Pennsylvania Department of Health

THE STEWARD

2024 QUARTER 4

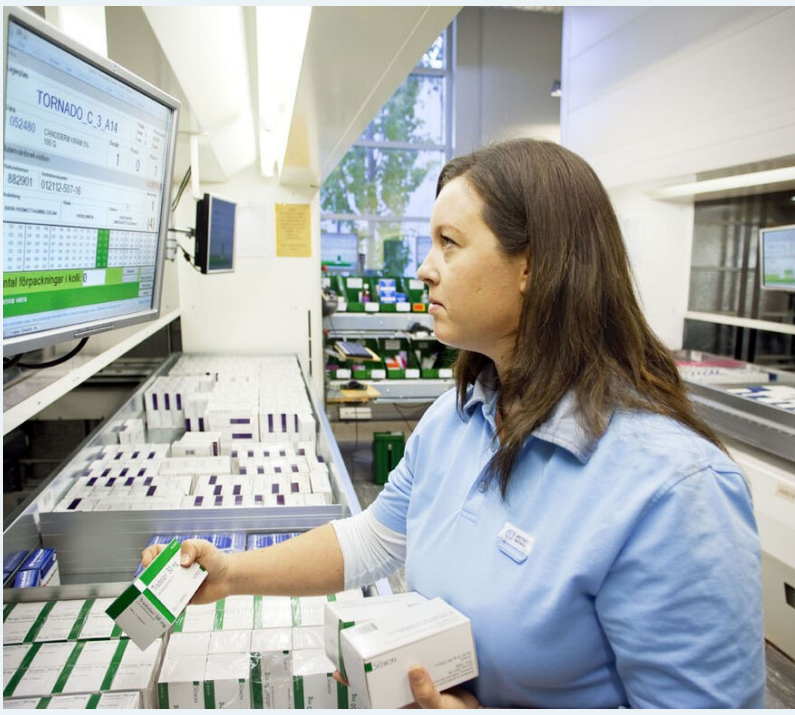
Quarterly Newsletter of the Division of Healthcare Associated Infection Prevention

Evaluating Antimicrobial Use in Hospitals, Pennsylvania 2022

By: Jordan Surgnier, MPH

The Centers for Disease Control and Prevention (CDC) aims to improve the use of antibiotics in hospitals by providing guidelines for antibiotic stewardship. The CDC's Core Elements of Hospital Antibiotic Stewardship Programs outline seven key strategies for improving antibiotic use: Leadership, Accountability, Pharmacy Expertise, Action, Tracking, Reporting, and Education.[1] Implementation of these elements are reported by hospitals annually to the National Healthcare Safety Network (NHSN).

(Read more on Page 2)



U.S. Antibiotic Awareness Week

This yearly event seeks to increase awareness of antimicrobial resistant threats and reinforce the importance of antibiotic stewardship. Support antibiotic stewardship year-round by participating in Be Antibiotics Aware, an educational program to promote appropriate antibiotic prescribing by CDC.

(Read more on Page 5)

Test Your Reprocessing Knowledge

Using the right method is key to removing germs, keeping you and your patients healthy. Test your knowledge of CDC's Disinfection and Sterilization Guideline for reprocessing some of the trickier tools. The guidelines posted are for equipment often used in healthcare settings such as hospitals, ambulatory care and home care.

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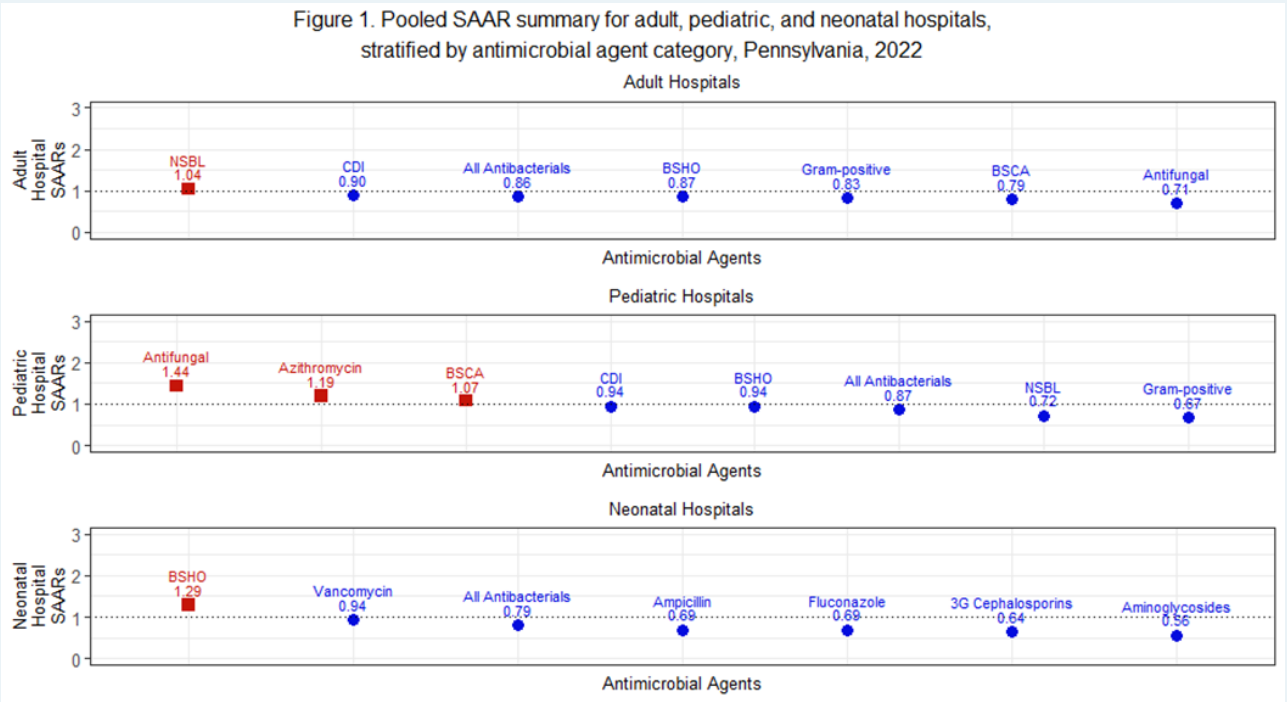
Out of the 218 hospitals contributing core element adherence data to NHSN in 2022, 208 (95.4 %) met all seven of the CDC's core elements for antimicrobial stewardship. Among the 10 hospitals not reporting adherence to all seven core elements, Accountability and Pharmacy Expertise were the most frequently missing elements. Each of these two core elements were missing from five hospitals (2.3%).

One of the ongoing goals of the Pennsylvania Department of Health antimicrobial stewardship program is to encourage appropriate antimicrobial prescribing habits in hospitals. These prescribing habits are assessed by analyzing inpatient antimicrobial use for each category of antimicrobial agents from all locations that report these data to NHSN. The list of reportable antimicrobial agents varies with each age group[2], which includes adult patients (18 years+), pediatric patients (31 days – 17 years) and neonatal patients (0 – 30 days).

The primary method for analyzing antimicrobial prescriptions in inpatient settings is through the Standardized Antimicrobial Administration Ratio (SAAR) value. The SAAR value is a ratio of the number of reported days of antimicrobial therapy to the number of predicted days of antimicrobial therapy for a given antimicrobial agent.[3] SAAR values over 1 indicate higher antimicrobial use than predicted. SAAR values below 1 indicate lower antimicrobial use than predicted. If a SAAR value = 1, then the amount of antimicrobial use predicted for that agent category was exactly as much as predicted. The SAAR value accounts for factors such as inpatient unit type, facility type, number of beds, and average length of stay when calculating predicted days of antimicrobial therapy.

As shown in Figure 1, adult hospitals (N = 47) reported more antimicrobial days of therapy than predicted for narrow spectrum beta-lactam (NSBL) agents only (SAAR = 1.04). Among pediatric hospitals (N = 9), antifungal agents (SAAR = 1.44), azithromycin (SAAR = 1.19), and broad spectrum antibacterial agents predominantly used for community-acquired infections (BSCA) (SAAR = 1.07) reported more days of therapy than predicted. In neonatal hospitals (N = 20), only broad spectrum antibacterial agents predominantly used for hospital-onset infections (BSHO) had more days of therapy than predicted (SAAR = 1.30). All other antimicrobial agents for all age groups had SAAR values below one, indicating lower use of those categories of agents than predicted.

Figure 1. Pooled SAAR summary for adult, pediatric, and neonatal hospitals, stratified by antimicrobial agent category, Pennsylvania, 2022



Antimicrobial Agent Categories[2]

All Antibacterial Agents: All antibacterial agents in the Antimicrobial Use and Resistance protocol except: Amikacin Liposome, Cefiderocol, Colistin, Delafloxacin, Eravacycline, Imipenem/Cilatatin/Relebactam, Lefamulin, Meropenem/Vaborbactam, Omadacycline, Piperacillin, Plazomicin, Sulbactam/Durlobactam, Ticarcillin/Clavulanate

BSCA: Broad spectrum antibacterial agents predominantly used for community-acquired infections

BSHO: Broad spectrum antibacterial agents predominantly used for hospital-onset infections

CDI: Antibacterial agents posing the highest risk for *Clostridioides difficile* infections

Gram-positive: Antibacterial agents predominantly used for resistant gram-positive infections

NSBL: Narrow spectrum beta-lactam agents

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Test Your Reprocessing Knowledge

Using the right method is key to removing contamination, keeping you and your patients healthy.

Match the instrument or piece of equipment on the left to the type of cleaning or disinfection by marking the letter A, B, C or D in the box.

1

Metal Speculum: ☐

2

Pulse Oximeter: ☐

A

Sharps Container

3

Surgical Scalpel Handle: ☐

4

Metal Dental Tools: ☐

B

Low-Level Disinfection

5

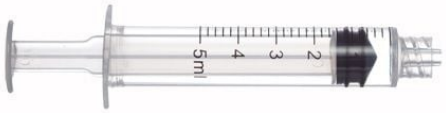
Endocavity Ultrasound Transducer: ☐

6

Endoscope: ☐

C

High-Level Disinfection

7 

Plastic Syringe: ☐

8

Stethoscope: ☐

D

Sterilization

...continued on Page 4

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Test Your Reprocessing Knowledge Answer Page

(continued from page 3)

1

Answer D: Metal specula should be cleaned and **sterilized** after every use. Some providers may opt to use plastic disposable specula. **Disposable specula should not be reprocessed.**

2

Answer B: Pulse oximeters require **low-level disinfection** after each use. This equipment touches patients' hands which may be contaminated. **Low-level disinfection** removes most bacteria and viruses on potentially contaminated surfaces through the use of disinfectants.

3

Answer D: After placing the scalpel blade in the closest sharps container, **the metal surgical scalpel handle requires cleaning and sterilization.** Placing the blade in the sharps container helps protect you and other healthcare workers from a potential sharps injury.

4

Answer D: Sterilization is required for **metal dental tools** after each use. Sterile instruments that have been opened for a procedure **must be leaned and re-sterilized**, even if they were not used because the sterile status was compromised.

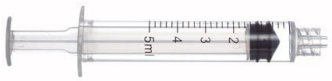
5

Answer C: High-level disinfection is required after each use of an **endocavity ultrasound transducer.** Ultrasound transducers that contact blood, non-intact skin, or mucous membranes require a minimum of high-level disinfection after use. Follow manufacturer's instructions for use.

6

Answer C: A minimum of **high-level disinfection** is required for **endoscopes** in between use. **Endoscopes** are complex pieces of medical equipment. Follow manufacturer's instructions for use.

7



Answer A: Plastic syringes are not reusable. They should be disposed of in the sharps container, or according to facility policy, and cannot be reprocessed. If this symbol is on equipment, it is single use and cannot be reprocessed.

8

Answer B: Stethoscopes require a minimum of **low-level disinfection** between use. Patients on any type of transmission-based precautions should have their own dedicated stethoscope.

For more information on cleaning, disinfection and sterilization healthcare guidelines scan the code or visit: www.cdc.gov/infection-control/hcp/disinfection-sterilization/healthcare-equipment.html.

These guidelines are for instruments used by healthcare personnel in healthcare settings such as hospitals, outpatient clinics, and home care.

News You Can Use

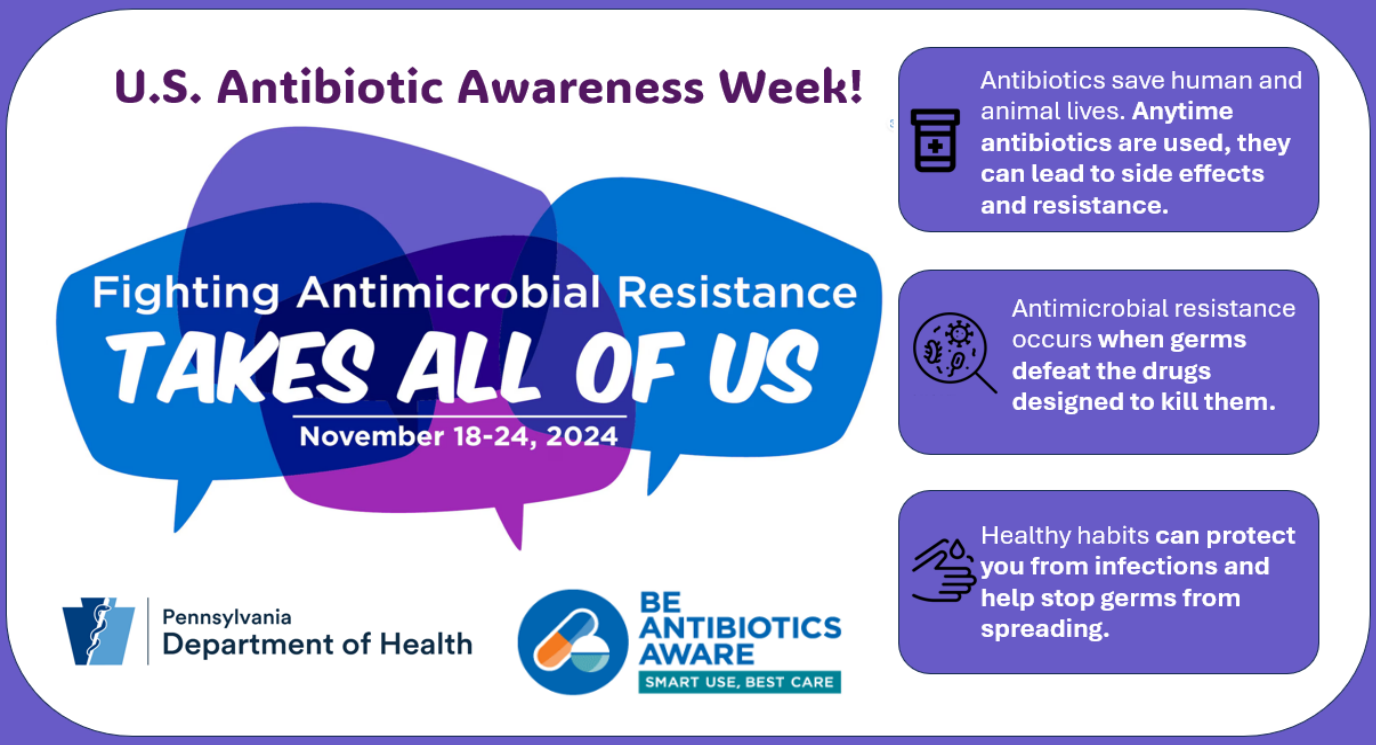
The American Society for Health Care Engineering (ASHE) updated its Infection Control Risk Assessment (ICRA) in 2022. The ICRA template PDF is free to download and contains editable fields for easy use when assessing and preparing risk mitigation strategies for construction or renovation projects in healthcare settings. The Infection Control Plan Review Team shares this information with facility IPs in need. ICRA 2.0 Template and ASHE ICRA 2.0 Toolkit

Training Opportunities

- The Pennsylvania Department of Health and Philadelphia Department of Public Health, in collaboration with the Center for Forensic Science Research & Education, are providing training for clinicians on the best practices for caring for individuals with xylazine-associated wounds. Caring for People with Xylazine-Associated Wounds: Training for Clinicians
- PA Project Firstline recently updated their resource list to align with CDC website changes. The updated resource is included here: PA Project Firstline Training and Resources Compilation
- CDC Blog entitled, Dentists: Improve patient safety by optimizing antibiotic prescribing

National Health Observances

- **November 18-24** U.S. Antibiotic Awareness Week
- **November 18-24** World AMR Awareness Week
- **December** International Sharps Injury Prevention Month



This year, the U.S. Centers for Disease Control and Prevention (CDC) incorporates a One Health approach for their theme "Fighting Antimicrobial Resistance Takes All of Us."

You can participate in U.S. Antibiotic Awareness Week by:

- Wearing purple and turning social media purple by sharing pictures and tagging #AntimicrobialResistance and #USAAW24!
- You are also encouraged to share antibiotic stewardship messages on social media, display educational posters within your facility, and distribute antimicrobial stewardship handouts to patients and healthcare providers.

Resources have been developed by the CDC and are available in the **USAAW toolkit.**

Quarterly Data Update

Antimicrobial Resistant Organisms

Carbapenemase	Quarter 2 - 2024 (04/01/2024 – 06/30/2024)				
	CRE	CRAB	CRPA	No Organism*	Total by Mechanism
KPC	9	0	0	0	9
NDM	3	0	0	0	3
IMP	0	0	0	0	0
OXA-like	2	8		8	18
VIM	0	0	0	0	0
Carbapenemase detected by phenotype, no genotype detected	1	0	0	0	1
Total by Organism	13	8	0	8	29†

	Clinical	Colonized	Total
Candida auris	9	23	32

***Organisms not tested for during point prevalence survey screening**

† Two cases had two carbapenemase genes

Abbreviations:
CRE=Carbapenem-resistant Enterobacterales
CRAB=Carbapenem-resistant *Acinetobacter baumannii*
CRPA=Carbapenem-resistant *Pseudomonas aeruginosa.*
Learn more about carbapenemases and CRE at:
CDC CRE Technical Information

*Data include all counties in PA except for Philadelphia. The counts were captured through voluntary reporting by health care facilities and laboratories, including the PA Bureau of Laboratories. Philadelphia's surveillance data is available at https://hip.phila.gov/data-reports-statistics/healthcare-associated-infections.

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