EMS Data in Georgia

- Office of EMS (OEMS) is part of Georgia Department of Public Health (DPH)
- All EMS trips have mandated reporting within 24 hours
- GEMSIS (Image Trend ELITE) is available for free to all EMS agencies
- EMS data is used throughout GA for many different programs
- Drug Surveillance Unit (DSU) using EMS data for the State Unintentional Overdose Reporting System (SUDORS) since 2017
EMS Data Quality Improvement

- DSU wanted to improve EMS data for integration into Syndromic Surveillance (SS)
- Along with SS, it is our most timely source
- Detects overdoses that may not present to the emergency department
- Allows DPH to monitor increases in overdose-related ED visits and/or EMS trips to identify any potential overdose clusters in nearly real-time
  - Essential for a timely public health response
Great variation in quality and completeness of EMS data

Importance of thorough and consistent documentation of overdose-related EMS trips

With OEMS, DSU developed best practices for documenting OD trips

Used NEMSIS national standards

Includes suggested ICD codes and key words

EMTs across GA trained on the protocol dph.georgia.gov/EMS

Analysis to evaluate the effect of guidelines on quality of EMS overdose data
Methods

• Time series of daily EMS overdose-related trips were plotted based on training schedule
  • Proportion of trips compliant with guidance was plotted over time
  • This analysis focused on Primary Impression and Secondary Impression
  • Plots included a LOESS smoothed line to summarize trend over time
  • Regression and a nonparametric test were used to determine the statistical significance of the increase over time
• A smaller sample was created by reading through the narratives of the cases and confirming trips were overdose related
• Sources of compliance variation were examined by analysis of other contributing factors
Results

- Smoothed line over the visits showed a modest increase over the duration of the intervention
- Months with missing data had lower levels of compliance with the guidance
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- Smoothed line over the visits showed a modest increase over the duration of the intervention.
- Months with missing data had lower levels of compliance with the guidance.
- Wilcoxon Rank-Sum: $W = 969.5$, p-value < .001.
- Linear Regression line shows increasing proportion of visits complied with guidance.
Results

Small Sample Analysis

- A random sample of trips was taken from each of three months
- Two analysts read the narratives and determined whether the trips were overdose-related or not
  - A lot of uncertainty
- After finding 100 trips per month, the proportion of guidance-compliant trips was plotted
- The association between the intervention and the proportion of visits that had the F-codes was not able to be replicated.
Lessons Learned

The most common primary impression codes among the small sample were:

- **R4182** – Altered Mental Status Unspecified
- **F119** – Opioid Use Unspecified (Included in DPH Guidance)
- **R4689** – Symptoms Involving Appearance or Behavior, Other
Lessons Learned

- Director of EMS suggested that the software for different providers may not allow entering certain values
- We looked into the compliance with our guidelines by software creator
- **We found that one software creator increased by a large margin**
  - There were no other software creators that saw a comparable increase
- It is possible that this software is more flexible or changed their auto population criterion to fit our guidance
Next Steps

• Communicate findings to OEMS
• Provide feedback and recommendations to individual EMS agencies
• Continue to provide education on data quality improvement
• Work with DPH Office of Informatics to integrate EMS data into SS system
• Refine Overdose EMS Case Definition and integrate EMS data into routine overdose surveillance
THANK YOU!

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