Antimicrobial Steward Call
June 8, 2021
Tennessee Department of Health
Healthcare Associated Infections and Antimicrobial Resistance Program
AU Quality Reports

- **Q1 2020 Disseminated**
- **Plan for quarterly disseminations**
  - Data downloaded 6 weeks after end of quarter
  - ~4 weeks to analyze, prepare and review

Antimicrobial Days Reported for any Drug when Days Present Reported as Zero

*No Flags Identified*

**Rationale:** This report flags when a location reports antimicrobial use for any agent but reports 0 days present for the location. If no patients were present on a given location, then no antimicrobial days should be reported.

**Potential Solutions:** If patients were present at the location, check with vendor to ensure surveillance software is accurately pulling and reporting ADT data. If no patients were present at the location, check to ensure surveillance software is accurately pulling eMAR/BCMA data and attributing it to the correct location.

Reported Antimicrobial Days for a Single Drug Greater Than Days Present

*No Flags Identified*

**Rationale:** Based on the NHSN AU Protocol, a single patient can only contribute up to one antimicrobial day per drug per location. Therefore, total antimicrobial days for an individual drug may not exceed reported days present.

**Potential Solutions:** Review your eMAR/BCMA system antimicrobial day counts to ensure the vendor system attributes only one total antimicrobial day per drug per patient per calendar day regardless of how many doses were administered to the patient during that day. Review the ADT system days present to ensure the vendor system attributes one day present per patient if the patient is in the location at any time during that calendar day. Then check with your vendor for the next steps on addressing this data quality issue.
## Core Elements Statistics as of May 2021 – YUSUF UPDATING!

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Total number of facilities</th>
<th>Number of reporters</th>
<th>% actually have completed survey</th>
<th>5+ core elements achieved</th>
<th>7 core elements achieved</th>
<th>% of reporting achieving all 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Care Hospital (non CAH)</td>
<td>107</td>
<td>99</td>
<td>93%</td>
<td>98</td>
<td>88</td>
<td>89%</td>
</tr>
<tr>
<td>Critical Access Hospital</td>
<td>14</td>
<td>10</td>
<td>71%</td>
<td>9</td>
<td>9</td>
<td>90%</td>
</tr>
<tr>
<td>LTACH</td>
<td>9</td>
<td>8</td>
<td>89%</td>
<td>8</td>
<td>8</td>
<td>100%</td>
</tr>
<tr>
<td>IRF</td>
<td>30</td>
<td>26</td>
<td>87%</td>
<td>26</td>
<td>25</td>
<td>96%</td>
</tr>
</tbody>
</table>
Core Element Achievement Over Time

% Hospitals Achieving 7 Core Elements

- 2015: 49
- 2016: 66
- 2017: 83
- 2018: 88
- 2019: 92
- 2020: 86
Percent of ACH achieving all 7 Core Elements by Region, 2020

- **West TN**: 100% (N=21)
- **Upper-Cumberland**: 100% (N=7)
- **East TN**: 89% (N=18)
- **Northeast TN**: 90% (N=10)
- **South Central TN**: 75% (N=8)
- **Southeast TN**: 100% (N=12)
- **Memphis Delta**: 62% (N=13)
2020 Achievement by Core Element

% of Hospitals Achieved

Leadership: 99%
Accountability: 98%
Drug Expertise: 98%
Action: 98%
Tracking: 98%
Reporting: 98%
Education: 88%
Action Items – All Hospital Types

% of Hospitals Achieving Specific Interventions

- Prior Authorization: 48%
- Guideline Development: 90%
- Antibiotic Time-Out: 64%
- Prospective Audit and Feedback: 73%
- Duration Documentation: 63%
- Indication Documentation: 79%
Reporting Items – All Hospital Types

% of Hospitals Reporting...

- Unit-specific AU Reports: 61%
- AU and Outcomes to Hospital Staff: 69%
- AU and Outcomes to Hospital Leadership: 94%
- Prospective Audit and Feedback: 64%
Education Items – All Hospital Types

% of Hospitals Educating [Provider] on Appropriate Antibiotic Use

- Nurses: 58%
- Pharmacists: 84%
- Prescribers: 79%
Areas for Improvement Statewide

- Nursing Education in Acute Care Hospitals
- Prior-Authorization Adoption
- Transition from DDD to DOT Tracking
- Antibiotic Resistance Patterns – not 100%?
- Informing Staff of Antibiotic Stewardship Outcomes
COVID – 19 Update –
Christopher Wilson
Tennessee Situation Report (as of 6/7)

Cases
+29 since yesterday
864,195 Total

Deaths
-1 since yesterday
12,479 Total

Hospitalizations
-31 (net) since previous day
354 Current Total*

Tests
+4,274 since yesterday
8,033,341 Total

*Please note: Hospitalization totals are subject to a 24 hour delay, thus they represent hospitalizations through yesterday. These data are dynamic and change as hospitals update information on their patients and enter data into our Healthcare Resource Tracking System. Please see our Current COVID Hospitalizations visualization for the most up-to-date information.

Click here for complete data report, including county level information.

https://www.tn.gov/health/cedep/ncov.html
• Emergency department data
  – Chief complaints
  – Discharge diagnoses
• Deidentified
• Received within 24h of patient encounter
• Reported from 99 hospitals across TN
• Syndromes
  – Influenza-like illnesses (ILI): is defined by terms, free text, or discharge diagnoses that are likely to be related to illness caused by seasonal influenza. The visits counted within these criteria will contain a percentage of illnesses caused by conditions other than influenza infection. These results should be considered preliminary in nature and are not all confirmed diagnoses of disease.
  – COVID-like illnesses (CLI): is defined as symptom terms, free text, or discharge diagnoses specified by CDC that are likely to be related to illness caused by the 2019 novel Coronavirus. The visits counted within these criteria will contain a percentage of illnesses caused by conditions other than novel coronavirus infection. These results should be considered preliminary in nature and are not all confirmed diagnoses of disease.
Syndromic Surveillance (updated 5/30)

Decline in CLI & ILI cases from 3/22–5/23/20
Increase in CLI from 5/24-6/28
Increase in ILI 6/14-7/12
Increase in CLI 3/7
Decrease in CLI 12/27

https://www.tn.gov/health/cedep/ncov/data/syndromic-surveillance.html
Case Counts (Daily) (6/7)

By Public Health Report Date

- 12K
- 11K
- 10K
- 9K
- 8K
- 7K
- 6K
- 5K
- 4K
- 3K
- 2K
- 1K
0K

New Cases

Public Health Report Date

7 Day Average of New Cases
PCR Test Percent Positivity

7 Day Average: 3.30%
Deaths (n=12,479) (as 6/4)

Case Fatality Rate: 1.4%

4-Day Moving Average Number of Deaths
Healthcare Resources

- Healthcare Resource Tracking System
  - Established in 2006
- Acute care hospitals report daily:
  - Number of beds (floor / ICU / AIIR)
  - Number of ventilators
  - Amount of PPE
  - Number of COVID-19 patients (floor, ICU, ventilated, pending)

HOSPITALS
Treat all patients without crisis care
AND
Robust testing program in place for at-risk healthcare workers, including emerging antibody testing.
Current Hospitalizations (as 6/7)

COVID patients represent ≈ 2.7% of all hospitalized patients in TN.
Genomic Epidemiology of SARS-CoV-2

https://nextstrain.org/ncov/global
SARS-CoV-2 Variant Levels

- **n=0** (at this time)
  - Variants of high consequence

- **n=5**
  - B.1.1.7
  - P.1
  - B.1.351
  - B.1.427
  - B.1.429

- **n=8**
  - B.1.526, B.1.526.1
  - B.1.525
  - B.1.617, B.1.617.1, B.1.617.2, B.1.617.3
  - P.2
<table>
<thead>
<tr>
<th>Name</th>
<th>First Detected</th>
<th>Transmissibility</th>
<th>Ability of Current Therapeutics to be Effective?</th>
<th>Protection by past infection or vaccine?</th>
<th>In Tennessee?</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.1.1.7</td>
<td>United Kingdom</td>
<td>+~50%</td>
<td>Minimal impact on neutralization</td>
<td>Minimal impact on neutralization</td>
<td>3645</td>
</tr>
<tr>
<td>B.1.351</td>
<td>South Africa</td>
<td>+~50%</td>
<td>Moderate impact on neutralization</td>
<td>Moderate reduction in neutralization</td>
<td>13</td>
</tr>
<tr>
<td>B.1.429</td>
<td>California</td>
<td>+~20%</td>
<td>Significant impact on neutralization by some, but not all, EUA therapeutics</td>
<td>Moderate reduction in neutralization</td>
<td>41</td>
</tr>
<tr>
<td>B.1.427</td>
<td>California</td>
<td>+~20%</td>
<td>Significant impact on neutralization by some, but not all, EUA therapeutics</td>
<td>Moderate reduction in neutralization</td>
<td>43</td>
</tr>
<tr>
<td>P.1</td>
<td>Japan/Brazil</td>
<td>?</td>
<td>Moderate impact on neutralization</td>
<td>Reduced neutralization</td>
<td>72</td>
</tr>
</tbody>
</table>
Vaccine update
### Breakthrough Cases (as 5/26)

- Prior to May 1st: All people that meet case definition
- May 1st and after: People that meet case definition and had an outcome of hospitalized or deceased from COVID-19

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total Number of Vaccine Breakthrough Infections Reported to CDC</th>
<th>Total Cases in TN = 907</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymptomatic infections</td>
<td>216 (23%)</td>
<td></td>
</tr>
<tr>
<td>Deaths</td>
<td>16 (2%)</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>575 (62%)</td>
<td></td>
</tr>
<tr>
<td>Hospitalizations</td>
<td>97 (11%)</td>
<td></td>
</tr>
<tr>
<td>People aged &gt; 60</td>
<td>425 (46%)</td>
<td></td>
</tr>
</tbody>
</table>
## Vaccination update (as 6/7)

<table>
<thead>
<tr>
<th>Total Vaccinations Reported</th>
<th>Vaccinations Reported Since 5/31/2021</th>
<th>% of People Statewide With at Least One Dose</th>
<th>% of People Statewide Fully Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,951,577</td>
<td>86,970</td>
<td>39.9%</td>
<td>34.2%</td>
</tr>
</tbody>
</table>

Providers administering COVID-19 vaccines are expected to report vaccine doses to the state Immunization Information system (TennIIS) within 24 hours of administration and are required to report doses no later than 72 hours after administration.

**Please note:** The Summary Page includes all vaccinations reported to TennIIS from Tennessee providers, regardless of patient’s state of residence. These numbers will differ from the Population Page, which contains data on Tennessee residents only.

Number of People with
- **Series Initiation** (1 dose of Pfizer / Moderna)
- **Series Completion** (2 doses of Pfizer / Moderna OR 1 dose of Janssen)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>People Vaccinated</th>
<th>% of People Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-15 years</td>
<td>37,589</td>
<td>1.4%</td>
</tr>
<tr>
<td>16-20 years</td>
<td>107,893</td>
<td>4.0%</td>
</tr>
<tr>
<td>21-30 years</td>
<td>292,585</td>
<td>10.8%</td>
</tr>
<tr>
<td>31-40 years</td>
<td>340,288</td>
<td>12.5%</td>
</tr>
<tr>
<td>41-50 years</td>
<td>375,423</td>
<td>13.8%</td>
</tr>
<tr>
<td>51-60 years</td>
<td>473,813</td>
<td>17.4%</td>
</tr>
<tr>
<td>61-70 years</td>
<td>539,037</td>
<td>19.8%</td>
</tr>
<tr>
<td>71-80 years</td>
<td>386,750</td>
<td>14.2%</td>
</tr>
<tr>
<td>81+ years</td>
<td>168,290</td>
<td>6.2%</td>
</tr>
<tr>
<td>Pending</td>
<td>347</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>2,722,015</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient Race</th>
<th>People Vaccinated</th>
<th>% of People Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>56,945</td>
<td>2.1%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>305,185</td>
<td>10.9%</td>
</tr>
<tr>
<td>White</td>
<td>1,735,798</td>
<td>64.5%</td>
</tr>
<tr>
<td>Other/Multiracial</td>
<td>488,460</td>
<td>18.3%</td>
</tr>
<tr>
<td>Unknown</td>
<td>135,627</td>
<td>4.3%</td>
</tr>
<tr>
<td>Total</td>
<td>2,722,015</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Vaccination update (as 6/7)
High SVI Counties (as 6/4)

Of 35 High SVI Counties:
3 have first dose coverage above the state rate (Madison Co is highest at 47.33%)
5 have first dose coverage rates within 90% of the state rate
9 have first dose coverage rates within 80% of the state rate
18 have first dose coverage rates <80% of the state rate (Grundy Co is lowest at 19.37%)

Overall lowest vaccination rates: Moore (16.81%), Grundy (19.37%), Macon (21.51%)
Topic 1: The Concept of Infection Control
06/08/2021
Agenda:

• Project Firstline and the concept of infection control
  • Video
  • Discussion and reflection
• Session feedback form and next steps

Learning Objectives:

• Articulate at least one (1) primary goal of infection control
Why do we do infection control?
INSIDE INFECTION CONTROL

WHAT'S THE GOAL OF INFECTION CONTROL?

EPISODE 1
Upcoming Session Topics

Coming up next

• The Basic Science of Viruses
• How Respiratory Droplets Spread COVID-19
• How Viruses Spread from Surfaces to People
• How COVID-19 Spreads: A Review

Broader Themes and Topics

• Infection Control: The Basics
• Source Control
• PPE: Basics
• PPE: Donning and Doffing
• Hand Hygiene
• Crisis Standards of Care
• Triage
• Standard and Transmission-Based Precautions
• Microbiology Basics
• Recognizing Risk
• Environmental Cleaning and Disinfection
Key Messages

• The goal of everything we do in infection control, for any disease, is to keep people from getting sick.

• The goal of Project Firstline is to make sure you have the infection control knowledge that you need and deserve to keep yourself, your patients, your colleagues, and your family safe.
Resources and Future Training Sessions

Project Firstline on CDC:
https://www.cdc.gov/infectioncontrol/projectfirstline/index.html

Project Firstline on Facebook:
https://www.facebook.com/CDCProjectFirstline/

Twitter:
https://twitter.com/CDC_Firstline

YouTube Playlist:
https://www.youtube.com/playlist?list=PLvrp9iOILTQZQGtDnSDGViKDdRtlc13VX

To sign up for Project Firstline e-mails, click here:
Topic 2: Basic Microbiology and Pathophysiology of COVID-19, Part 1

The Basic Science of Viruses

06/08/2021
Agenda:
• Introduction
• The Basic Science of Viruses
  • Video
  • Reflection
• Session feedback form and next steps

Learning Objectives:
• Differentiate one (1) core difference between SARS-CoV-2 and COVID-19.
• Identify, and explain to others, the three (3) main parts of a virus.
INSIDE INFECTION CONTROL


EPISODE 2
WHAT'S A VIRUS?
THE PARTS OF VIRUSES

- Fatty Envelope
- Capsid "Shell"
- Proteins Sticking Out of Fatty Envelope
- "Instruction Booklet" Genes
Reflection

Can you imagine a realistic, every-day occasion when you could(151,500),(842,556) practice using this job aid or explain this concept to others?
Key Messages

• SARS-CoV-2 is the official, scientific name of the virus, the germ that causes the disease COVID-19

• COVID-19 is the name of the disease – the fever, cough, chills and other symptoms that people have when they are infected with the virus SARS-CoV-2.

• All viruses have two parts:
  • Genes that contain all the information needed to make more virus copies
  • Proteins that protect the genes and help the virus spread

• Some viruses – SARS-CoV-2 is one of them – also have a third part: an envelope made of special fats that protects the genes and proteins
Resources and Future Training sessions

Project Firstline on CDC:
https://www.cdc.gov/infectioncontrol/projectfirstline/index.html

Project Firstline on Facebook:
https://www.facebook.com/CDCProjectFirstline/

Twitter:
https://twitter.com/CDC_Firstline

Youtube:
https://www.youtube.com/playlist?list=PLvrp9iOILTQZQGtDnSDGViKDdRt1c13VX

To sign up for Project Firstline e-mails, click here:
Feedback form
Next Steps

• Next Call
  – August 10 2pm Eastern/1pm Central Time
  – Topic: Continuation of Project Firstline, etc.
  – Topic: Prior Authorization Adoption
    • Seeking Volunteers to discuss their experience

• Feedback always appreciated
  – Christopher.evans@tn.gov