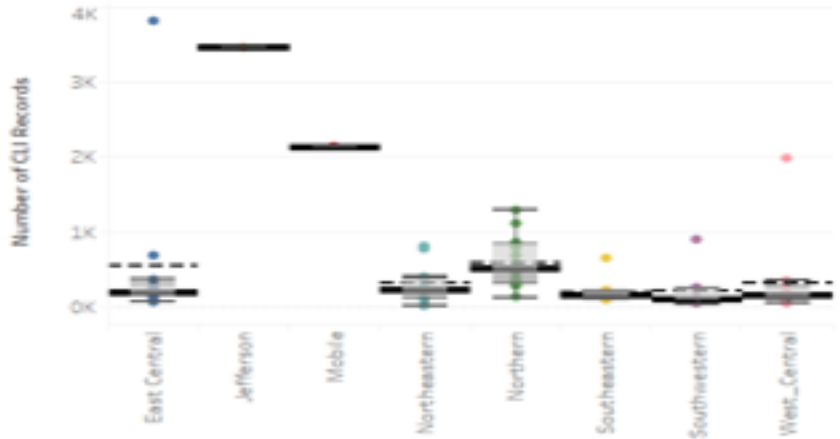
2020 Syndromic Surveillance Symposium

Analytics, Statistics, and Visualization
Alabama Syndromic Surveillance (AlaSyS)

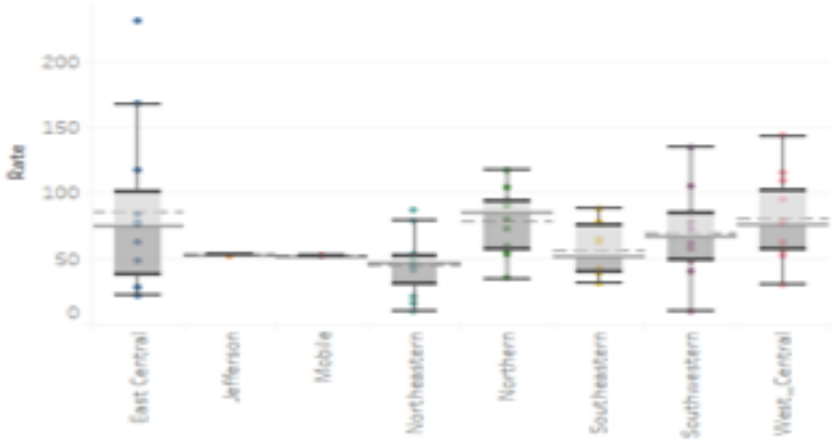
Epidemiology, Surveillance, & Informatics
Infectious Diseases and Outbreaks Division
Bureau of Communicable Disease

MisChele A. Vickers, MPA
Public Health Research Analyst III

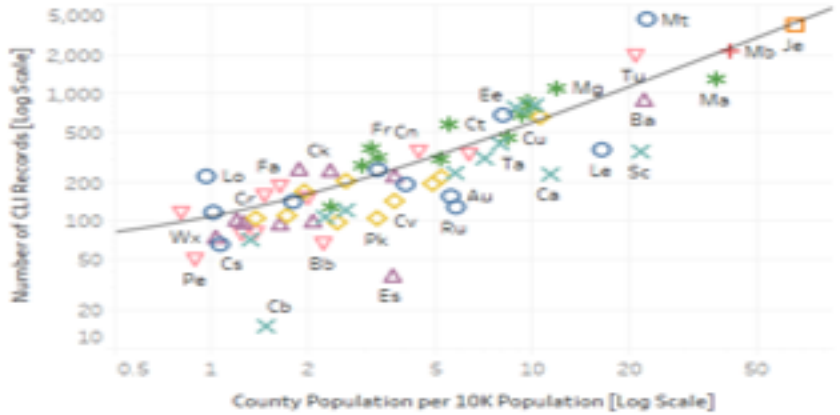
CLI Count



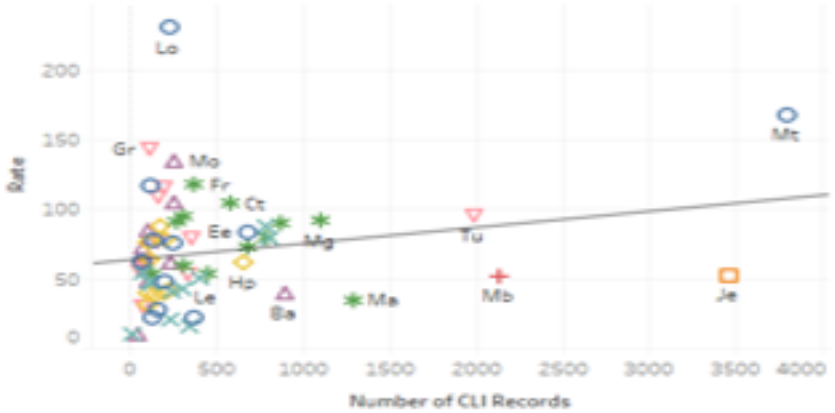
CLI Rate



Covariance and Correlation Analysis of CLI Records and Population



Covariance and Correlation Analysis of CLI Rates and Number of CLI Records

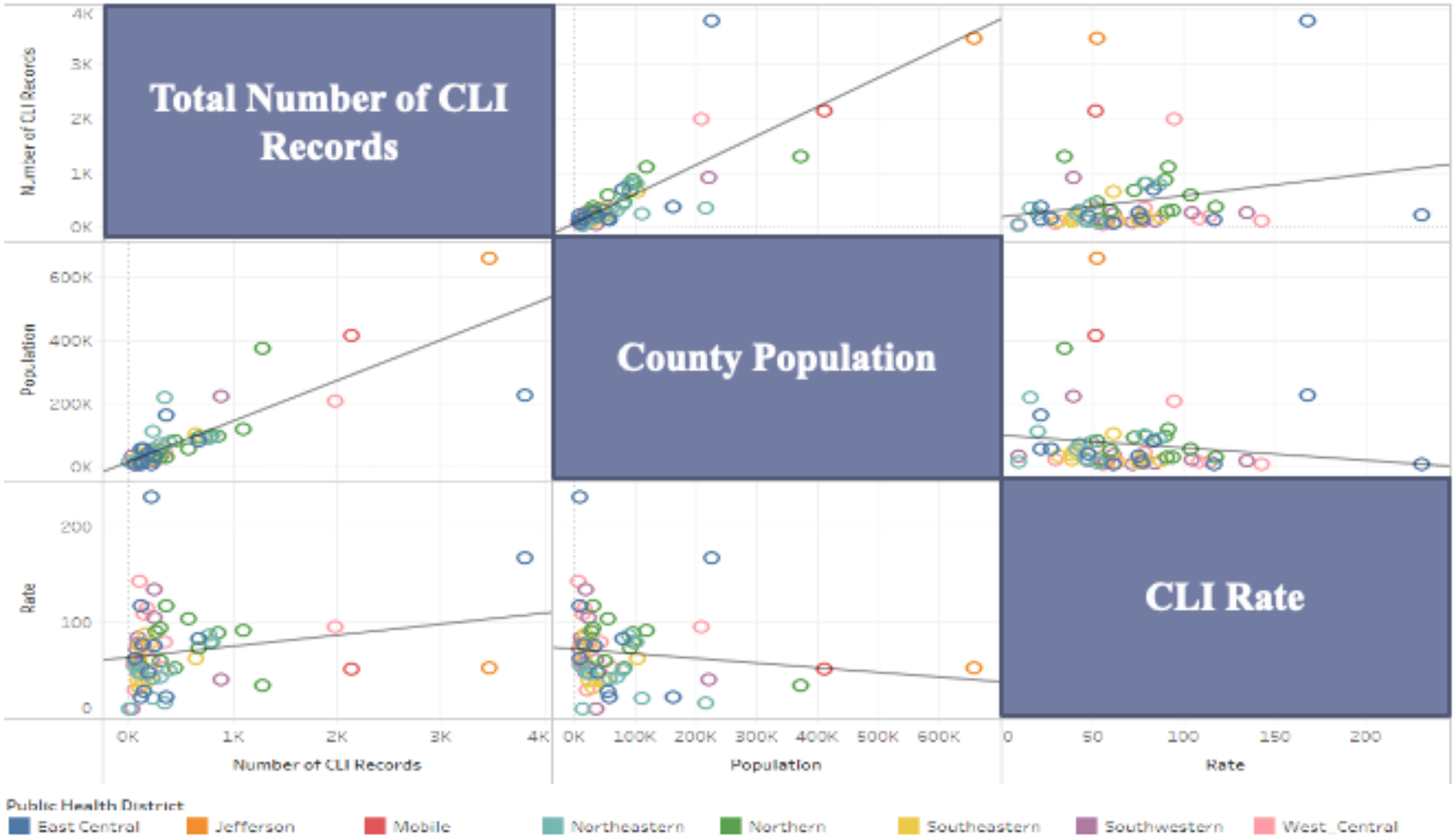


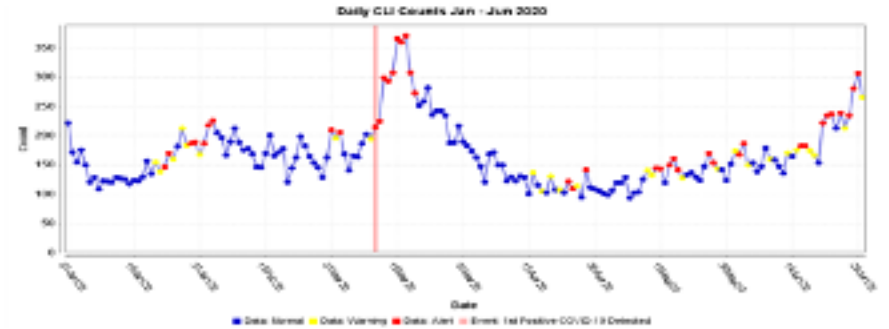
DETECT

TEST

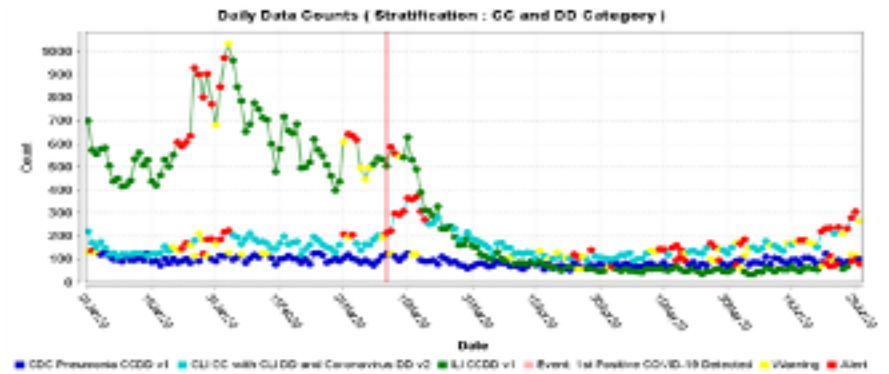
REPORT

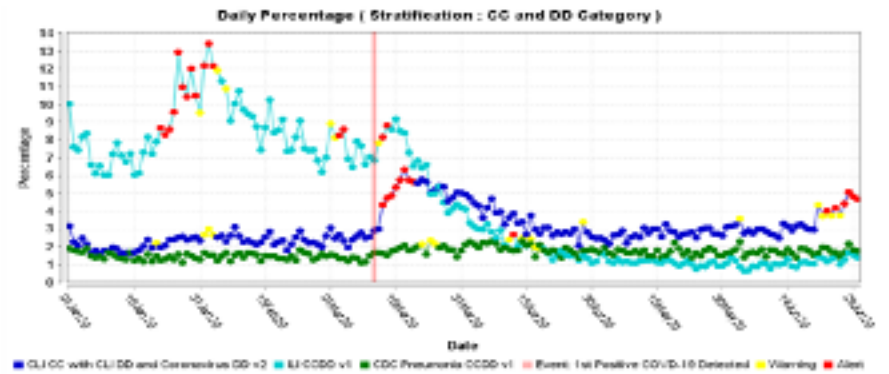
Scatterplot matrix with respect to all three continuous measurments.




Daily CLI Counts Jan - Jun 2020
Count
Date


Daily CLI Percentage Jan-Jun 2020
Percentage
Date


Daily Data Counts (Stratification : CC and DD Category)
Count
Date


Daily Percentage (Stratification : CC and DD Category)
Percentage
Date

Thank You!

- Alabama Department of Public Health
  - Infectious Diseases and Outbreaks Division
- National Syndromic Surveillance Program
  - Community of Practice
- Council of State and Territorial Epidemiologists
- Centers for Disease Control and Prevention

Ami Gandhi, MPH
Georgia Department of Health Services

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Effectiveness of Syndromic Surveillance to Identify Acute Hepatitis Infections in Georgia

2020 Syndromic Surveillance Symposium

Ami P. Gandhi, MPH / GA DPH Viral Hepatitis Epidemiology /
Ami.Gandhi@dph.ga.gov

Hepatitis A Outbreak in Georgia

- HAV outbreak began June 2018 with 2 distinct outbreaks among illicit drug users and men who have sex with men (MSM) occurring in specific geographic areas of the state
- Between June 2018 and October 2019:
  - 789 confirmed cases
  - 68% hospitalization rate

- July 2018 – began collaboration between DPH Viral Hepatitis and Syndromic Surveillance (SS) programs
  - Monitor SS for all HAV-related events (diagnoses, exposures, acute HAV symptoms) and compared timing to traditional notifiable disease reporting
  - Quantify effectiveness of specific discharge diagnoses and chief copmplaints

Methods

- Daily data feeds from 135 Emergency Departments (EDs) and Urgent Cares (UC)
- Queries performed using SAS/BASE and daily line lists sent to District Epidemiologists
    - 5 discharge diagnosis (ICD-10 codes): 'hepatitis A' (B15); 'acute viral hepatitis, unspecified' (B17.9); 'contact with and (suspected exposure to viral hepatitis' (Z20.5); and 'unspecified viral hepatitis with(out) hepatic coma' (B19.0 and B19.9)
    - Chief complaints: 'hepatitis A' and 'hep A', and combinations of the strings 'suspect' / 'contact' and 'hep'
- True Positive notification was determined for patients with a laboratory confirmed HAV
- Predictive Positive Values (PPV) were calculated statewide and by the group of four outbreak districts

Results – Effectiveness of Using Syndromic Surveillance

378 total HAV-related notifications (June 2018-October 2019)	
Statewide:	Outbreak Districts:
PPV: 33%	PPV: 53%
DDx 'hepatitis A': 64.4% (of 87 notifications)	Ddx 'hepatitis A': 71% (of 69 notifications)
CC 'hepatitis A': 29.6% (of 27 notifications)	CC 'hepatitis A': 38.9% (of 18 notifications)
DDx ' acute viral hepatitis, unspecified': 25.3% (of 229 notifications)	DDx ' acute viral hepatitis, unspecified': 48% (of 102 notifications)

Results – Early Identification of Acute HAV Using Syndromic Surveillance

378 total HAV-related notifications (June 2018-October 2019)

126 (33%) determined to be confirmed HAV infections

Of the confirmed HAV infections:

- 100 (79%) of SS notifications received at least 1 day earlier than was reported to DPH by the provider/laboratory
- 9 (7%) of SS notifications received the same day as when reported to DPH
- 17 (13%) of SS notifications received at least 1 day after when reported to DPH

48 of all SS notifications received were among patients reporting being a contact of having possible HAV exposure

- 23% determined to be confirmed HAV infections

Conclusions

- SS based on discharge diagnoses ('hepatitis A' and 'acute viral hepatitis, unspecified') and chief complaint of 'hepatitis A' have the best ability to capture HAV infections in high incidence areas
    - Should be prioritized for follow up by District Epidemiologists for early detection of HAV infections
- Using SS as part of HAV outbreak response can be a beneficial tool in the early identification of cases and allows for DPH staff to initiate investigations, identify contacts, and implement prevention measures to quickly prevent further spread of infection
- Data shows need to target EDs and UCs that are identified as not immediately reporting suspect/confirmed HAV infections to DPH

Thank you!

Dishka Ramnani, MPH
Wisconsin Department of Health Services

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COVID-19 Metrics

Diksha Ramnani

11/17/2020

WISCONSIN DEPARTMENT of HEALTH SERVICES

Purpose

- Present COVID-19 metrics at county and regional geographies
- Account for day of the week effect, daily fluctuations, and small counts
- Allow comparison between confirmed cases and COVID-like Illnesses (CLI)

Methodology

COVID-like Illnesses (CLI)

- Original: Linear regression
- Proposed: Two-week comparison with indications for burden, trajectory, and a composite measure

	Shrinking	No Significant Change	Growing
Low	Low	Low	Medium
Moderate	Medium	Medium	High
Moderately High	Medium	High	High
High	High	High	High
Very High	Very High	Very High	Very High
Critically High	Critically High	Critically High	Critically High

Burden	
Total number of CLI records per 100,000 in the last two weeks (B)	
Low	$B \leq 10$
Moderate	$10 < B \leq 50$
Moderately High	$50 < B \leq 100$
High	$100 < B \leq 350$
Very High	$350 < B \leq 1000$
Critically High	$1000 < B$

Trajectory	
Percent change from previous to current week (T), p-value from a Poisson test against T = 0 (p)	
Shrinking	$T \leq -10\%$ and $p < 0.025$
Growing	$10\% \leq T$ and $p < 0.025$
No Significant Change	Otherwise

Methodology

Influenza-like Illnesses (ILI)

- Original: Linear regression
- Proposed: Use historical data and align methodology with best practices
  - Baseline and threshold determined using historical average percent of ILI visits during non-influenza weeks
  - Percent of ILI visits in a single day are used to determine the final indication

Low Activity	Rolling 3-day average is below baseline
Moderate Activity	Rolling 3-day average is between baseline and threshold
Elevated Activity	Rolling 3-day average is above threshold

Use

- CLI and ILI are part of a published local data dashboard and the disease activity section.
- The CLI composite measure provided an indication for overall CLI burden.
- Included in mitigation guidance to guide local decision-making.

Contact

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BALTIMORE CITY HEALTH DEPARTMENT

Baltimore City's Project SOON Experience

(Surveillance of Opioid Overdose and Notification)

Darcy Phelan-Emrick, DrPH, MHS

November 17, 2020

2020 Syndromic Surveillance Symposium

Significant Findings

Bernard C. "Jack" Young
Mayor, Baltimore City
Letitia Dzirasa, M.D.
Commissioner of Health, Baltimore City

@Bmore_Healthy
BaltimoreHealth
health.baltimorecity.gov

Presenter Disclosures

Darcy Phelan-Emrick has no personal financial relationships with commercial interests relevant to this presentation.

Project SOON GitHub Website

https://github.com/bchd/Nonfatal-Overdose-Surveillance

Goals of Project SOON

To automate the process of

(1) conducting non-fatal opioid overdose surveillance, and

(2) notifying stakeholders of non-fatal opioid overdose "spikes" (i.e., clusters),

(3) using EMS data on a 24-hour cycle.

A grant from CSTE supported the development of Project SOON in 2017-2018.

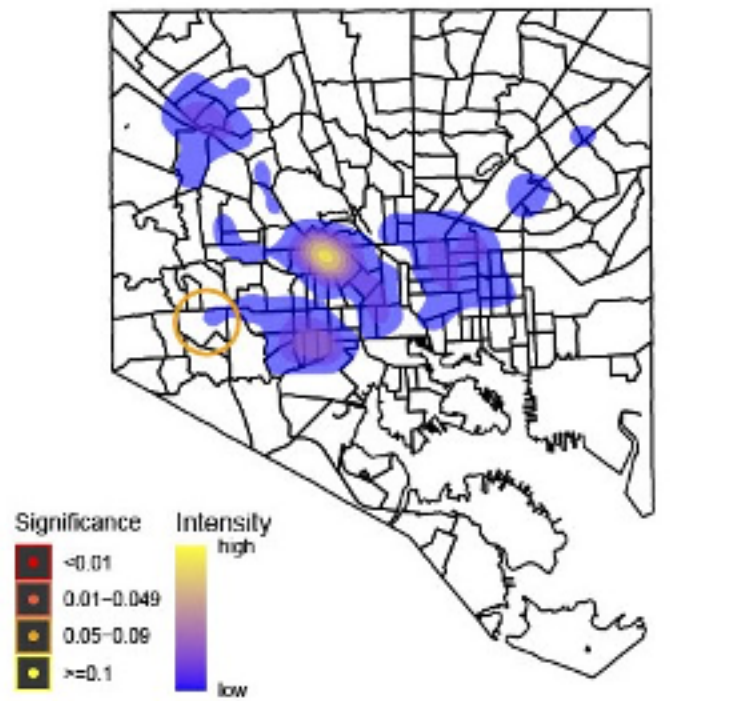
Analyses Used for Decision-Making

SaTScan to identify clusters of non-fatal opioid overdose in space and time

Minimum # non-fatal overdoses in cluster=3

Alert triggered when cluster p-value < 0.40

Figure 1A: Non-fatal Overdose Spatial Intensity, Last 30 days



Bernard C. "Jack" Young,
Mayor, Baltimore City
Letitia Dzirasa, M.D.
Commissioner of Health, Baltimore City

BALTIMORE CITY HEALTH DEPARTMENT

Overdose Alerts & Response

Health dept. staff notify outreach partner, Bad Batch app, behavioral health providers

Partner responds with street outreach in cluster area, if there is capacity

Bad Batch app sends text message to people who signed up to be notified of clusters in specific city regions
http://www.badbatchalert.com/

Acknowledgments

Baltimore City Health Department
Mike Fried, Jonathan Gross

Baltimore City Fire Department EMS
Claytonia Everette, Bryan Johnson, James Matz, William McCarren

Johns Hopkins School of Public Health
Frank Curriero, Anton Kvit, Amanda Latimore, Tim Shields

Code in the Schools ~ Bad Batch
Mike LeGrand, students who created the app

CSTE funding

BALTIMORE CITY HEALTH DEPARTMENT

Thank you for your time!
Questions?

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Using rsatscan for Automated COVID-19 Cluster Detection

Syndromic Surveillance Symposium

November 17th, 2020

Cook County DEPT. of Public Health

Promoting health. Preventing disease. *Protecting you.*

Background

- First COVID-19 case late January
- Cases outpace investigator capacity by April
- How do you detect outbreaks without complete epidemiologic data?
- Daily automated cluster detection with SaTScan!

General Process

1. Import confirmed cases into R
2. Use SatScan (via rsatscan package) to run cluster detection
3. If significant clusters detected, generate report with line list and map
4. Send report to epis for investigation or leadership for situational awareness

https://github.com/kb230557/rsatscan-cluster-detection-covid

Summary for Cluster ID 2020-06-15-COVID-1

A significant cluster has been identified for **COVID**. Specimen dates for cases in the cluster range from **June 12, 2020** to **June 13, 2020**. The observed number of cases in the cluster is **9**; the expected number of cases was **1.38**, for an observed-to-expected ratio of 6.52.

A line list and map of cases included in the cluster can be reviewed below.

Line List

Basic demographics for cases in this cluster appear below:

State_Case_Number	Specimen_Date	Last	First	Age	Race	Ethnicity	Deceased	City
20-3274016								
20-3274048								
20-3273507								
20-3274041								
20-3274046								
20-3274049								
20-3274050								
20-3274053								
20-3274054								

Cluster Map

Black points represent cases that are included in this cluster. Hover over each point to view the case's state case number, age, and sex at onset. The blue circle represents the cluster area identified by SaTScan - click on the cluster to see the date range as well as observed and expected case counts. Each layer can be turned on and off using the layer controls icon in the top right corner.

Results

- 52 runs between 6/10/2020 –8/31/2020
- 10 clusters generated a report
- 3 not investigated
  - 2 shared for situational awareness
- 7 investigated – all verified clusters
  - 1 family cluster
  - 2 linked to congregate settings
  - 4 linked to two community events

Contact Information

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Block Schedule

Training | Methods | Innovation | Data Sharing

1:30-2PM EST	Keynote Address			
	...BREAK...			
2:15 - 3PM EST	Training: NSSP ESSENCE 101	Breakout: Spike, Alert, GO!	Breakout: Data Access and Integration	Breakout: Successful State-led Data Sharing Collaborations
		...BREAK...		
3:15-4PM EST		Lightning: Significant Findings	Roundtable: Bringing New Partners to the Table	Breakout: Can I Do That? Ask a Lawyer.
	...BREAK...			
4:15-5PM EST	Training: Custom Syndrome Definition in NSSP ESSENCE	Breakout: Match Point - Data Matching Across Sources		Roundtable: Establishing a Public Use Shared Data Set
	...BREAK...			
5:15-6PM EST	Virtual Happy Hour			

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