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Celebrate Antibiotic Awareness Week: Understand Your AUR Data

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Celebrate Antibiotic Awareness Week: Understand Your AUR Data

November 14th, 2017

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Speakers

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Understand Your AUR Data: Using NHSN for Surveillance of Antimicrobial Use and Resistance

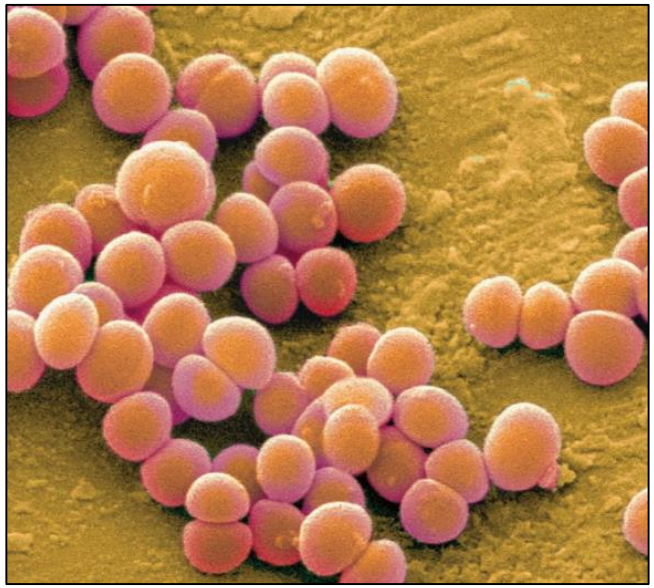
Daniel A. Pollock, M.D.
Surveillance Branch Chief
Division of Healthcare Quality Promotion

Premier Advisor Live®
November 14, 2017

Objectives

- Background and rationale for intensifying our AU and AR surveillance efforts
- Overview of the National Healthcare Safety Network (NHSN) AUR module
- How to participate in AU and AR surveillance using NHSN

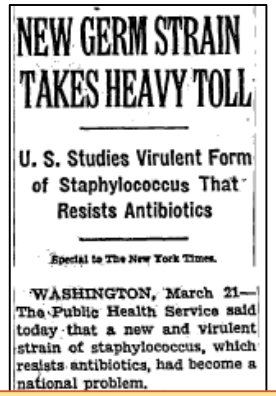
Surveillance Data Are Urgently Needed to Address the Twin Problems of Antimicrobial Overuse and Resistance



Scanning electron micrograph of Methicillin-resistant *Staphylococcus aureus* (MRSA).

- The closely linked hazards of antimicrobial overuse and resistance are at crisis levels and, unless abated, will increase the burden of infectious diseases across all age groups and patient populations
- Widespread concerns that we are moving rapidly to a post-antibiotic era are evidence-based and warrant more comprehensive and effective countermeasures
- Measuring and monitoring antimicrobial use and resistance (AUR) and extending and intensifying antimicrobial stewardship programs (ASPs) are priorities for CDC and key components of broad-based efforts to sustain the efficacy of antimicrobials

CDC and the First Wave of Antibiotic Resistance: Outbreaks of Resistant Staphylococcus, U.S. Hospitals, Mid-to-Late 1950s



NEW GERM STRAIN TAKES HEAVY TOLL

U. S. Studies Virulent Form of Staphylococcus That Resists Antibiotics

Special to The New York Times.

WASHINGTON, March 21—The Public Health Service said today that a new and virulent strain of staphylococcus, which resists antibiotics, had become a national problem.

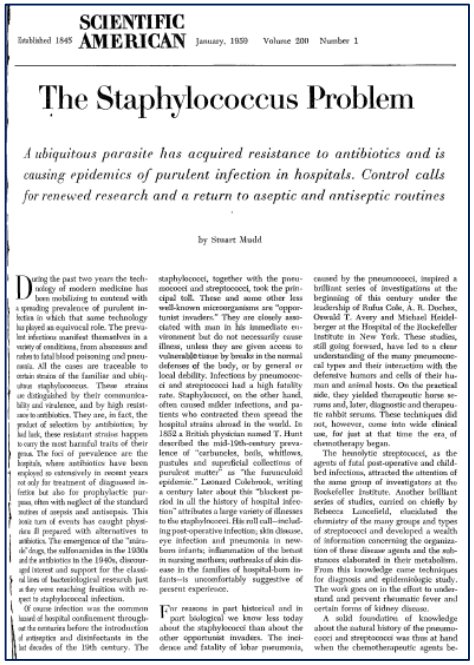
"Dr. Alexander Langmuir, chief of the epidemiological branch of the Atlanta center . . . said the center had made intensive investigations of at least a dozen of these outbreaks" *New York Times,* March 22, 1958

DEATH FROM THE HOSPITAL NURSERY

"A new, virulent organism, breeding in nurseries for the newborn, is rocking the medical world" *Ladies' Home Journal,* February 1959

History Repeats Itself: Calls for More Discriminating Use of Antibiotics and Closer Attention to Infection Prevention Began in the late 1950s

Stuart Mudd



SCIENTIFIC AMERICAN January, 1959 Volume 200 Number 1

The Staphylococcus Problem

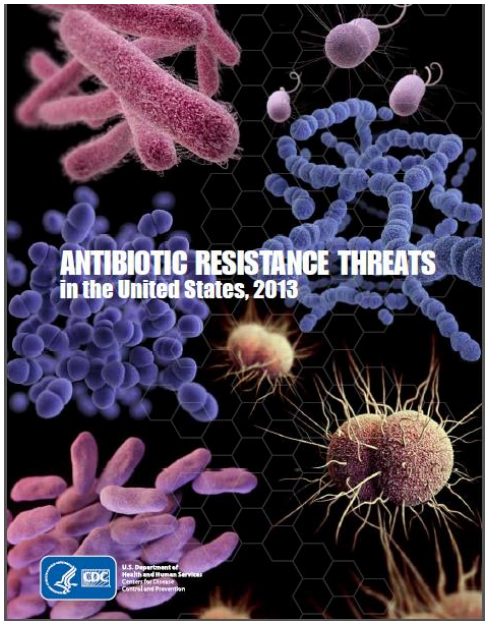
A ubiquitous parasite has acquired resistance to antibiotics and is causing epidemics of purulent infection in hospitals. Control calls for renewed research and a return to aseptic and antiseptic routines

by Stuart Mudd

"hospitals should use antibiotics with greater discrimination, especially when considered for prophylactic purposes, and return to the techniques of strict asepsis and vigorous antisepsis. These techniques are designed to minimize a patient's exposure to all microorganisms."

Scientific American 1959;200: 41-45

CDC's Antimicrobial Resistance Threat Report: Scope of the Problem and Actions Needed



Annual U.S. morbidity and mortality:

- **2,049,442 illnesses**
- **23,000 deaths**

} **Estimates of minimums caused by resistant bacteria and fungi**

Four core actions:

- **Prevent infections and spread of resistance**
- **Track resistance patterns**
- **Improve antibiotic use**
- **Develop new antibiotics and new tests of resistance**

https://ww.cdc.gov/drugresistance/threat-report-2013

Applying the Agent-Host-Environment Causal Model to Resistant Infections in Human Healthcare

	Infectious Agent	Human Host	Healthcare Environment
Pre-Event	Antibiotic resistance emerges in infectious pathogen	Infection risk increased due to immunodeficiency, invasive medical or surgical procedure, or other host factors	Antibiotic overuse can spur resistance, and gaps in infection prevention can pose risks for pathogen transmission
Infection Event	Pathogen adheres to host, penetrates anatomic barriers, and overwhelms host defenses	Host develops site-specific and/or systemic signs of infectious disease	Care team responses can include timely diagnostic, treatment, and infection control measures
Post-Event	Opportunities for further transmission and propagation of antibiotic resistance	Infection-associated morbidity, disability, or mortality, or disease resolution without long term adverse effects	Follow up can include strengthening antimicrobial stewardship and infection prevention

Responding to Antimicrobial Resistance Threats in Human Healthcare: Surveillance Data for Analysis and Action

Pathogens
- Early detection of new antimicrobial resistance
- Monitoring the burden and spread of resistance
- Microbiologic characterization of resistant pathogens

Infections
- Identifying and tracking at risk populations
- Measuring infection frequency, distribution, and outcomes

Infection prevention practices
- Tracking adherence to prevention guidelines

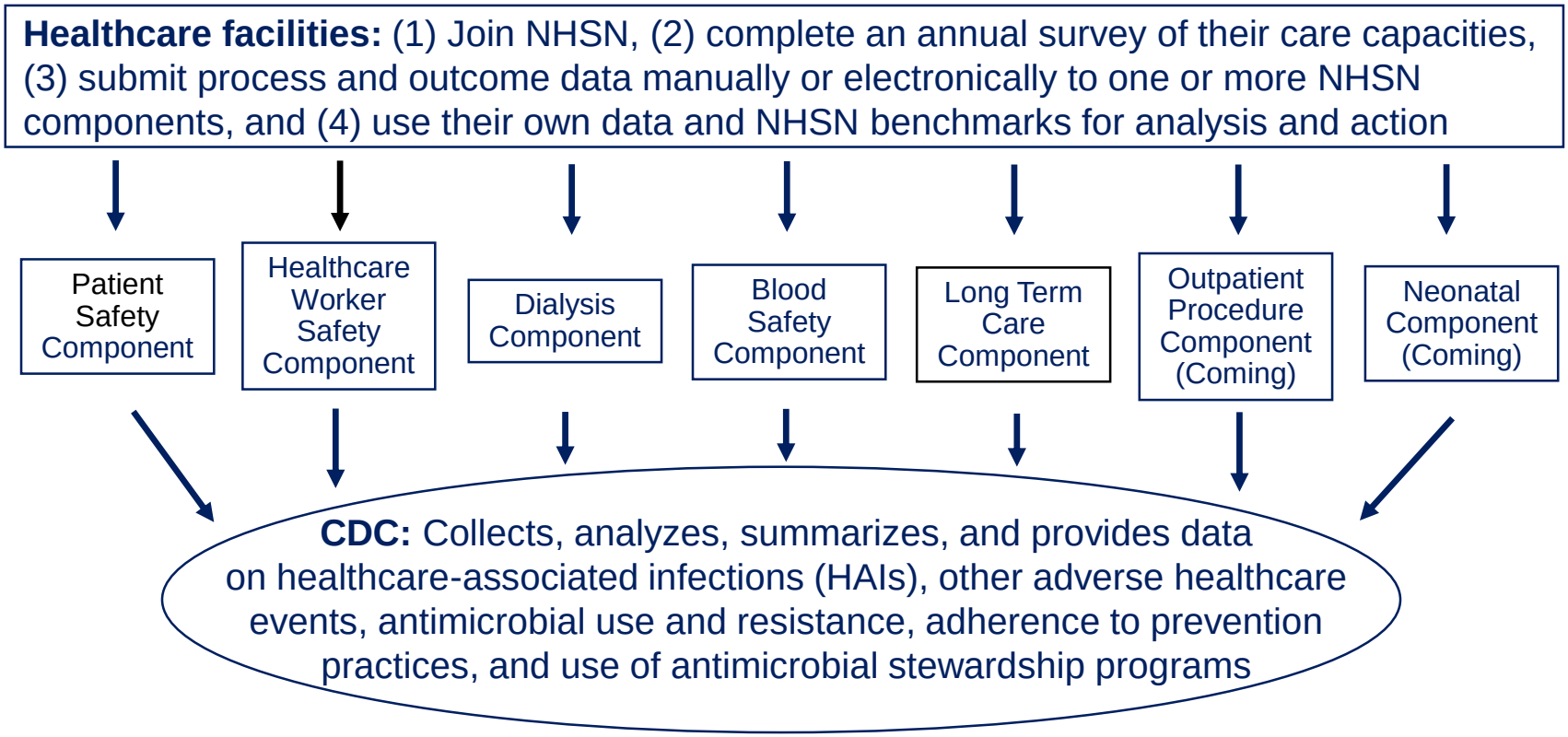
Antimicrobial Use and Antimicrobial Stewardship
- Monitoring antimicrobial use and detecting overuse
- Tracking stewardship practices

Infectious Agents

Human Hosts

Healthcare Environments

CDC's National Healthcare Safety Network (NHSN) – Healthcare Facilities Report Data On Their Care Capacities, Processes, and Outcomes to CDC



AU Surveillance Using NHSN: An Electronic Data Supply Chain

eMAR/BCMA Systems

Hospital ADT System

Extract, transform and load AU data by means of a vendor or homegrown IT solution

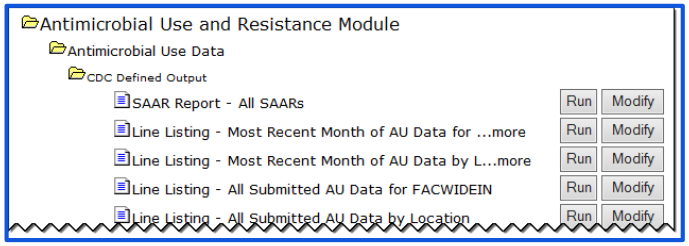
Numerator: Antimicrobial days aggregated monthly by drug and patient care location

Denominator: Days present and admissions per month

AU report in standard electronic message

NHSN Servers

Local AU data access via NHSN's web interface



Analysis, visualization, and reporting AU data

Requirements for Participation in the AU Option

Hospitals* that use an electronic medication recordkeeping system at the patient's bedside:

- Electronic Medication Administration Record (eMAR), or
- Bar Coding Medication Administration (BCMA) systems

AND

- Ability to aggregate AU and other data in accordance with the NHSN AU Option protocol and send the data to NHSN in the HL7 standard format: Clinical Document Architecture
  - Participating 3rd party vendors: http://www.sidp.org/aurvendors
  - "Homegrown" vendors (internal IT/Informatics resources)

*General acute care hospitals, long-term acute care hospitals (LTAC), inpatient rehabilitation facilities (IRF), oncology hospitals, critical access hospitals enrolled in NHSN

AU Option Data Elements – Numerator

- Numerator: Antimicrobial days (Days of Therapy) - sum of days for which *any* amount of specific agent was administered to a patient
  - 89 antimicrobials – includes antibacterial, antifungal, and anti-influenza agents
    - Sub-stratified by route of administration:
      - Intravenous (IV)
      - Intramuscular (IM)
      - Digestive (oral → rectal)
      - Respiratory (inhaled)
  - Only medication administration data (eMAR/BCMA)

AU Option Data Elements – Denominators

- Denominators:
  - Days Present - number of days in which a patient spent *any* time in specific unit or facility
    - Days present ≠ Patient days
    - Reported for all individual locations & FacWideIN
  - Admissions - number of patients admitted to an inpatient location in the facility
    - Reported for FacWideIN only
    - Same definition used throughout NHSN

AU Data That Hospitals Report to NHSN

- Monthly aggregate, summary-level data
  - By location
    - All inpatient locations individually
    - All inpatient locations combined (Facility-wide Inpatient - aka FacWideIN)
    - 3 outpatient locations (ED, pediatric ED, 24 hour observation)
    - Use same mapped locations throughout all of NHSN
  - Data are aggregated prior to sending to NHSN
  - No patient-level data shared with NHSN for AU Option
- **Important**: Requires accurate/complete electronic capture of both the numerator and denominator for the given location

AU Surveillance Using NHSN: Designed to Serve Clinical and Public Health Purposes

- Antimicrobial stewardship programs (ASPs) can use AU data in their efforts to optimize drug selection, dose, duration, and route of administration
- Crude AU rates are a valuable metric for some purposes, but AU summary measures that are adjusted for differences in patient and healthcare service characteristics are a methodologically sounder way to compare AU data within and across facilities
- CDC worked with ASPs in health systems, each of which was an early participant in NHSN AU reporting, to develop a set of adjusted AU summary measures for adult and pediatric patients
- CDC and VON are collaborating on development of a set of adjusted AU summary measures for neonatal patients

The Standardized Antimicrobial Administration Ratio (SAAR)

Measure development – CDC used AU data reported to NHSN and input from Antimicrobial Stewardship Programs (ASPs) to develop the SAAR, a risk-adjusted AU summary measure. The SAAR combines groups of individual antibiotics and specified patient care locations into broader categories for analytic purposes. The initial set of 16 SAARs enable benchmark comparisons for adult patient AU and pediatric patient AU. Neonatal/newborn SAARs are a work in progress.

O-to-E ratio - Each SAAR is an observed to predicted ratio for a combination of antibiotics and patient care locations. The observed number of antimicrobial days is the numerator. The predicted number of antimicrobial days is statistically estimated from nationally aggregated data using a negative binomial regression model that takes into account differences in patient mix and hospital characteristics.

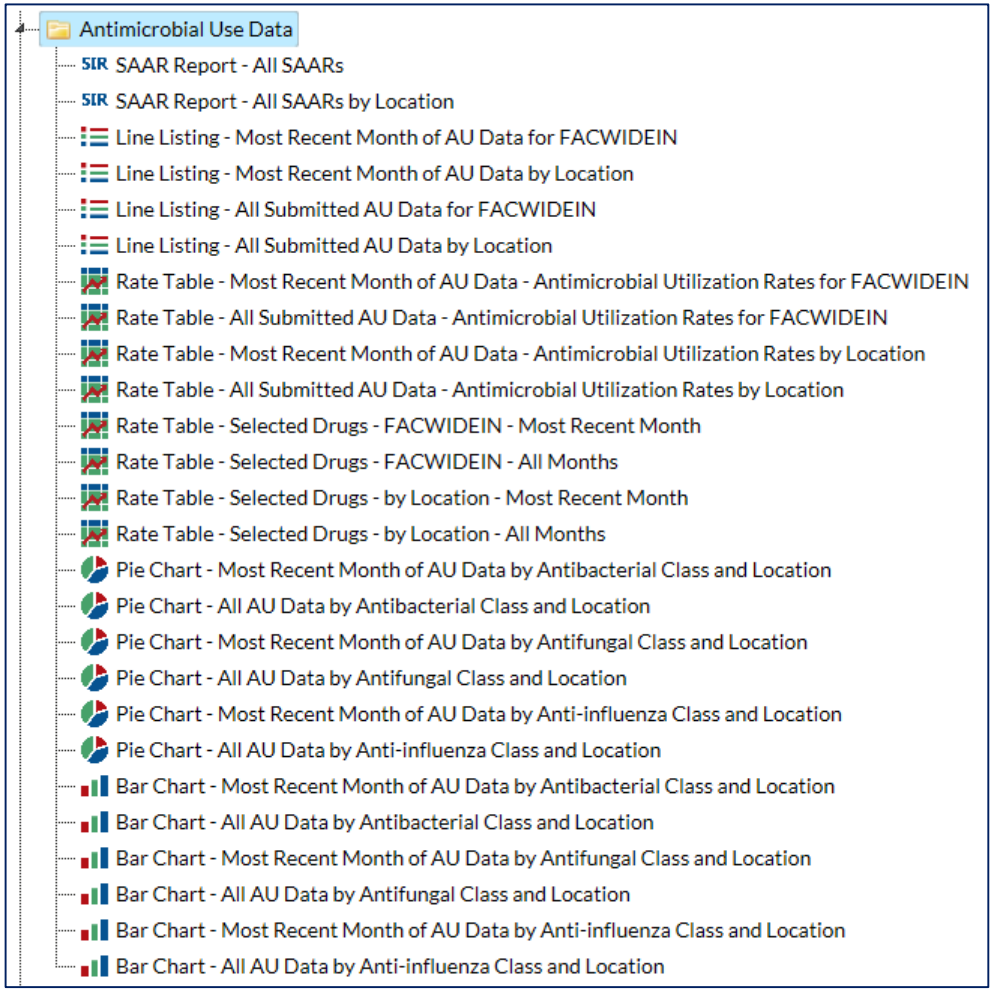
Interpretation - A high SAAR value (> 1.0) that achieves statistical significance (i.e., different from 1.0) indicates more AU than predicted and can serve as a signal that warrants further investigation. The SAAR is a starting point for evaluation and not a definitive measure of judiciousness or appropriateness of AU.

Status Report on the Availability of Neonatal AU Data Reported to NHSN for SAAR Development – October 2017

- **For adult and pediatric SAARs:** 2014 baseline year
  - 77 facilities reported all 12 months of data (383 locations)
    - 350 adult locations
    - 33 pediatric locations
- **For neonatal SAARs:** 2017 baseline year (proposed)
  - 58 facilities reporting for all 8 months in 2017 (78 locations)
    - 46 NICUs
    - 32 well-baby nurseries

AU Option – NHSN Analysis Reports

- Basic analysis reports available
  - SAARs
  - Line lists
  - Rate tables
  - Pie charts
  - Bar charts



NHSN AU Option – Line List

- Generates a list of each antimicrobial separated by location
  - 89 rows per location per month
- Shows total antimicrobial days, days present, admissions (FacWideIN only) and sub-stratification of routes of administration for each antimicrobial

National Healthcare Safety Network
Line Listing - Most Recent Month of AU Data by Location
As of: February 20, 2015 at 5:01 PM
Date Range: All SUMMARYAU1MONTH

Location=MICU

Facility Org ID	Summary Year/Month	Antimicrobial Agent Decription	Location	Days Present	Antimicrobial Days	Route: IM	Route: IV	Route: Digestive	Route: Respiratory
13860	2015M01	AMAN - Amantadine	MICU	421	0	0	0	0	0
13860	2015M01	AMK - Amikacin	MICU	421	2	0	2	0	1
13860	2015M01	AMOX - Amoxicillin	MICU	421	0	0	0	0	0
13860	2015M01	AMOXWC - Amoxicillin with Clavulanate	MICU	421	0	0	0	0	0
13860	2015M01	AMP - Ampicillin	MICU	421	4	0	4	0	0

*Data for example only

NHSN AU Option – Rate Table – Standard

- Rate of use per 1,000 days present or 100 admissions (FacWideIN only) for each antimicrobial category and class by location and time period
  - Month, quarter, half year, year, cumulative time periods

National Healthcare Safety Network
Rate Table - All Submitted AU Data - Antimicrobial Utilization Rates for FACWIDEIN
Rate per 1,000 Days Present
As of: April 12, 2017 at 3:51 PM
Date Range: AU_RATESFACWIDEIN summaryYM 2014M12 to 2014M12

Facility Org ID=13860

Summary Year/Month	Antimicrobial Category	Antimicrobial Class	Antimicrobial Days	Days Present	Rate per 1000 Days Present
2014M12	Antibacterial	-- All --	1637	2241	730.477
2014M12	Antibacterial	Aminoglycosides	11	2241	4.909
2014M12	Antibacterial	B-lactam/ B-lactamase inhibitor combination	311	2241	138.777
2014M12	Antibacterial	Carbapenems	120	2241	53.548
2014M12	Antibacterial	Cephalosporins	359	2241	160.196
2014M12	Antibacterial	Fluoroquinolones	224	2241	99.955
2014M12	Antibacterial	Folate pathway inhibitors	34	2241	15.172

Safety Network
mitted AU Data - Antimicrobial Utilization Rates for FACWIDEIN
sions
M
DEIN summaryYM 2014M12 to 2014M12

imicrobial ategory	Antimicrobial Class	Antimicrobial Days	Admissions	Rate per 100 Admissions
cterial	-- All --	1637	594	275.589
cterial	Aminoglycosides	11	594	1.852
cterial	B-lactam/ B-lactamase inhibitor combination	311	594	52.357
cterial	Carbapenems	120	594	20.202
cterial	Cephalosporins	359	594	60.438
2014M12	Antibacterial	Fluoroquinolones	224	594	37.71
2014M12	Antibacterial	Folate pathway inhibitors	34	594	5.724

*Data for example only

NHSN AU Option – Rate Table – Selected Antimicrobial(s)

National Healthcare Safety Network
Rate Table - Selected Drugs from All AU Data - Antimicrobial Utilization Rates by Location
Rate per 1,000 Days Present
As of: December 20, 2016 at 5:03 PM
Date Range: AU_DRUGRATESLOCATION summaryYM 2015M01 to 2015M03
if (((drugIngredientDesc = "LNZ")))

Facility Org ID=13860 CDC Location=IN:ACUTE:CC:MS_PED Location=PMSICU

Summary Year/Month	Antimicrobial Days	Days Present	Rate per 1000 Days Present
2015M01	4	526	7.60
2015M02	13	350	37.14
2015M03	10	264	37.88

National Healthcare Safety Network
Rate Table - Selected Drugs from All AU Data - Antimicrobial Utilization Rates by Location
Rate per 1,000 Days Present
As of: December 20, 2016 at 5:03 PM
Date Range: AU_DRUGRATESLOCATION summaryYM 2015M01 to 2015M03
if (((drugIngredientDesc = "LNZ")))

Facility Org ID=13860 CDC Location=IN:ACUTE:CC:M_PED Location=PMICU

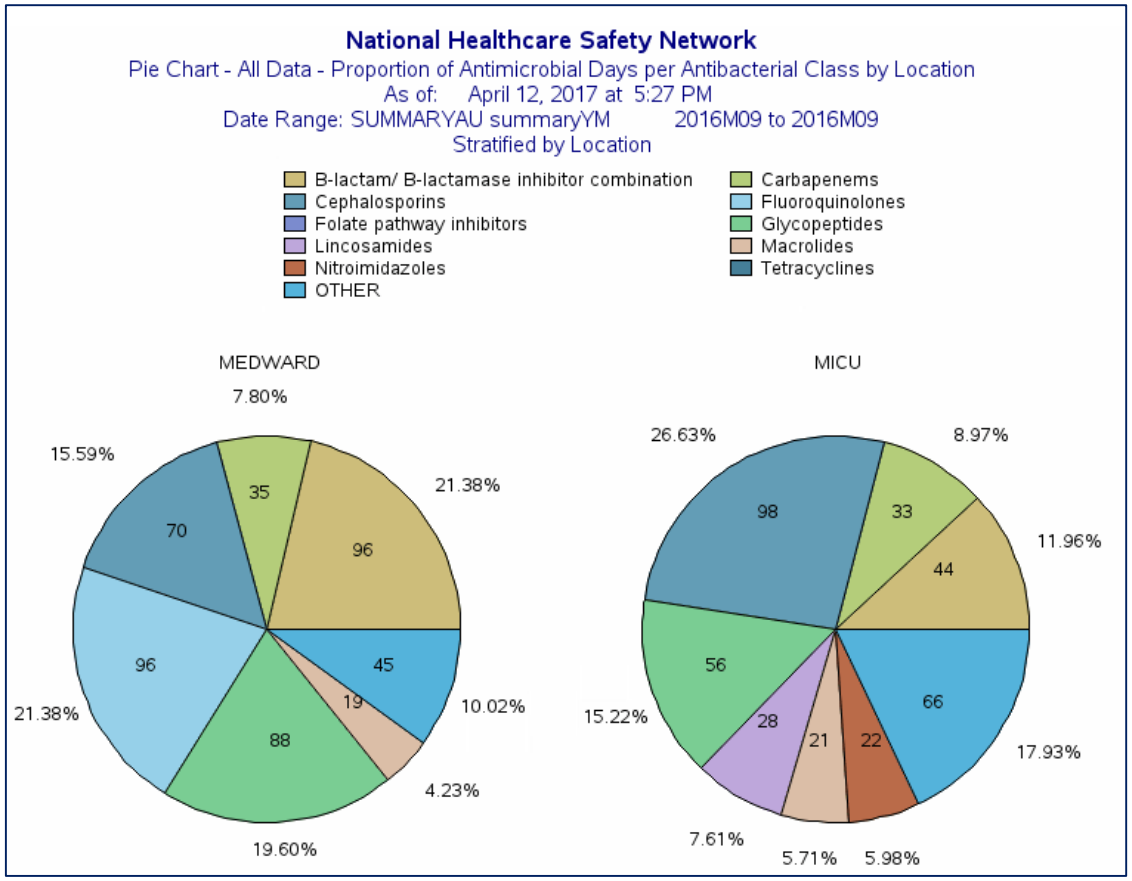
Summary Year/Month	Antimicrobial Days	Days Present	Rate per 1000 Days Present
2015M01	5	420	11.90
2015M02	4	411	9.73
2015M03	9	429	20.98

- Rates generated according to modifications/filters
  - Single antimicrobial
  - Multiple antimicrobials within the same class
  - Multiple antimicrobials from multiple classes

*Data for example only

NHSN AU Option – Pie Chart by Location

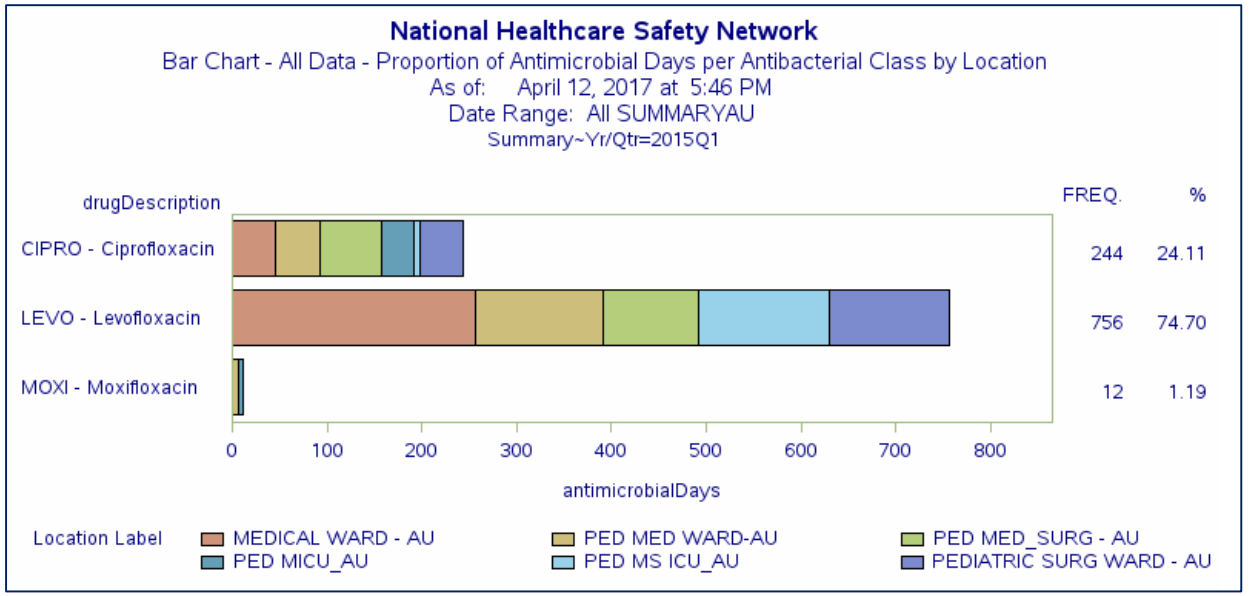
- Shows proportion of antimicrobial days per class
- Modified to show proportions by:
  - Category
  - Drug
  - Time period
  - Location



*Data for example only

NHSN AU Option – Bar Chart by Location

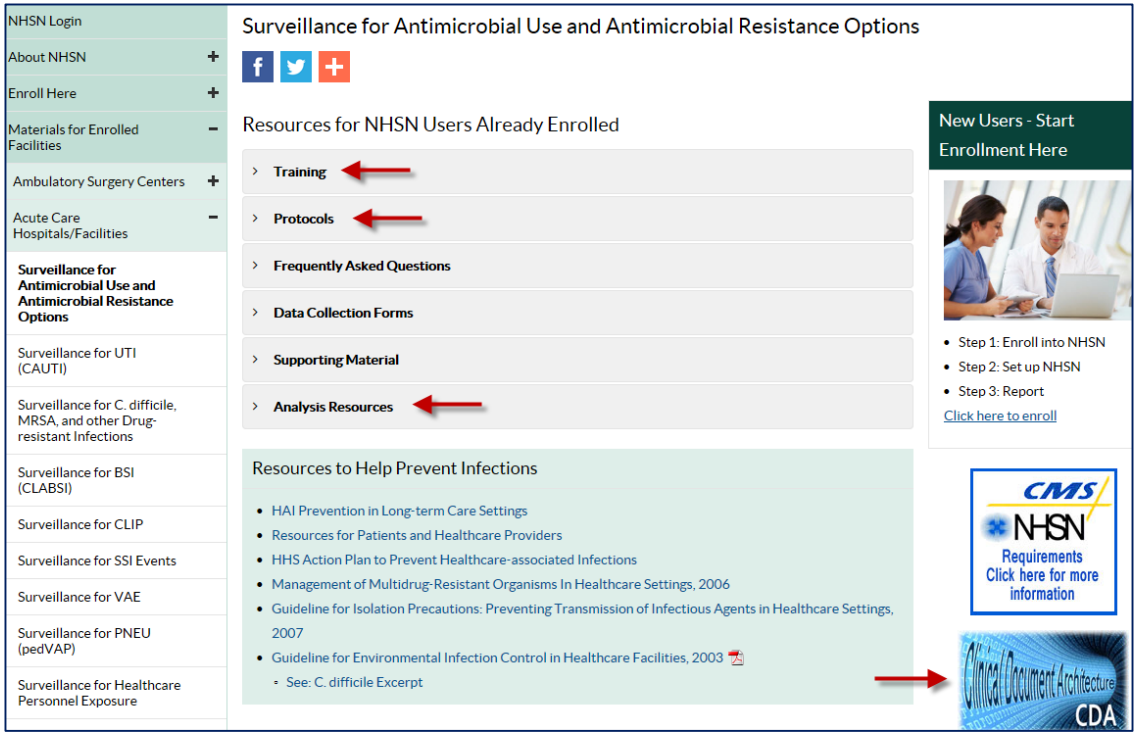
- Shows proportion of antimicrobial days per drug by location
- Modified to show proportions by:
  - Category
  - Class
  - Time period
  - Location



*Data for example only

NHSN AUR Module Resources

- NHSN AUR Module webpage: http://www.cdc.gov/nhsn/acute-care-hospital/aur/index.html



AR Surveillance Using NHSN: An Electronic Data Supply Chain

Laboratory Information System (LIS), Electronic Health Record System (EHRs), and Admission/ Discharge/Transfer (ADT) System

Extract, transform and load AR data by means of a vendor or homegrown IT solution

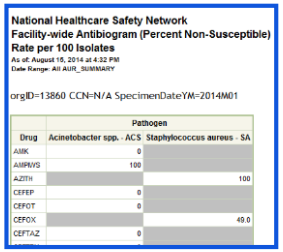
Numerator: Patient-specific, isolate-based reports

Denominator: Patient days and admissions

AR report in standard electronic message

NHSN Servers

Local AR data access via NHSN web interface for analysis, visualization and data sharing



National Healthcare Safety Network
Facility-wide Antibiogram (Percent Non-Susceptible)
Rate per 100 Isolates

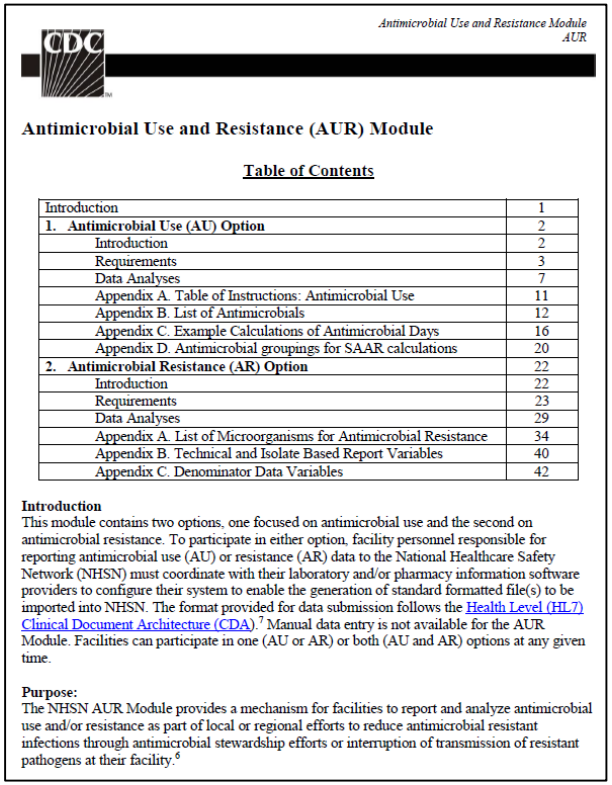
orgID=13860 CCN=N/A SpecimenDateYM=2014M01

	Pathogen	
Drug	Acinetobacter spp. - ACS	Staphylococcus aureus - SA
AMK	0	
AMPIVS	100	
AZITH		100
CEFEP	0	
CEFOT	0	
CEFOX		49.0
CEFTAZ	0	

Hospital-wide antibiogram and additional analytic outputs

NHSN's AR Surveillance – Basic Reporting Guidelines

NHSN Protocol



Antimicrobial Use and Resistance Module
AUR

CDC

Antimicrobial Use and Resistance (AUR) Module

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Introduction
This module contains two options, one focused on antimicrobial use and the second on antimicrobial resistance. To participate in either option, facility personnel responsible for reporting antimicrobial use (AU) or resistance (AR) data to the National Healthcare Safety Network (NHSN) must coordinate with their laboratory and/or pharmacy information software providers to configure their system to enable the generation of standard formatted file(s) to be imported into NHSN. The format provided for data submission follows the Health Level (HL7) Clinical Document Architecture (CDA).[7] Manual data entry is not available for the AUR Module. Facilities can participate in one (AU or AR) or both (AU and AR) options at any given time.

Purpose:
The NHSN AUR Module provides a mechanism for facilities to report and analyze antimicrobial use and/or resistance as part of local or regional efforts to reduce antimicrobial resistant infections through antimicrobial stewardship efforts or interruption of transmission of resistant pathogens at their facility.[6]

- Patient-specific, isolate-based reporting for 20 eligible microorganisms:
  - Report each eligible microorganism isolated from an invasive source (blood or cerebrospinal fluid) per patient, per 14 day period
  - Report the first eligible microorganism isolated from a non-invasive source (lower respiratory tract or urine) per patient per month
- All eligible isolates should be reported to NHSN regardless of the AR of the isolated microorganism
- File submissions:
  - One file for each isolate-based report
  - Monthly denominator file (daily count of patient days and monthly count of admissions)

https://www.cdc.gov/nhsn/pdfs/pscmanual/11pscaurcurrent.pdf

NHSN's AR Option – Eligible Microorgansims

All *Acinetobacter* species
Candida albicans
Candida auris
Candida glabarata
Citrobacter freundi
All *Enterobacter* species
Enterococcus faecalis
Enterococcus faecium
Enterococcus spp. (when not specified at the species level)
Eschericia coli
Group B *Streptococcus*
Klebsiella oxytoca
Klebsiella pneumoniae
Morganella morganii
Proteus mirabilis
Pseudomonas aeruginosa
Serratia marcescens
Staphylococcus aureus
Stenotrophomonas maltophilia
Streptococcus pneumoniae

NHSN's AR Option – Numerator and Denominator Data

Numerator: Patient characteristics and isolate-level antimicrobial susceptibility test results for specified microorganisms

- Patient date of birth, gender, date admitted to hospital, patient care location (e.g., medical ward, surgical ICU) during specimen collection
- Specimen collection date and specimen source (blood, cerebral spinal fluid, urine, lower respiratory tract)
- Antimicrobial susceptibility test results for each antimicrobial tested for each isolated microorganism and specimen type
  - E-test, MIC, disk diffusion (Kirby Bauer)
  - Final laboratory interpretation (Susceptible, Susceptible dose dependent, Intermediate, Resistant, Non-susceptible, Not tested)

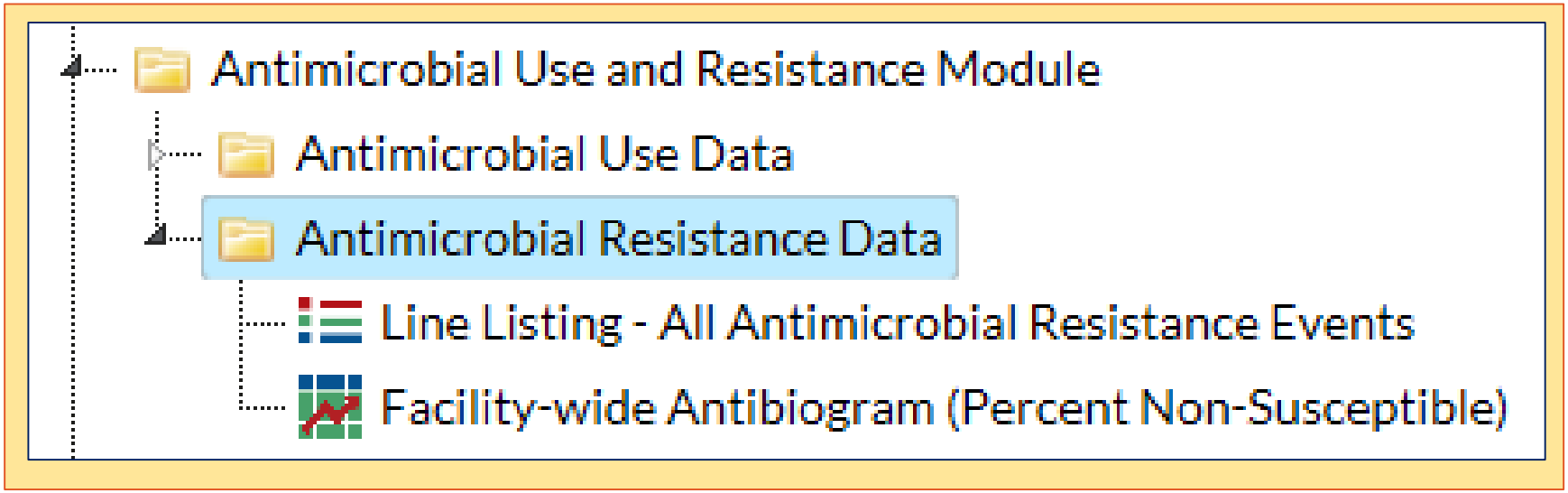
Denominator: daily count of patient days and monthly count of admissions (facility-wide only)

NHSN's AR Option - Microorganism and Antimicrobial Susceptibility Testing Combinations

- Susceptibility test results for selected antimicrobial agents are required in the AR numerator data reported for specified microorganisms and specimen types
- Full list of combinations can be found in the NHSN AUR Module Protocol

Organism	Specimen Type	Antimicrobial Agents
Acinetobacter (All *Acinetobacter* species noted in the IDM/Pathogen Codes tab listed in the ARO Pathogen column)	Blood, Urine, Lower Respiratory, CSF	Amikacin Ampicillin-sulbactam Cefepime Cefotaxime Ceftazidime Ceftriaxone Ciprofloxacin Doxycycline Gentamicin Imipenem with Cilastatin Levofloxacin Meropenem Minocycline Piperacillin Piperacillin-tazobactam Tetracycline Ticarcillin-clavulanate Tobramycin Trimethoprim-sulfamethoxazole
	Additional Agents for Urine	None

NHSN's AR Option – Analysis Output Options



NHSN's AR Option – Line Listing*

Line listings: AR events by pathogen and includes patient, specimen, microorganism, and antimicrobial susceptibility testing variables

National Healthcare Safety Network
Line Listing - Antimicrobial Resistance Events by Pathogen

Pathogen Description=Candida auris - CAAUR

Event ID	Patient ID	Location	Date Specimen Collected	Isolate ID	Specimen Group	Pathogen Description	Drug Description	Final interpretation Description
59582	123-45-6789	MICU	09/13/2016	123456-7	Blood	Candida auris - CAAUR	ANID - Anidulafungin	NS - Non-Susceptible
59582	123-45-6789	MICU	09/13/2016	123456-7	Blood	Candida auris - CAAUR	CASPO - Caspofungin	S - Susceptible
59582	123-45-6789	MICU	09/13/2016	123456-7	Blood	Candida auris - CAAUR	FLUCO - Fluconazole	S - Susceptible
59582	123-45-6789	MICU	09/13/2016	123456-7	Blood	Candida auris - CAAUR	FLUCY - Flucytosine	S - Susceptible
59582	123-45-6789	MICU	09/13/2016	123456-7	Blood	Candida auris - CAAUR	ITRA - Itraconazole	S - Susceptible
59582	123-45-6789	MICU	09/13/2016	123456-7	Blood	Candida auris - CAAUR	MICA - Micafungin	S - Susceptible
59582	123-45-6789	MICU	09/13/2016	123456-7	Blood	Candida auris - CAAUR	POSAC - Posaconazole	S - Susceptible
59582	123-45-6789	MICU	09/13/2016	123456-7	Blood	Candida auris - CAAUR	VORI - Voriconazole	N - Not Tested

*Data for example only

NHSN's AR Option – Hospital-wide Antibiogram*

- Shows microorganisms and their antimicrobial susceptibilities for a given month
- Lists all antimicrobials and the percent of isolates that were non-susceptible
- Percent non-susceptible only calculated when ≥ 30 isolates have been tested for a particular antimicrobial
- Cells shaded in grey represent non-valid pathogen/drug combinations
- Cells with "." represent microorganism-antimicrobial combinations for which there were less than 30 isolates tested.

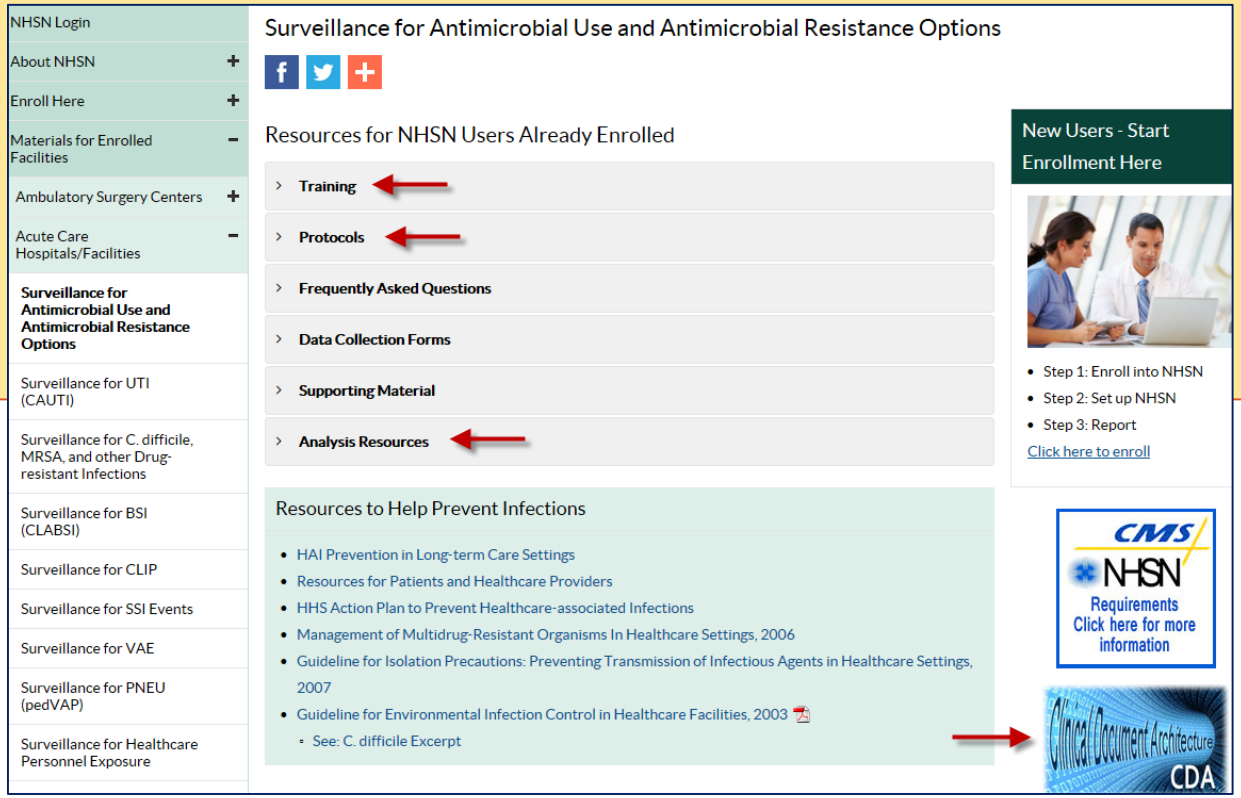
*Data for example only

Drug	Acinetobacter spp. - ACS	Staphylococcus aureus - SA
AMK	0	
AMPIWS	100	
AZITH		100
CEFEP	0	
CEFOT	0	
CEFOX		49.0
CEFTAZ	0	
CEFTRX	0	
CHLOR		0
CIPRO	33.0	0
CLARTH		0
CLIND		0
DAPTO		0
DOXY	33.0	0
ERYTH		0
GENTA	33.0	0
IMIPWC	33.0	
LEVO	33.0	0
LNZ		0
LOM		.
MERO	33.0	
MINO	33.0	0
MOXI		0

NHSN's AR Option Resources – http://www.cdc.gov/nhsn/acute-care-hospital/aur/index.html

AUR web page provides links to resources:

- Training
- Protocol
- Analysis
- CDA



Summing Up: NHSN AU and AR Data

- An increasing number of hospitals have reported to NHSN's AUR module, including from neonatal patient care locations
- While hospitals and health systems must overcome technical and resource challenges to report their AU and AR data, experience demonstrates that there are solutions to these challenges
- CDC seeks additional participation in the NHSN AUR module, with the intent of using AU and AR data and working with antimicrobial stewardship programs to foster more judicious prescribing and combat the mounting resistance problem

Thank You!

Please contact me at dap1@cdc.gov

For more information about NHSN:
http://www.cdc.gov/nhsn/

People. Trust. Experience.

MOUNTAIN STATES HEALTH ALLIANCE

Antibiotic Stewardship at Mountain States Health Alliance

November 14, 2017

Mountain States Health Alliance

- Not-for-profit 14 hospital system based in Johnson City, TN, serving Northeast TN, Southwest VA, Southeastern KY, and Western NC
- Approximately 8500 team members
- Tertiary hospital with a Level 1 Trauma Center
- Dedicated Children's Hospital
- Several Community Hospitals
- 2 Critical Access Hospitals
- 1 Behavioral Health Hospital

Infection Prevention

- Corporate Department and reporting structure
- Medical Director
- Corporate Director
- 18 Infection Preventionists

Where It All Began

- Dr. Marion Kainer presented to our Quality committee of the Board September 2015
- Leadership and development of ASP for Mountain States assigned to me
- Requested to have a regional symposium to bring awareness not only to our hospitals but within the entire region

Dinner Kick Off

- Developed a regional committee consisting of partners from Wellmont Health Systems and ETSU
- Hosted a Regional Kick-Off Dinner on November 9, 2015
- Invited all medical providers in Northeast TN and Southwest Virginia
- Introduction to Antibiotic Resistance and Antibiotic Stewardship
- Kick off to the Regional Symposium in January 2016

Regional Symposium January 2016

- All day regional symposium for medical providers throughout the region
- CME and CNE credit provided
- Keynote Speaker:
  CAPT Arjun Srinivasan, MD Associate Director for Healthcare Associated Infection Prevention Programs; Division of Healthcare Quality Promotion
- Other nationally recognized speakers including
  Dr. Ohl, Michael Klepser and Donald Klepser

People. Trust. Experience.

MOUNTAIN STATES HEALTH ALLIANCE

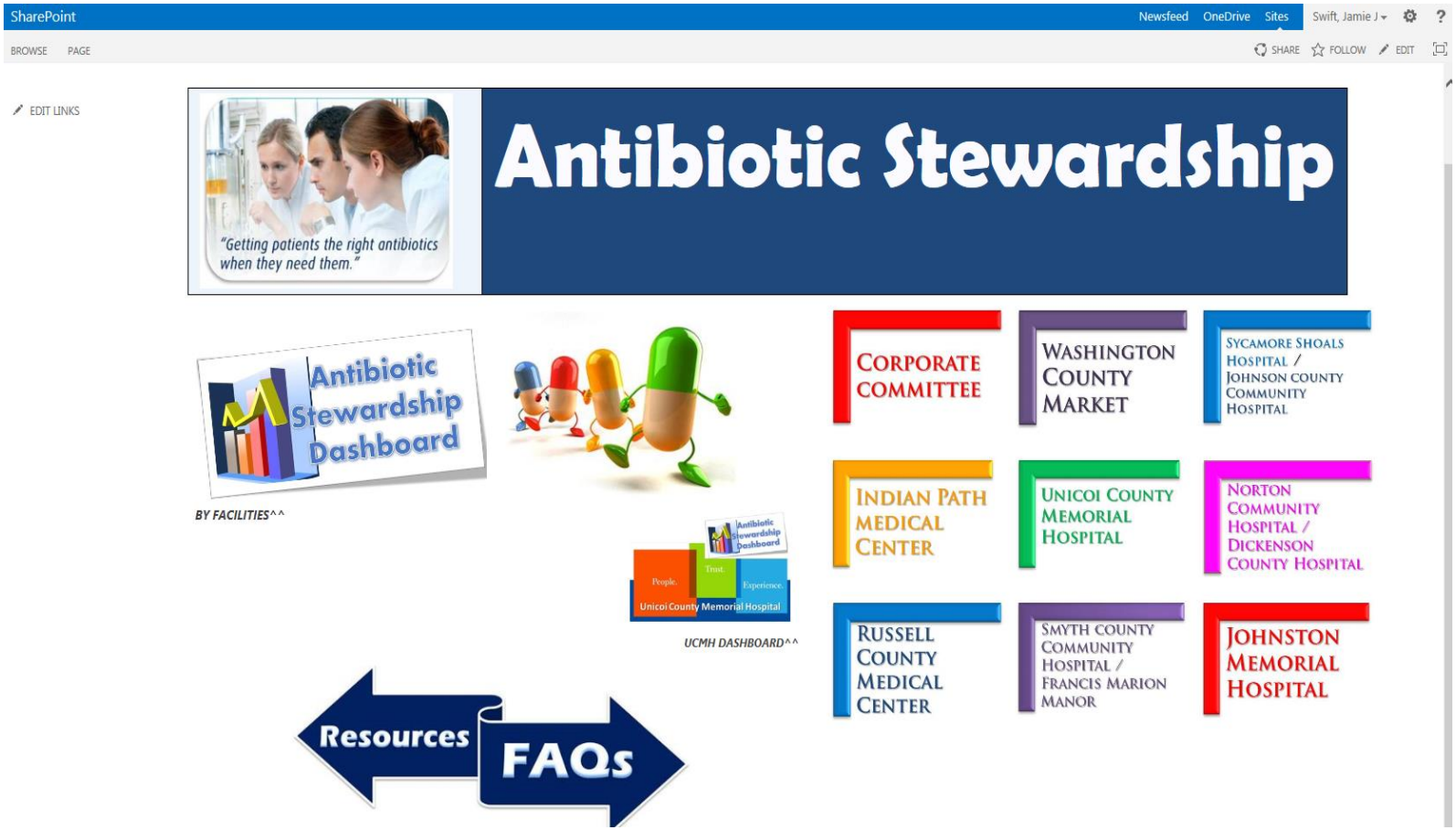
MSHA Structure and Impact

Implementation in our Health System

- Develop Antibiotic Stewardship Committees
- Corporate Committee
- Each facility or market must develop an antibiotic stewardship committee
- Facility committees will report up through the Corporate committee as well as MECs
- Corporate committee reports to MSHA Quality Committee of the Board

Corporate Committee Members

- Corporate committee chaired by Infection Prevention Director
- Co-Chair is the Corporate Pharmacy Director
- Members include
  - Pharmacy
  - Infectious Disease Physicians
  - CMOs
  - CNO
  - Lab
  - Marketing
  - Information Systems
  - Quality


SharePoint
Newsfeed
OneDrive
Sites
Swift, Jamie J
BROWSE
PAGE
SHARE
FOLLOW
EDIT
EDIT LINKS
"Getting patients the right antibiotics when they need them."
Antibiotic Stewardship
Antibiotic Stewardship Dashboard
BY FACILITIES^^
People.
Trust.
Experience.
Unicoi County Memorial Hospital
UCMH DASHBOARD^^
CORPORATE COMMITTEE
WASHINGTON COUNTY MARKET
SYCAMORE SHOALS HOSPITAL / JOHNSON COUNTY COMMUNITY HOSPITAL
INDIAN PATH MEDICAL CENTER
UNICOI COUNTY MEMORIAL HOSPITAL
NORTON COMMUNITY HOSPITAL / DICKENSON COUNTY HOSPITAL
RUSSELL COUNTY MEDICAL CENTER
SMYTH COUNTY COMMUNITY HOSPITAL / FRANCIS MARION MANOR
JOHNSTON MEMORIAL HOSPITAL
Resources
FAQs

AUR REPORTING

TheraDoc® AUR Reporting

- Laying the ground work since day 1
- Made it a priority and an expectation for our senior leaders even though it would be voluntary
- Standardized data as a selling point
- Partnered with TheraDoc almost as soon as it became available
- Launched system-wide

AUR Reporting

- All Infection Preventionists currently use TheraDoc as well as report to NHSN
- Pharmacists across the system using TheraDoc but no access to NHSN
- Time of getting pharmacists SAMs access and training for NHSN seemed like an unnecessary barrier

Mountain States Reporting

- Infection Prevention and Pharmacy pulled over the NHSN AUR Panel inside of TheraDoc
- Corporate Pharmacy Clinical Coordinator reviews the reports from TheraDoc each month
- Once reports are reviewed and accurate, notifies Infection Preventionist
- IP completes the AUR upload from TheraDoc into NHSN

Reporting

- First submission was through CDA export; Lots of errors
- TheraDoc upgrade; now submissions are automatic from our TheraDoc session
- No errors on submissions for July-October

Analyzing the Data

- Just now starting to dig into the reports
- Quick glance, no surprises
- High SAARs across the board, some higher than 2.0 in certain units
- Biggest challenge: Capturing this data and distributing to the masses in a meaningful way

Questions:

Jamie Swift, RN, CIC, FAPIC

Jamie.swift@msha.com

423-302-3303

Submitting AU to NHSN: Palmetto Health

Joseph Kohn, Pharm.D., BCPS
Antimicrobial Stewardship and Support Coordinator, Palmetto Health
Columbia, South Carolina

Palmetto Health Richland

- Columbia, South Carolina
- 655-bed, multi-disciplinary, teaching hospital
- Pediatric Hospital
- Level 1 Trauma Center
- Level 3 NICU
- 100,000 ED visits per year

Palmetto Health Antimicrobial Stewardship and Support Team (PHASST)

PALMETTO HEALTH

- Palmetto Health Richland 2013
- MD and 6 Pharmacists
- TheraDoc® since 2015
- Rapid diagnostics:
  - Maldi-TOF
  - Biofire Filmarray Blood Culture ID ®
  - Real time reporting to (PHASST)
- Antibiotic Utilization
  - DOTs/1000 patient days
  - DOTs/1000 days present
  - Standardized Antibiotic Administration Ratio (SAAR)

Submitting AU to NHSN

PALMETTO HEALTH

- Submitted in September (June – Sept.)
- Meaningful Use 3
- TJC Survey
  - Information provided to hospital leadership
  - Easily defined target
- Validate PHASST initiatives
  - *S.aureus*/GNR bacteremia
  - Carbapenems/daptomycin/pip-tazo, cefepime alerting
- Identified opportunities
  - SAAR by location
  - Decreased de-escalation in an ICU
    - Intensify stewardship efforts

AU Submission Challenges

PALMETTO HEALTH

- Infection Preventionist
  - NHSN facility administrator
    - Pharm.D. access to NHSN- analyze and import/export
- TheraDoc Location Manager – location configuration
  - Facility OID (Object Identifier)
- Antibiotics without data
  - Reconcile each unit (not applicable vs. 0 admins)
  - Must know your antibiotic formulary

PHASST Future Plans

PALMETTO HEALTH

- Continue to submit AU data for Palmetto Health System
  - Cost metric
- Submit AR data
  - Suppressed sensitivities not available in TheraDoc
  - Working with Microbiology Informatics Team

Question & Answer Session

Want further information?

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Manager, Member Engagement
Clinical Surveillance Solutions
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daisy_jackson@premierinc.com

