Antimicrobial Usage in Tennessee Hospitals using the National Healthcare Safety Network Antimicrobial Use and Resistance Module Antimicrobial Use Option

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### Background
- Improved use of antimicrobials is a necessity to combat growing antimicrobial resistance.
- National Healthcare Safety Network (NHSN) Antimicrobial Use (AU) Option allows hospitals to voluntarily track, analyze, and report facility antimicrobial use.
- State health departments have a unique opportunity to analyze AU data on a regional and state-wide level, providing a means of understanding AU trends and evaluating stewardship interventions.

### Objectives
- To identify statewide and regional trends of antimicrobial use in hospital inpatient units using a novel data source.
- To identify limitations and considerations in using NHSN data to monitor AU in TN.

### Methods
- Facility-level data was aggregated to describe statewide usage of antimicrobials among acute care and critical access hospitals that reported to the NHSN AU Option in 2017.
- AU rates were calculated as antimicrobial days of therapy (DOT) per 1,000 days present (DP) for all facilities that reported at least one month of data in 2017.
- Rates were calculated at the facility, regional, and state levels and were stratified by antimicrobial category (antibacterial/-fungal/-influenza) and specific antimicrobials used.

### Definitions
- **Days of Therapy (DOT):** the sum of days for which any amount of a specific antimicrobial was administered to a patient
- **Includes 89 different antimicrobials stratified by route of administration**
- **Days Present (DP):** the number of days in which a patient spent any time in a specific unit or facility
- **Reported for all individual hospital units**

### Results
Twenty-three facilities from 14 counties and 5 emergency medical service (EMS) regions reported at least one month of data to the NHSN AU Option in 2017.

### Discussion
- There is significant variation in regional usage of antimicrobials.
- Regional analyses of specific antimicrobials are needed to explain AU rate differences.
- A limitation of the NHSN AU Option data is the inability to distinguish between appropriate and inappropriate usage.

### Conclusions
- The NHSN AU Option is a valuable resource for quickly identifying regional and statewide AU trends.
- More robust surveillance data is needed to better reflect statewide AU practices and determine the geographic and therapeutic areas in greatest need of stewardship interventions.
- Tennessee will require acute care hospitals to report to the AU option beginning January 1, 2021.

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