Center for Stewardship Medicine

Antimicrobial Stewardship:

Infection Prevention and Control Project Management

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Disclosures

Today's speaker has no financial relationships with an ineligible company relevant to this presentation to disclose.

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Objectives

- Define infection prevention (IP) and antimicrobial stewardship (AMS)
- Describe the intersection between IP and AMS
- Discuss real world examples of AMS in the IP setting
- Learn to use project management to accelerate IP/AMS projects and utilize as a guide to project completion

IP and AMS

- Infection prevention and control: A practical, evidence-based approach preventing patients and health workers from being harmed by avoidable infections[1]

- Antibiotic stewardship: The effort to measure and improve how antibiotics are prescribed by clinicians and used by patients[2]

[1]World Health Organization (WHO). (n.d.). *Infection prevention and control global*. World Health Organization. https://www.who.int/health-topics/infection-prevention-and-control#tab=tab_1

[2] Centers for Disease Control and Prevention (CDC). (n.d.). *Core elements of antibiotic stewardship*. Centers for Disease Control and Prevention. https://www.cdc.gov/antibiotic-use/hcp/core-elements/index.html

Infection Preventionist (IP) Roles

C. Billings et al. / American Journal of Infection Control 47 (2019) 602–614

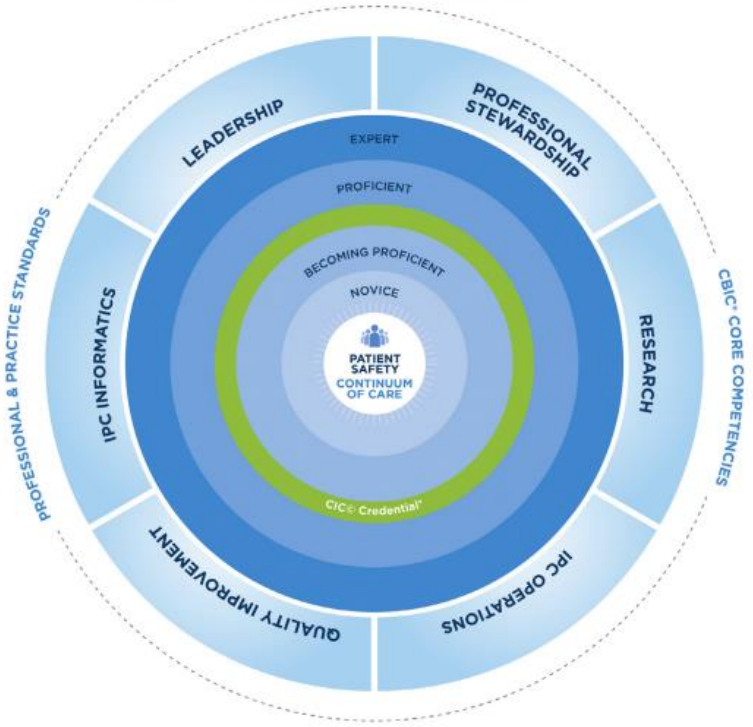


Fig 1. The updated (2019) APIC Competency Model.

Table 2
Updated APIC Competency Model (2019) future-oriented competency domains and subdomains

Leadership	Professional stewardship	Quality improvement	IPC operations	IPC informatics	Research
Communication	Accountability	Infection preventionist as subject matter expert	Epidemiology and surveillance*	Surveillance technology*	Evaluation of research
Critical thinking*	Ethics	Performance improvement*	Education*	Electronic medical records and electronic data warehouse*	Comparative effectiveness research
Collaboration	Financial acumen	Patient safety	IPC rounding	Data management, analysis, and visualization	Implementation and dissemination science
Behavioral science	Population health	Data utilization	Cleaning, disinfection, sterilization	Application of diagnostic testing data and techniques	Conduct or participate in research or evidence-based practice
Program management*	Continuum of care	Risk assessment and risk reduction	Outbreak detection and management		
Mentorship	Advocacy		Emerging technologies		
			Antimicrobial stewardship*		
			Diagnostic stewardship		

IPC, infection prevention and control.
*Future-oriented and updated definition of a subdomain that was also in the 2012 competency model.

Images from https://apic.org/wp-content/uploads/2019/05/June-2019-AJIC-Article-APIC-Competency-Model.pdf

Breaking the Chain of Infection

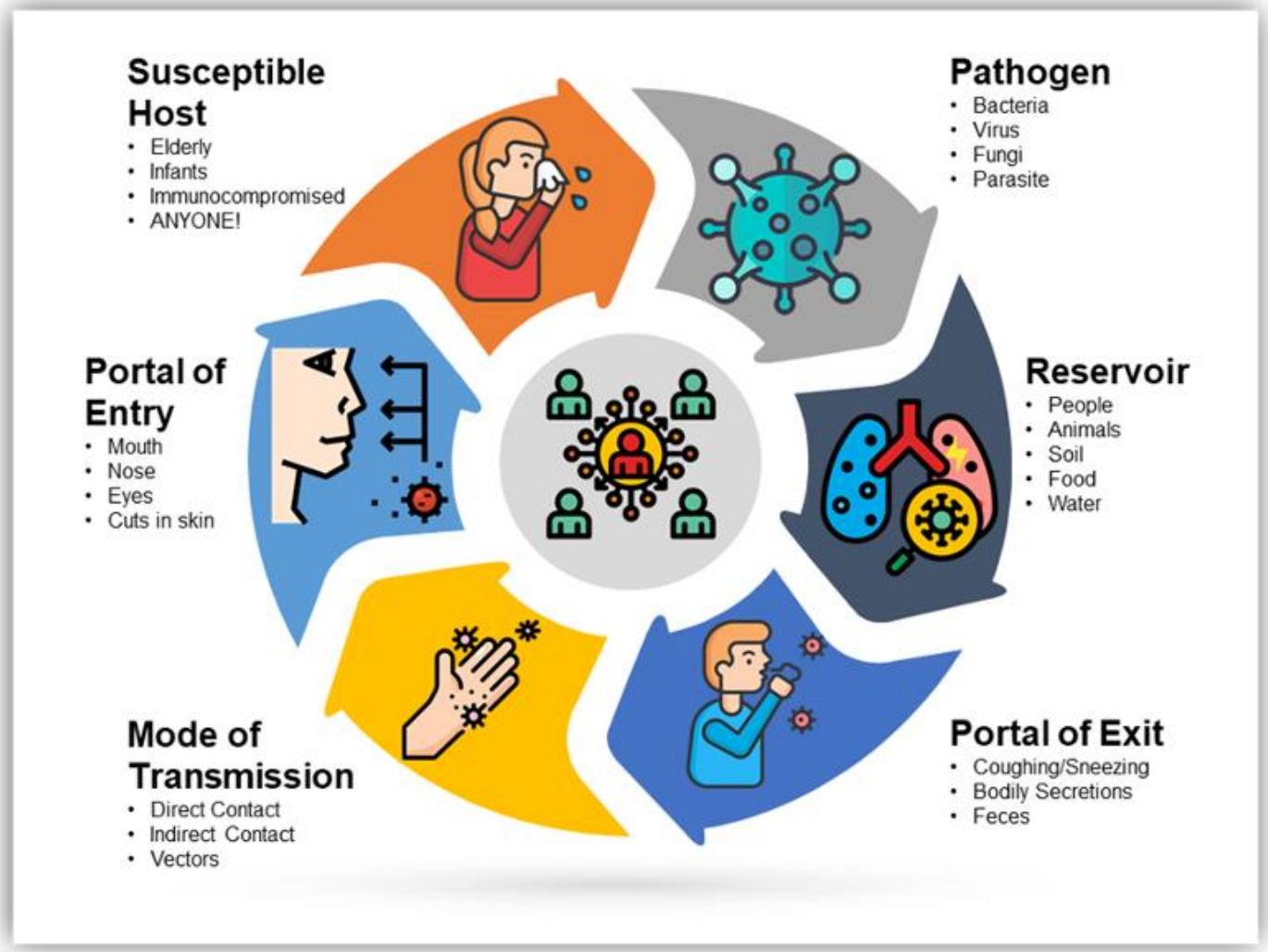
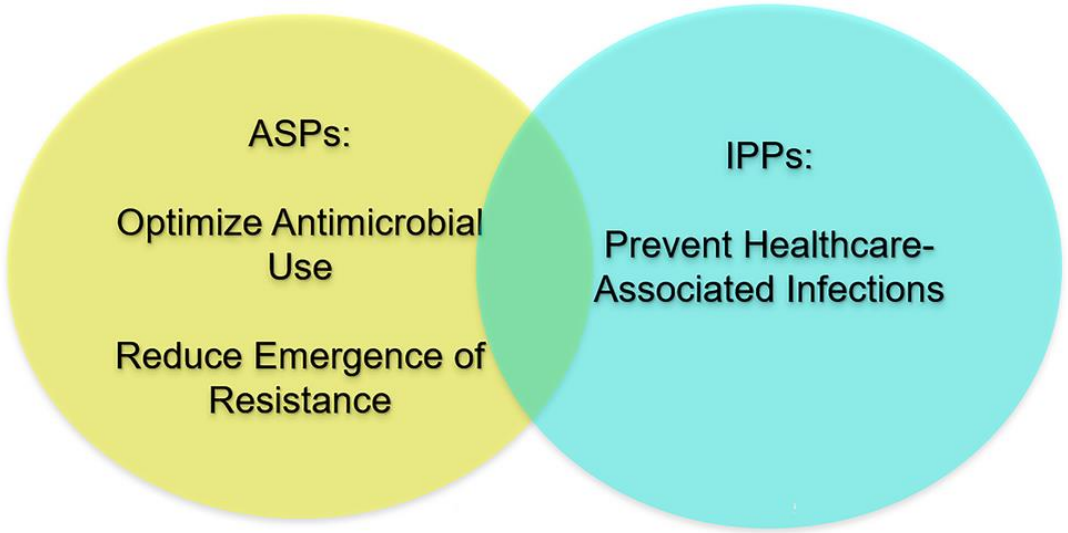


Image from https://apps.hhs.texas.gov/providers/NF/credentialing/cna/infection-control/module2/Module_2_Chain_of_Infection5.html

Image from https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.shutterstock.com%2Fimage-vector%2Fsynergy-sign-over-colorful-cut-out-2312045609&psig=AOvVaw0jz7lmgTKPZauUNQPuhZCJ&ust=1763072061896000&source=images&cd=vfe&opi=89978449&ved=0CBYQjRxqFwoTCNj0-MTR7ZADFQAAAAAdAAAAABAE

Antimicrobial Stewardship (AMS)

”Furthermore, AS programs, when implemented alongside IPC measures, especially hand-hygiene interventions, were more effective than implementation of AS alone—verifying that a well-functioning IPC program is fundamental to a successful organizational AS strategy.”



“Similar data have also shown that the addition of AS interventions can enhance results of robust IPC measures, particularly when addressing an outbreak.” [1] APIC/SHEA/SIDP Antimicrobial Stewardship Position Paper

[1]Manning, M. L., Septimus, E. J., Ashley, E. S., Cosgrove, S. E., Fakih, M. G., Schweon, S. J., Myers, F. E., & Moody, J. A. (2018). Antimicrobial stewardship and infection prevention—leveraging the Synergy: A position Paper update. *American Journal of Infection Control*, *46*(4), 364–368. https://doi.org/10.1016/j.ajic.2018.01.001

Image from https://media.springernature.com/lw685/springer-static/image/art%3A10.1007%2Fs11908-021-00759-w/MediaObjects/11908_2021_759_Fig1_HTML.png?as=webp

Examples of AMS and IP Synergy

Day-to-Day/Regular Activities

- Daily isolation reviews with standardized language (.dotphrase)
  - MDROs
    - Changing isolation periods to be more similar to prevent confusion and unnecessary test out
      - Unit staff may not understand nuances and multiple isolation periods/test out protocols lead to issues with meeting isolation protocols
    - Removal of isolation for certain with carve outs if a unique population
- Monthly reviews of HAI data with key stakeholders
  - IP and ID providers, pharmacists, and others
  - Allow identification of one offs or concerning trends, explanations for unusual testing

UWMC Transmission-Based Precautions: Precautions A-Z

Type and Duration of Precautions Needed for Selected Infections and Condition

To find the organism or condition of interest in this document, use the Find Function: Ctrl-F or search subject by letter

Subject by letter: A B C D E F G H I L M N O P R S T V X Y Z

Precaution Type/Duration	Abbreviation	Comment
Standard	S	Use personal protective equipment (mask, eye protection, gowns and gloves) whenever contact with secretions or excretions is anticipated during care. Transmission-based Precautions are used in addition to Standard Precautions.
Contact	C	Wear gown and gloves.
Contact Plus	CP	Wear gown and gloves for all staff, providers and visitors. Use dedicated equipment and disposable meal trays. EVS follows Contact Plus cleaning protocol. Staff clean high touch surfaces at least twice daily.
Contact Enteric	CE	In addition to Contact Precautions, wash hands with soap and water when exiting room and use hospital approved disinfectant appropriate for contact enteric precautions, such as bleach.
Droplet Contact	DC	Wear surgical mask, eye protection, gown and gloves. Additional requirements during aerosol generating procedures (AGP), see comments for specific infection/condition
Airborne Respirator	AR	Wear PAPR or fitted N95 respirator during care. Place patient in negative pressure Airborne Isolation Infection Room (AIIR).
Airborne Respirator Contact	AR/C	In addition to AR precautions above, Wear gown, gloves, eye protection.
Aerosol	Aerosol	Wear PAPR or fitted N95 respirator during care. Patient is placed in negative pressure Airborne Isolation Infection Room (AIIR) when possible. AIIR preferred for AGP

Precautions: Standard and Expanded Policy

Moderately immunocompromised: Individuals receiving chemotherapy for solid tumors, solid organ transplant recipients, HIV patients with CD4 counts <200, patients with acquired or genetic immunodeficiencies, patients on prolonged or high-level immunosuppression (e.g. cyclophosphamide, MMF) and those receiving prednisone > 20 mg/day for more than 14 days.

Highly Immunocompromised: Individuals who are receiving treatment for a hematologic malignancy (e.g. leukemia, lymphoma, multiple myeloma), all hematopoietic cell transplant, and those receiving CAR-T cell therapy.

NICU Visitation guidelines: uwm-ea-2127.pdf **and** uwm-ea-1367.pdf

Pregnant Healthcare Workers: Precautions during Pregnancy UWMC Employee Health Document

Precautions apply to all settings unless specifically indicated

Infection/Condition/ Causative Agent	Type	Duration	Contact IP to Clear	Comments
MDROs not listed below (Includes multidrug-resistant E. coli, ESBL, Serratia, Enterobacter, Klebsiella, Acinetobacter, Pseudomonas, and all other MDROs that are not listed below)	C	12 months after completed treatment for positive culture	-	Re-testing not required
Carbapenemase-producing and other XDROs	C	Indefinitely	-	CPO/XDRO are considered pathogens of epidemiological concern
Methicillin Resistant *Staphylococcus aureus* (MRSA)	S or C	Until treatment complete	-	**Standard**: Patients who are colonized (eg. Positive nares screening swab) or who have a history of MRSA and no active infection **Contact**: Active MRSA infection (e.g., bloodstream, lower respiratory culture (sputum), or wound) Until antibiotic treatment complete Exceptions: Prolonged antibiotic therapy (e.g., endocarditis, osteomyelitis, etc.): At least 2 weeks of therapy + negative blood cultures
Vancomycin Resistant *Enterococci* (VRE)	S or C	Until treatment complete	-	**Standard**: Patients with a history of VRE and no active infection **Contact**: Active VRE infection (e.g., bloodstream, lower respiratory culture (sputum), or wound) keep in precautions until effective antibiotic treatment complete and no uncontained draining wounds Note: *E. gallinarum* and *E. casseliflavus* are intrinsically resistant to vancomycin and do not require precautions
End of MDROs				

ISOVZVCONTACT	Localized Varicella Zoster Virus identified in skin rash on ***. Because the rash cannot be fully cov...
ISOVZVCSFONLY	Varicella Zoster Virus in CSF only identified on ***. Please maintain standard precautions. If skin le...
ISOVZVDISSEMINATED	Patient positive for disseminated Varicella Zoster Virus skin rash on ***. Please maintain airborne ...
ISOVZVLOCALIZEDIMMU...	Localized Varicella Zoster Virus skin rash identified on ***. Because patient is immunocompromise...
ISOVZVSTANDARDPREC...	Localized Varicella Zoster Virus skin rash identified on ***. Since lesions can be fully covered/cont...

Continued

- Two-step *C. diff* testing
- Blood culture protocols
- Shared definitions for hypotension for centralized bloodstream infections
- Shared protocols for tuberculosis

With so many competing priorities how can an IP get it all done?

5 Phases of the Project Life Cycle

teamgantt

Image from https://www.teamgantt.com/blog/5-crucial-project-management-phases

Examples from Previous Work

Shared Hypotension Definition

1. Initiation
2. Planning
3. Execution
4. Monitoring & Control
5. Closure

Tuberculosis

1. Initiation
2. Planning
3. Execution
4. Monitoring & Control
5. Closure

Tuberculosis Documentation Example

Tuberculosis (TB) System and Facility Comparison

5/13/25; most recent update 7/7/25

Scope: This document is intended to be used as a tool to compare TB practices across system partners, identify disparate practices, and determine where alignment is possible. In areas where alignment is not possible, the request is to have agreement on which facility policy should be followed and when. *Note: Policies and content reviewed are located within the appendix at the end of document.*

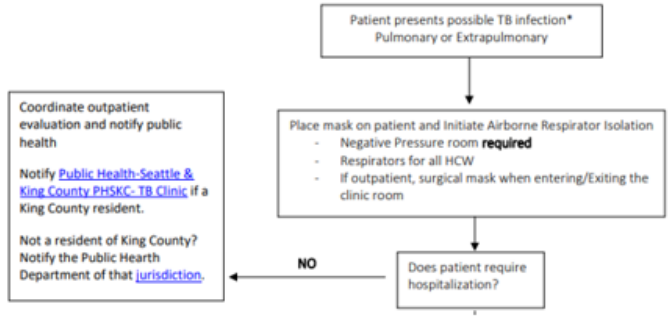
Directions: Please answer all bolded questions for your facility in the **ALIGNMENT QUESTIONS/DISCUSSION** column.

- Do not answer those that are greyed out. These will be answered as a group and/or informed by previous questions. Will be updated later.
- Less than 20 minutes to complete, 15 questions total.
- Please have physician lead and IP lead review and respond
- **Due: 5/21/25**

Yellow- Request more information; potential disparate practice

If all responses are not in alignment, proposed and alignment language will be below responses or in comment box

Detailed Algorithm and Clearance Criteria Comparison

TB Categories Found in A-Z Disease Surveillance Documents and Others				
HMC	**UWMC**	**FRED HUTCH (FH)**	**POTENTIAL DISPARATE PRACTICES**	**ALIGNMENT QUESTIONS/DISCUSSION**
Tuberculosis (M. tuberculosis) • Extrapulmonary, (draining lesion) • Extrapulmonary, no draining lesion, meningitis • Pulmonary or laryngeal disease, confirmed • Pulmonary or laryngeal disease, suspected • Skin-test positive with no evidence of current active disease Neisseria meningitidis (meningococcal) known or suspected • M. tuberculosis	Mycobacterium tuberculosis • Extra-pulmonary TB ○ TB Meningitis included • Latent TB • Mycobacteria, nontuberculosis (atypical) • Pulmonary and Laryngeal TB	Tuberculosis (M. tuberculosis, MTB, TB) • Extrapulmonary ○ No draining lesion, including meningitis ○ Draining lesion • Latent (LTBI), including blood or skin test positive without TB signs or symptoms • Pulmonary or Laryngeal ○ R/O or suspected TB ○ Active TB, including miliary	(1)  (2) Latent TB (ALL) a. Skin test positive without TB s/s (HMC, FH only with specific call out) (3) Active TB, including miliary (FH only)	(1) **Do TB policies only apply to inpatient care?** *HMC and UWMC differentiate per decision tree example on left. No noted clearance criteria for outpatient specific-states to coordinate Outpt and notify PH. Hope to clarify if Outpt follows the same policies and clearance as Inpt. See Appendix for more.* a. HMC: N b. UWMC: N, applies to outpatient as well. Also depends on how public health advises. c. FH: NA, Specific outpatient policies **(2) Does a positive skin test w/o TB s/s fall under Latent TB?** a. HMC: Y b. UWMC: Y c. FH: Y-include both IGRA and positive skin test (TST/PPD) (3) **Would facilities consider specific call out for miliary TB under pulmonary and laryngeal TB category?**
Mycobacterium, nontuberculosis (atypical) • Pulmonary • Wound		Mycobacteria, nontuberculosis (atypical; NTM)		a. HMC: Y b. UWMC: Y c. FH: Y

QUESTIONS?