Exploratory Analysis

ARIZONA DEPARTMENT
OF HEALTH SERVICES

Agenda

- Welcome & Introduction
- Goals
- Tools for Syndromic Surveillance Users
- Announcements
  - Syndromic Updates
  - CSTE/CDC & Kauhini
  - Syndromic Surveillance Symposium
- Presentation: Data Quality Best Practices
- Presentation: Heat-Related Illness Dashboard - Office of Environmental Health
- Topics of Interest
- Discussion
- Closing

Purpose of Exploratory Analysis Meetings

The purpose of Exploratory Analysis Meetings is to discuss coming up with resources that can be beneficial to everyone using Syndromic Surveillance Data in the State of Arizona. Discussing ESSENCE (Electronic Surveillance System for the Early Notification of Community-Based Epidemics) questions and issues you have come across, ideas you have for future projects, and recognizing current and past work on projects dealing with syndromic surveillance here in Arizona. The goal of Exploratory Analysis is to build the capacity and quality of Syndromic Surveillance in Arizona.

Useful Tools for Syndromic Surveillance Users

- Arizona Specific
  - Syndromic Surveillance Handbook
  - Arizona Biosense Community of Practice
  - SS Quick Guide
  - Arizona New User Checklist
- National Level
  - NSSP Community of Practice
  - Knowledge Repository
  - CDC NSSP Webpage
  - NSSP Slack

Basecamp

- Important Documents and Trainings
- Calendar for Exploratory Analysis Meetings, Community of Practice Meetings, trainings and other relevant events
- Message Board to communicate with Arizona Users throughout the State
- Ability to Assign tasks to other users
- Our Knowledge Repository

Syndromic Surveillance Handbook

- Best Practices and Guidelines for Arizona Users of NSSP Biosense Platform
- Includes an Overview of Syndromic Surveillance, Data Access, New User Training, Permitted Data Use and more

Updates

- A number of facilities are in the process of switching over EHR venders.
  - Included Facilities : Arizona General Hospitals, St.Joseph's, Yavapai
  - Some of the feeds might be interrupted
- Still in the Process of Onboarding Sage and Benson
- In process of Revalidating are
  - Northwest Medical
  - Oro Valley
- We are also working on running Data Quality Checks for timeliness, completeness and validity

2022 Syndromic Surveillance Symposium

Save the Date! **December 6-8, 2022** | Virtual Syndromic Surveillance Symposium

Coming Soon

- Call for Abstracts (anticipated to open 1st week of August)
  - Abstract formats: Roundtable, Breakout, Training
  - Abstract topics: Data Quality, Data Sharing, Methods and Application, Syndrome Definitions, Using Data for Public Health Action, Other

- Call for Volunteers
  - Participate on the planning committee, as an abstract reviewer, and/or session moderator

CSTE/CDC NSSP model SyS training series

KAHUINA CONSULTING

Designed for new SyS analysts and data consumers to…

a. establish foundational concepts of SyS methodology

b. conceptualize new SyS public health applications

c. confidently act on SyS analyses

Foundational Syndromic Surveillance Training Series

Starting August 2022 (exact training dates TBD)

SyS State of Mind

Explore the common data sources and methods that define SyS practice. Learn how analyst query data and craft syndromes for many public health problems. Apply new knowledge to interactive exercises and simulated experiences, preparing learners to look at public health surveillance through a SyS lens.

Learning Objectives:
1. Describe the general process to categorize records into syndromes
2. Apply characteristics of SyS data (sources, variables, quality) when describing SyS results
3. Distinguish between which public health issues are and are not well suited for SyS

Expected Outcomes:
1. Reliably and confidently define a syndrome using typical syndromic surveillance data elements
2. Reliably and confidently describe representativeness and limitations of SyS results
3. Accurately frame and/or develop hypotheses for SyS applications

August

Expanding SyStems

Identify different SyS analysis methods to support different surveillance and response needs. Learn how to apply a near real-time data source to a diverse set of public health problems, broadening SyS utility. Content for all types of learners, with active engagement, didactic presentations and action-led micro-learning.

Learning Objectives:
1. Select and apply the analysis method as appropriate for the context and health condition of interest.
2. Identify how to utilize SyS data and methods for multiple public health domains

Expected Outcomes:
1. Accurately describe appropriate analytic methods to characterize processed SyS data.
2. Expand SyS application to additional health conditions of interest and public health domains.

September

AnalySys and Communication

Translate data into recommendations and public health actions. Learn how to tell a story through SyS analysis interpretation. Simulated learning experiences are coupled with integrated support tools to maximize best practices.

Learning Objectives:
1. Select appropriate public health actions based on SyS analysis.
2. Describe key messages for various target audiences, including data providers, decision makers, and the public

Expected Outcomes:
1. Determine appropriate response/public health action based on SyS finding
2. Craft and/or make recommendations for tailored communication per audience profile.

October

Presentations

Best Practices Data Analysis:

By Alexis Griffin

Guiding principle: Good data management practices for data analysis begins with data collecting, cleaning and transforming.

Data Collecting: validity, timeliness, completeness

Collecting Quality Data

Validity

Data is correctly formatted and stored

Timeliness

100% of priority one variables(n = 21) arrive within 24 hours

- Admission time and date
- Admission reason
- Chief complaint
- Cause of Death
- Facility ID
- Patient Class
- Patient Age
- Patient ID
- Diagnosis Code
- Zip Code
- Trigger Event

Completeness

100% of priority one variables (n=21) are filled.

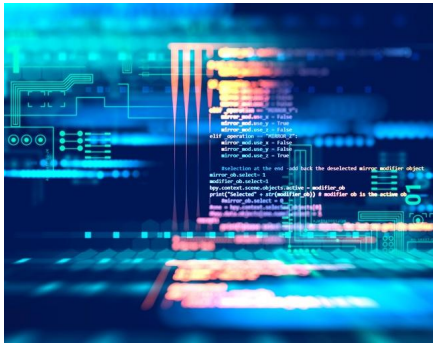
Data Cleaning: finding and eliminating errors in the data

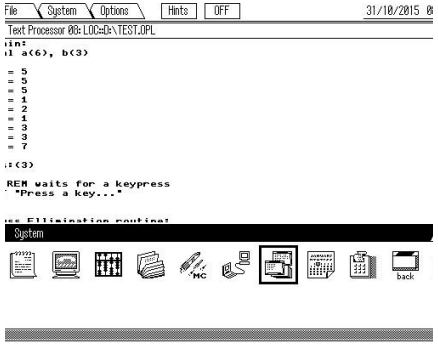
Data Cleaning

- Cases that shouldn’t be include
  - i.e fetal deaths in database for infants
- Duplicate cases
- Incorrect and impossible variables
  - i.e. age is listed as 999
- Skip-pattern or logic breakdowns.
  - i.e transfers of infants included as a birth
- Missing data and outliers
  - Variables are missing substantial data

Procedures for Data Cleaning

1. Map out logic of your research project.
2. With language/ platform of your choice, look for duplicates. Many language/ platform have straightforward commands to look for duplicates.
3. With language/ platform of your choice, look for missing values and value range.
4. Analyze results. Do the results make sense? Are facilities/ subgroups being included that do not make sense?





Conclusion

Data analysis depends on data management within the database.

It also depends on a strong research plan that is selecting and eliminating cases that do not fit plan.

Questions?

Discussion/Open Mic

- What ESSENCE questions or issues have you come across?
- What ideas do you have for future projects?
- What would you like to see syndromic surveillance data used for?

Topics of Interest

Future Meetings

- Next Exploratory Analysis Meeting
  - October 19th at 1:30 PM
  - December 14th at 1:30 PM
- NSSP CoP
  - August 24th at 9 AM
- Arizona CoP
  - Quarterly
    - November

Thank you

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