Presenter Information

Charlotte Cherry

**Role:** Epidemiologist, lead of data visualization in the Advanced Analytics and Visualization Unit of the Office of Informatics and Analytics at the Tennessee Department of Health (TDH)
I’m passionate about: Getting data and information into the hands of the stakeholders and partners, leadership, and the public working to put data to action!
Today’s Topic

Mission: Show examples of data visualizations from our working group dashboards
  • Focus on visualizations for partners and stakeholders

Highlight: How partners and stakeholders use the data and information
Office of Informatics and Analytics

- Data Governance
- Core Informatics
- Advanced Analytics and Visualization

**Mission:** To develop, use, and promote best practices of informatics, data governance, and analytics that drive insightful public health decision-making for the Tennessee Department of Health and its partners.

**Vision:** To be a trusted leader in providing data-driven solutions for public health practice in Tennessee.
More information about OIA Data Products: [https://www.tn.gov/health/health-program-areas/pdo.html](https://www.tn.gov/health/health-program-areas/pdo.html)
Integrated Data System-Data to Visualizations
Public Health Surveillance-Drug Overdose

• Death certificates
• Hospital discharge billing records
• Controlled Substance Monitoring Database (CSMD)
• Emergency Medical Service (EMS) runs
• Drug shipment data
• Healthcare associated infections
• Viral hepatitis
• Neonatal abstinence syndrome
• And many more sources at other state agencies
Integrated Data System (IDS)

- In 2016, OIA established the IDS to provide support for cross departmental analysis and visualization.

- Comprised of two environments (test and production) with three components in each environment: (a) discovery, (b) repository for all source data and, (c) data warehouse specifically architected to support efficient and intuitive usability.

- Use case driven, initial use cases include support for controlled substance monitoring and overdose surveillance.

- Established IDS processes to onboard and bring new data into the IDS, to request access, to request data, and to request enhancements have all been added to improve the functionality of the system.
Data Visualization for Partners and Stakeholders
Partners and Stakeholders

• Harold Rogers Data Driven Working Group
  • DOJ-BJA Grant Funded
  • Objective
    • Build collaborative relationships with agencies and departments
    • Identify opportunities to share data and information
    • Utilize data and information to drive joint activities and programmatic planning
Partners and Stakeholders

• Internal
  – Overdose Response Coordinating Office (ORCO)
  – Communicable and Environmental Disease and Emergency Preparedness
    • Viral Hepatitis Program
    • HIV Prevention and Surveillance
  – Controlled Substance Monitoring Database Program
  – Office of State Chief Medical Examiner
  – Emergency Medical Services
  – “End the Syndemic” Working Group—jointly address HIV, STIs, VH, and substance use disorder (SUD) in TN

• External
  – Tennessee Bureau of Investigation—Dangerous Drugs Task Force
  – Tennessee Department of Mental Health and Substance Abuse Services—Office of Prevention
  – Tennessee Department of Children’s Services—Office of Child Protective Services Investigations
Nonfatal Opioid Overdoses as Reported to the Tennessee Department of Health: March 2021

March: 792
2021 YTD: 2,176
2020 YTD: 1,923

Source: Tennessee Department of Health, Office of Informatics and Analytics, Drug Overdose Reporting system.

Figure 1. Hospital Reported ICD-10-CM Coded Opioid Overdoses by Month

Figure 2. Hospital Reported ICD-10-CM Coded Opioid Overdoses by Age Group: March

Figure 3. Hospital Reported ICD-10-CM Coded Opioid Overdoses by Opioid Class

Ease of understanding?

Meaningful?
Heat map of hospital reported ICD-10-CM coded opioid overdoses: March 2021

Counts are based on patient residence zip code as reported by the hospital facility to the Tennessee Department of Health Drug Overdose Reporting System.

Crude rate (per 100,000 county residents) of hospital reported ICD-10-CM coded opioid overdoses: April 2020-March 2021

*Counties with a count of overdose fewer than 10 are not available. When the number of overdoses used to compute a rate is very small, the value is considered unstable.

Source: Tennessee Department of Health, Office of Informatics and Analytics, Drug Overdose Reporting system.

Counts are based on patient residence zip code as reported by the hospital facility to the Tennessee Department of Health Drug Overdose Reporting System.

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No reported counts in Lewis and Pickett Counties.*
Partners and Stakeholders

- Bi-Weekly Meeting Tableau Dashboard
  - Ease of understanding?
  - Meaningful?
  - Actionable?

Mode of Dissemination: Review within the working group
Weekly Timeseries—Tennessee Statewide Hospital Reported Nonfatal Opioid Overdoses
Weekly Timeseries—Tennessee Statewide Hospital Reported Nonfatal Opioid Overdoses

- Less is more!
4-Week Rolling Average—TDH Public Health Region, Hospital Reported Nonfatal Opioid Overdoses
Weekly Timeseries—Hospital Reported Nonfatal Opioid Overdoses by County
Hospital Reported Nonfatal Opioid Overdoses by Zip Code

*Zip codes with ≤ 10 counts are not shown
Tennessee Statewide—Hospital Reported Nonfatal Opioid Overdoses by Age
Using Data and Information for Action
Target Outreach and Prevention

• Examples:
  • Tennessee Department of Mental Health and Substance Abuse Services (MHSAS)
  • Regional Overdose Prevention Specialists (ROPS)
    • Distribute additional naloxone
    • “Pop up" events setting up a tent in parking lots and talking to people who stop by
  • Outreach at food banks
  • Alert community agencies of increased activity so they can inform their program participants
  • Coordinate with law enforcement and provide them with additional materials to leave at sites of overdoses (e.g. resource cards/guides, ROPS information for naloxone training)
Focus on Areas with Higher Overdose

• Examples:
  • Tennessee Department of Children’s Services has established Specialized Drug Teams in all six of their regions of Tennessee
    • Scaling up of teams in certain areas based on overdose data trends
  • TDH Syringe Service Programs
    • Using overdose data to better target where to scale SSPs and how to better reach more rural areas
Data Trainings

• Examples:
  • TDH-OIA
    • Met with community substance abuse prevention coalitions to share information about overdose trends in their county
      • This enabled the coalitions to receive one on one assistance and ask questions about local trends
    • Held a small data training for librarians in Montgomery County, Tennessee so they could better understand overdose trends in their community
      • Librarians are incredible resources
      • Touch points to help point individuals to services
Tips and Lessons Learned

• Always an iterative process
• Bite size content is effective
• Partners have varying levels of data literacy
• Balance between “more is more” and “less is more”
• Dynamic, always with an eye towards the future
Public Facing Data Vizzes

2019 Tennessee Drug Overdose Deaths Annual Report

Key Findings:
- In 2019, 2,089 Tennesseans died of a drug overdose. This represents a 15% increase in drug overdoses from 2018.
- There were large increases in the number of men and number of opioid deaths involving an opioid.
- Deaths involving illicit drugs such as fentanyl and methamphetamine have increased drastically since 2018.

Drug overdose deaths in Tennessee are at an all time high.
2,089 Tennesseans were lost to drug overdose in 2019

Deaths involving illicit drugs, mainly fentanyl and stimulants, are on the rise.

Stimulant deaths primarily involved methamphetamine and cocaine.

Deaths involving prescription pain relievers have decreased over the last three years (from 2017-2019).

2019 Drug Overdose Death Rates across Tennessee

All drug overdose deaths and deaths involving an opioid continued to increase in 2019.
Opioids include:

Pain Relievers, Heroin, Fentanyl

Number of Deaths per 100,000 Tennesseans

Learn more by reading the full report!
Public Facing Data Vizzes

Overdose deaths in TN involving a stimulant like the drug methamphetamine increased by 41% from 2018 to 2019.*

*Not including deaths involving cocaine.

To learn more: www.tn.gov/health/health-program-areas/pdo.html
Health Equity

Collect, analyze and share data to develop and contribute to an expanding understanding of health that links social determinants of health and health inequities and health outcomes.

1. Does our organization **collect and analyze data** to develop an understanding of the relationships between social and economic conditions and health outcomes?
2. Does our organization **produce or contribute to reports** that illustrate the relationships among the social determinants of health and health outcomes?
3. Has our organization conducted any analyses using tools such as a health impact assessment or research studies to examine and demonstrate impact on health inequities across policy sectors?
4. Does our organization routinely include the broader context of health determinants and health and racial inequities in its reports?
Drug overdose deaths continue to rise among White Tennesseans and drug overdose deaths among Black Tennesseans have risen sharply since 2018.

Health Equity

From 2018 to 2019, there was a 66% increase in the number of Black Tennesseans who died of a drug overdose.

Data Source: Tennessee Death Statistical File
Analysis: Tennessee Department of Health, Office of Informatics and Analytics
Contact Information

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Questions?

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https://cossapresources.org/Program/TTA