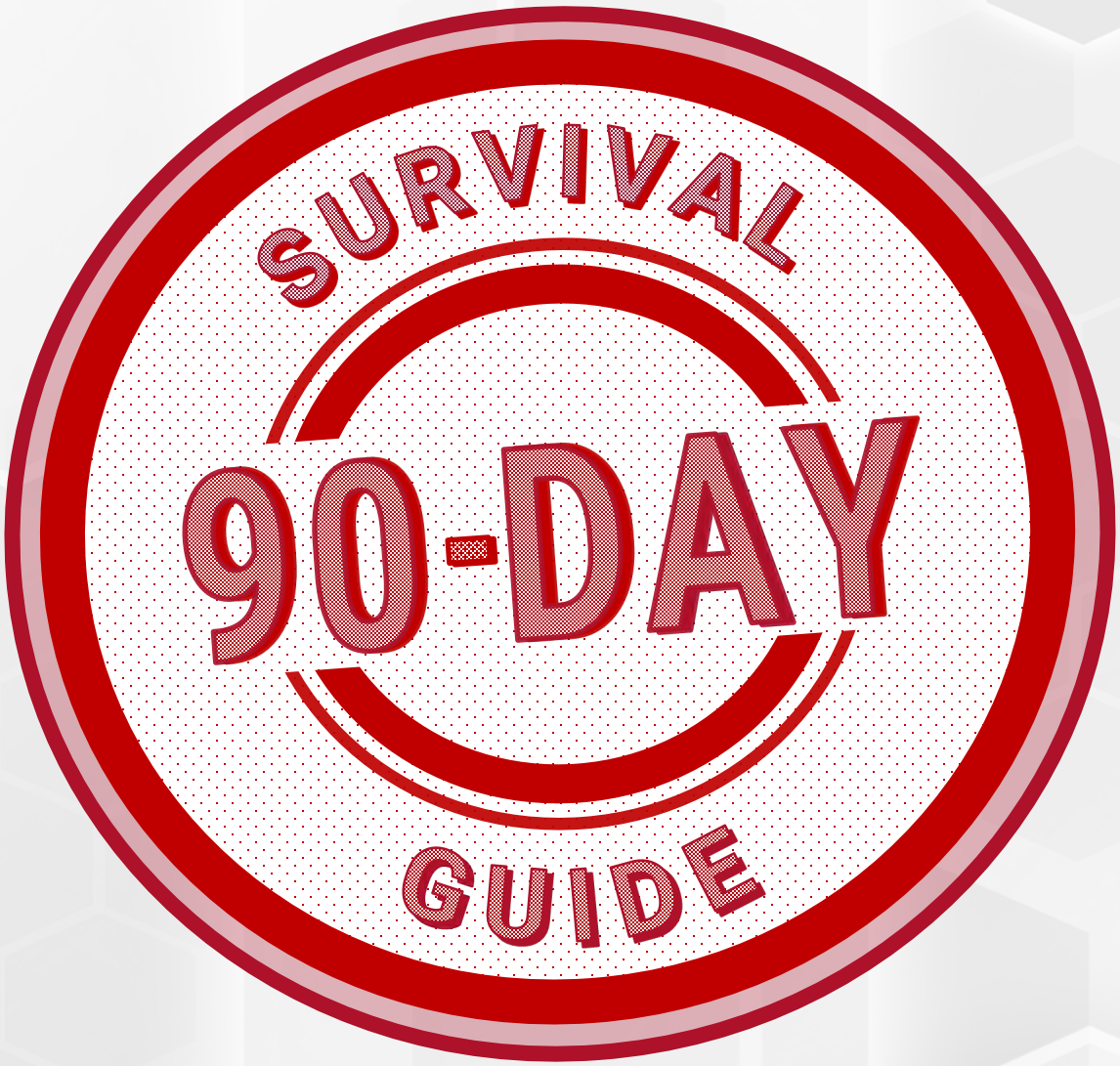

The Infection Preventionist's Orientation Workbook

Essential Instructions for the Survival Guide

Backgrounds, Purpose, and Intended Use

Background

Nebraska Medicine and the University of Nebraska Medical Center with funding from the Centers for Disease Control and Prevention (CDC) (CDC-RFA-CK22-2203) have developed an infection prevention support center to empower Infection Preventionists to advance practice through education, resource development, and novel technological solutions.

Purpose

The 90-Day Survival Guide was developed to help new Infection Preventionists navigate the complexity and nuance of the Infection Preventionist role. This guide has been specifically designed as a resource for infection prevention topics that are foundational for a new Infection Preventionist in the first 90 days on their job.

Intended Use

This workbook was developed by Infection Preventionists to aid in the training and education of new Infection Preventionists. Its content is based on a combination of regulatory requirements, guidelines, and current practice recommendations in infection prevention and control. It is intended to supplement infection prevention education.

Document Sharing

For sharing purposes, please direct people to https://innovateipc.org/ipc-support-center/survival-guide for access to the Survival Guide to ensure they receive the latest version of the workbook.

Acknowledgments

The University of Nebraska Medical Center and The Nebraska Medicine Center acknowledge the subject matter experts and organizations who contributed significantly to this work.

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Key Terms

AGP	Aerosol-generating procedure	**HCID**	High-consequence Infection Disease
AIIR	Airborne Infection Isolation Room	**HCW**	Healthcare Worker
AR	Antimicrobial Resistance	**HVAC**	Heating, Ventilation, Air-Conditioning
BBP	Bloodborne Pathogen	**ICC**	Infection Control Committee
CAUTI	Catheter-associated Urinary Tract Infection	**IFU**	Instructions for Use
CDC	Centers for Disease Control and Prevention	**IPC**	Infection prevention and control
CDI	Clostridioides difficile	**MDRO**	Multidrug-resistant organism
CHG	Chlorohexidine gluconate	**NHSN**	National Healthcare Safety Network
CLABSI	Central line-associated Bloodstream Infection	**NIOSH**	National Institute for Occupational Safety and Health
CMS	Centers for Medicare and Medicaid Services	**OPIM**	Other potentially infectious materials
DHHS	Department of Health and Human Services	**OSHA**	Occupational Safety and Health Administration
DHQP	Department of Healthcare Quality Promotion	**PPE**	Personal Protective Equipment
EHR	Electronic Health Record	**QAPI**	Quality Assurance and Performance Improvement Committee
EOC	Environment of Care	**SIR**	Standardized Infection Ratio
EPA	Environmental Protection Agency	**SSI**	Surgical Site Infection
FDA	Food and Drug Administration	**SUR**	Standardized Utilization Ratio
HAI	Healthcare-associated Infection	**TB**	Tuberculosis
HAP	Healthcare-associated Pneumonia	**VAE**	Ventilator-associated Event

How To Use This Guide

Welcome to the **90-Day Survival Guide**—your comprehensive orientation workbook designed to set you up for success as an Infection Preventionist (IP). This guide has been thoughtfully crafted to provide you with the foundational knowledge, tools, and strategies to confidently navigate your first 90 days in this critical role.

Whether you're new to infection prevention practice or transitioning into the role from another healthcare specialty, this guide will serve as your roadmap, breaking down complex topics into manageable weekly lessons for new IPs.

How To Use This Guide

Follow the weekly structure

Each week builds on the previous week

Take your time to thoroughly explore each topic, ask questions, and reflect on your role and IPC practice at your facility

Engage with teams

Use this guide as a starting point for conversations with your mentors, colleagues, and leaders

Collaborative discussion can provide invaluable context

Navigate with purpose

Use the “Questions to Consider” to prompt evaluation of IPC practices at your facility

Document important findings and follow ups in the notes sections provided

Revisit and revise

Your learning doesn’t stop at 90 days!

Use this guide as a supportive tool throughout your IP journey to reinforce your knowledge, skills, and practice

Table of Contents

It is understood that each topic covered in this guide inherently encompasses fundamental infection prevention practices, such as hand hygiene, standard precautions, and education and training, *even if not explicitly stated*.

Week	Topics Covered	Week	Topics Covered
1	• Infection Prevention Program Background • Organization and Committee Structure • Infection Prevention and Control Program Plan • NHSN Surveillance • Policy & Procedure	7	• Respiratory Protection • Airborne Isolation • Tuberculosis • Hospital Associated Pneumonia (HAP) • Ventilator-associated Event (VAE)
2	• Infection Prevention Risk Assessment • Hierarchy of Controls • Control Measures • Bloodborne Pathogens • Hand hygiene	8	• Surgical Site Infection (SSI) • Non-critical Device Reprocessing • Semi-critical Device Reprocessing • Critical Device Reprocessing
3	• Standard Precautions • Transmission-based Precautions • Personal Protective Equipment	9	• Environment of care • Environmental Services • Laundry • Waste Management
4	• Required Notification • Identify, Isolate, Inform • Injection Safety	10	• Heating, Ventilation, Air Conditioning (HVAC) • Construction & Renovation • Water Management
5	• Surveillance • Catheter-associated Urinary Tract Infection (CAUTI) • Central Line-associated Bloodstream Infection (CLABSI)	11	• Collaborative Programs • Occupational Health • Antimicrobial Stewardship • Quality Improvement • HAI/AR Programs
6	• Multidrug-Resistant Organisms • Outbreaks • *Clostridioides Difficile* Infection	12	• Policy Development • Infection Prevention and Control Rounding • Staff Education & Training • Audit & Feedback • Using Surveillance Data

Resource Utilization

Numerous resources are available to guide infection prevention practices across various professional platforms. However, this guide focuses on highlighting primary resources that are both free and widely accessible to everyone. There are a variety of agencies and organizations that provide professional resources for IPs and IPC practice. Some resources are regulatory, which means you are REQUIRED to follow their standards. Other resources provide information to influence practice and provide recommendations for best practice. Below are some common examples that you may encounter in your practice.

Federal/Regulatory

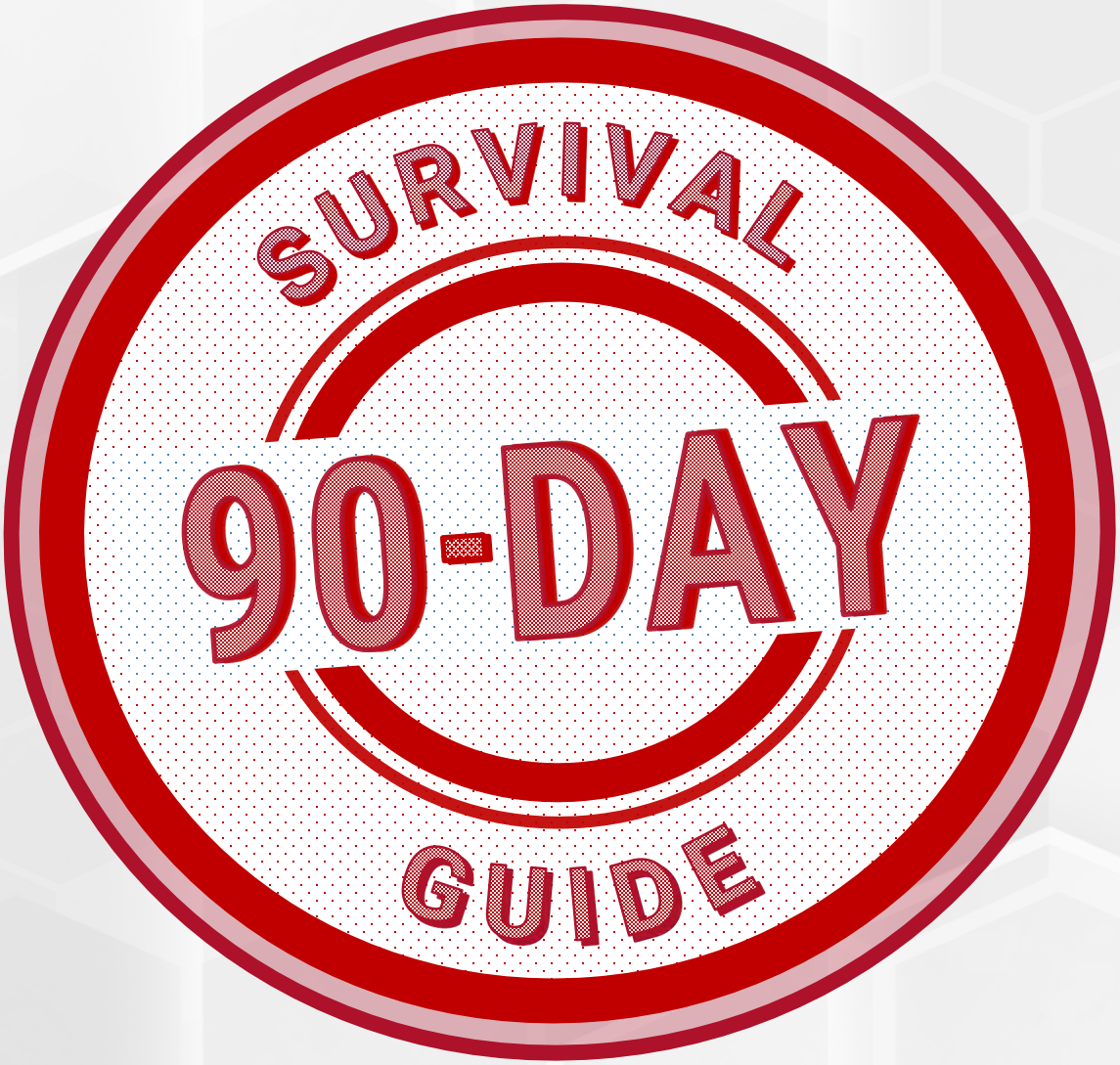
- ✓ Center for Medicare and Medicaid (CMS)
- ✓ The Food and Drug Administration (FDA)
- ✓ The Environmental Protection Agency (EPA)
- ✓ Occupational Safety and Health Administration (OSHA)
- ✓ The National Institute for Occupational Safety and Health (NIOSH)

Guidelines

- ✓ Centers for Disease Control and Prevention (CDC)
- ✓ Department of Health & Human Services (DHHS)
- ✓ Agency for Healthcare Research and Quality (AHRQ)
- ✓ National Committee for Quality Assurance (NCQA)
- ✓ Division of Healthcare Quality Promotion (DHQP)
- ✓ National Healthcare Safety Network (NHSN)

Recommended Practices

- ✓ Association for Professionals in Infection Control and Epidemiology, Inc. (APIC)
- ✓ Association of periOperative Registered Nurses (AORN)
- ✓ Association for the Advancement of Medical Instrumentation (AAMI)
- ✓ Certification Board of Infection Control and Epidemiology (CBIC)
- ✓ Society for Healthcare Epidemiology of America (SHEA)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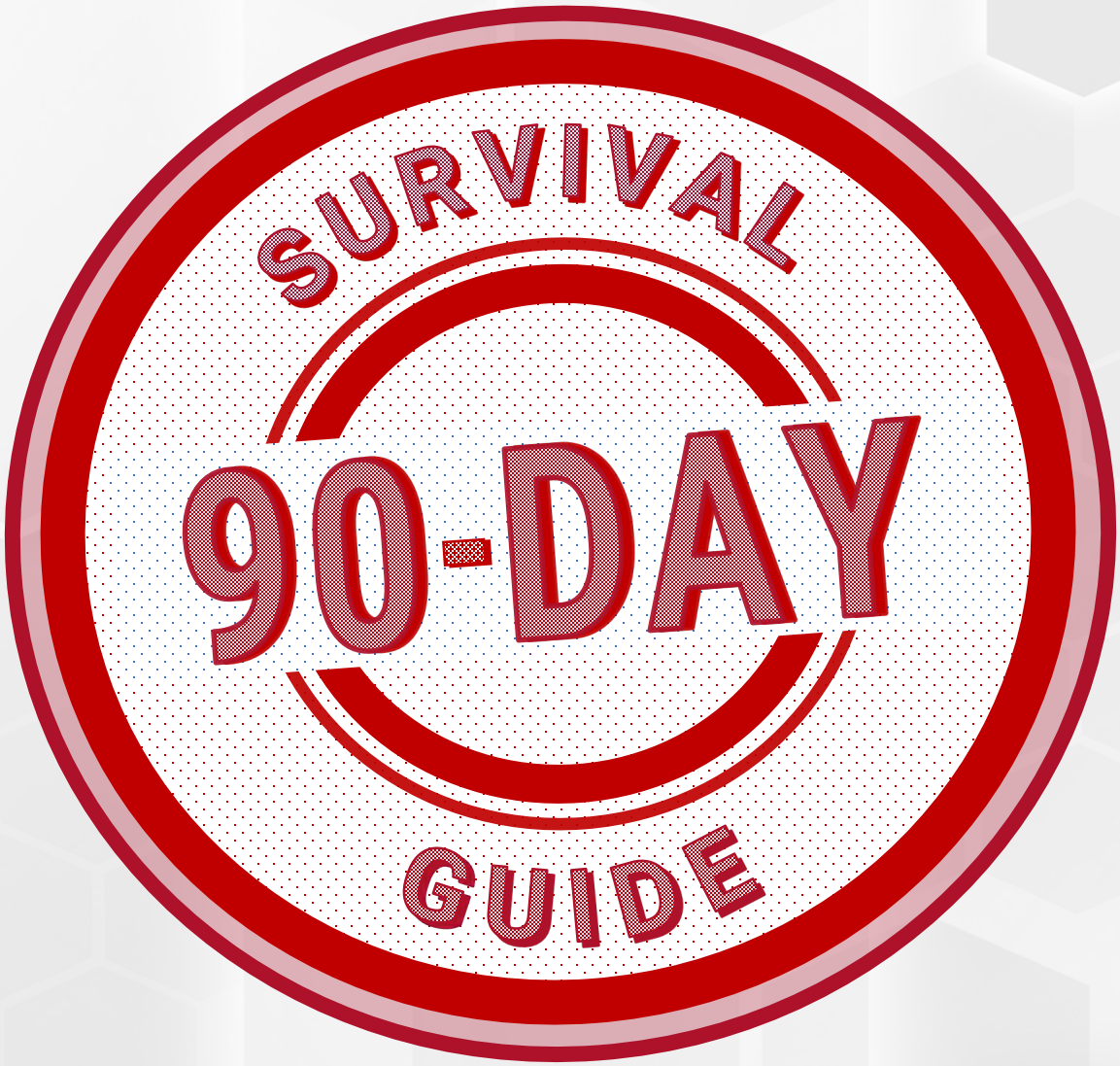


The Infection Preventionist's Orientation Workbook

WEEK ONE

Table of Contents

Infection Prevention and Control

What is an Infection Preventionist?

An Infection Preventionist (IP) is a healthcare professional specializing in preventing and controlling infections within healthcare and community settings. IPs focus on protecting patients, staff, and the public by implementing evidence-based practices and strategies to reduce disease transmission and the risk of patients developing healthcare-associated infections (HAIs).

What does an IP do?

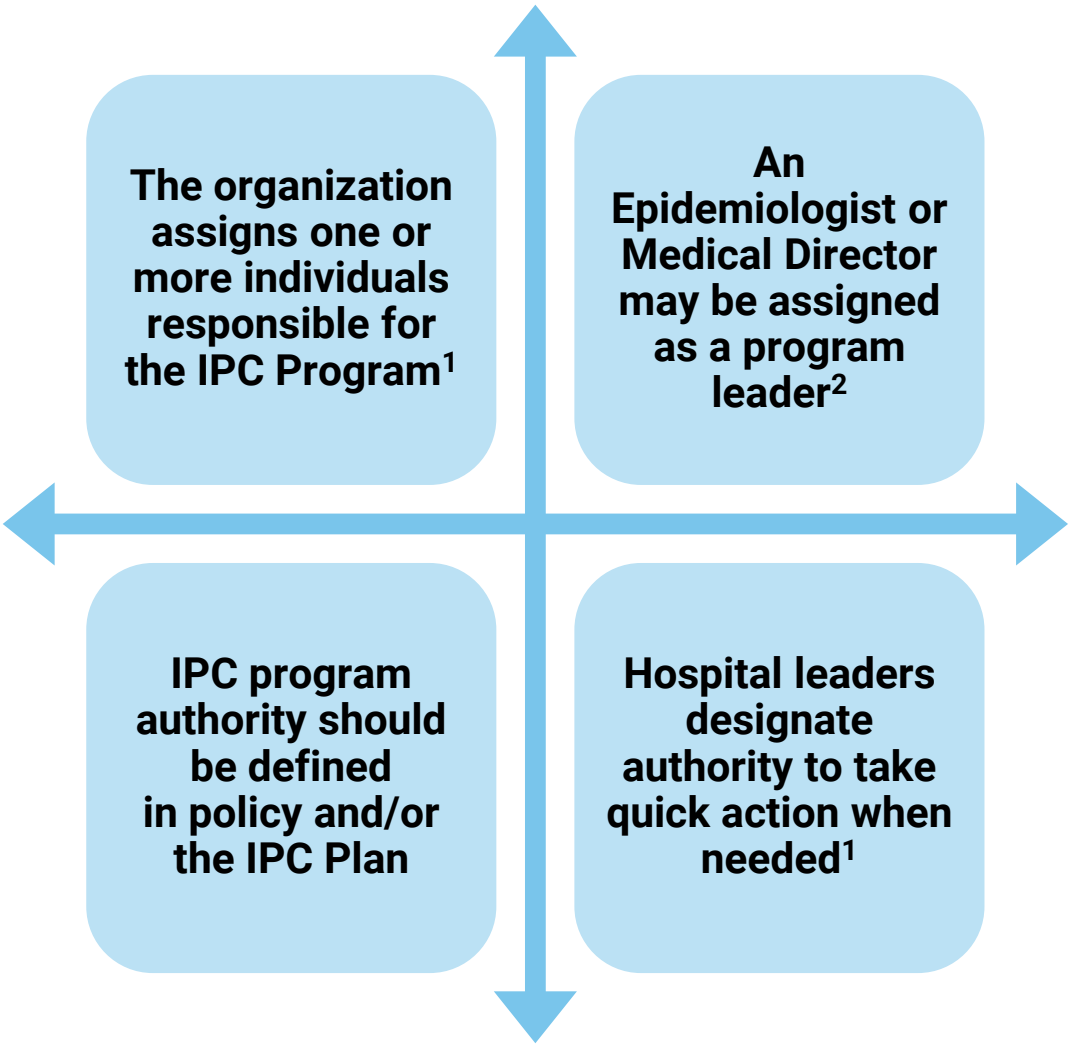
- Identify solutions to prevent HAIs
- Advocate for patient safety
- Perform surveillance
- Monitor for outbreaks
- Partner on policy development and review
- Partner on education and training of healthcare workers and patients
- Implement quality improvement initiatives
- Maintain compliance
- Lead teams
- Collaborate across the facility

Week 1 will provide an overview of Infection Prevention programs and the role of the IP within healthcare facilities

Infection Prevention Authority

Organizations are required to assign one or more qualified individuals responsible for the Infection Prevention and Control (IPC) program.[1] Regulatory bodies require the IPC program to have the authority to take immediate action within their scope when necessary.[3] The authority is designated by the hospital's senior leadership. The extent of the IPC program's authority is defined in a policy statement and is likely noted in the IPC program's annual program plan.

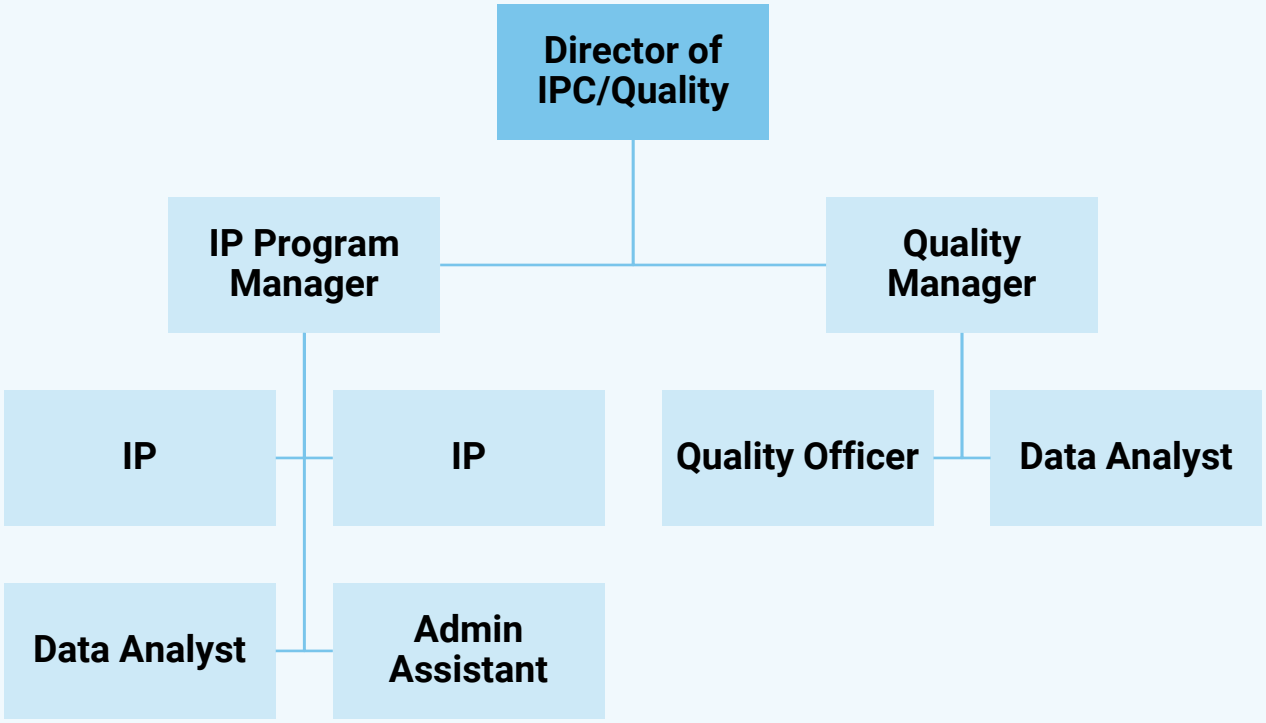
Key Aspects of an IPC Program



Review Organizational Structure

Understanding the organizational structure within your facility is crucial because outlines the roles and responsibilities necessary to achieve the organization's goals. Organizational structure largely determines the flow of information sharing, delegation, and authorization of procedures. Organizational structures may vary depending on many factors such as the facility type and populations served *(e.g., Critical Access Hospitals, Ambulatory Surgery Centers, Long-Term Care.)*

Refer to the example below and consider developing a similar chart to align with your facility's organizational structure.



Questions to consider as you review organizational structure

- ☐ Where do you fit in your organizational and leadership structure within your facility?
- ☐ Do you have anyone who directly reports to you?
- ☐ Who do you report to?

Job Duties and Expectations

IPs must possess a comprehensive understanding of the details outlined in their job description. A clear understanding of the job responsibilities and scope ensures that the IP can effectively carry out their duties and remain current on evolving practices, regulatory guidelines, and emerging infectious diseases. This knowledge enhances their ability to proactively address potential risks and contributes to the overall effectiveness of infection control strategies within the healthcare setting.

List the details of your IP duties as described in your job description

The IPC Team and Collaborative Program Partners

IPC programs are often multidisciplinary teams that work collaboratively to implement evidence-based practices to protect patients, healthcare workers, and visitors. IPC team members as well as collaborative partners must work together to successfully implement IPC practices across the organization. Take the time to get to know your team and partners within your facility.

IPC Program

IPC Team

- IPC Program Medical Director
- IPC Program Manager
- Epidemiologist
- Data Analyst
- Additional Infection Preventionists
- Administrative Assistant(s)

Name	Department/Title
Jane Doe	Infection Preventionist

Program Partners

- Quality
- Occupational Health
- Lab
- Microbiology
- Risk/ Safety
- Facilities/ Engineering
- Environmental Services
- Accreditation
- Pharmacy
- Unit Leadership
- Physician groups

Name	Department/Title
Jane Doe	Infection Preventionist

It is important to note that IPC teams may look differently across facility types.

Building Relationships with Team Members

Building relationships is essential for an effective IPC program. Engaging with facility leaders helps to build rapport and gain valuable insights into their departments. Each week of the 90-Day Survival Guide covers various IPC topics and provides an opportunity to meet with relevant leaders associated with that week's topics. The section below provides a guide on how you may choose to introduce yourself to relevant departmental leaders during your 90-day journey. Consider scheduling these meetings now for the upcoming weeks to enhance your experience within that week's topic.

Week 1	IPC Program Director
Week 2	Quality Director
Week 3	Nursing Unit Leaders
Week 4	Local/ State Health Department contact(s)
Week 5	Information Technology
Week 6	Laboratory Microbiology Lab

Week 7	Respiratory Services
Week 8	Procedural Services/ Operating Room Leadership Device Reprocessing Leadership
Week 9	Environmental Services Linen
Week 10	Facilities and Engineering
Week 11	Occupational Health Antimicrobial Stewardship
Week 12	Nursing and Staff Educators

Conversation Starters

Conversation starters are an excellent tool to help facilitate early and effective communication with departmental leaders covering relevant IPC topics for both parties. *Follow the link to access a suite of Conversation Starter resources:* https://innovatipc.org/ipc-support-center.

Healthcare Facility Departments

It is essential to know the departments and services provided within the healthcare facility. A thorough understanding of departments helps you to recognize their scope of service and contribution to the facility's IPC strategies.

Identify units, departments, and services provided within your facility

Department	Manager	Contact Info	Services Offered
Supply Storage			
Biomed			
Information Technology			

Tour Facility

Touring the facility allows you to familiarize yourself with operations and workflows within the building. It also provides you an opportunity to meet colleagues throughout the facility.

Considerations to help you prepare for the facility tour

- [ ] Request a tour from someone familiar with the layout of the facility
- [ ] Request maps and floor plans of the facility to guide your tour (*Facilities may be able to help*)
- [ ] Amend the list on the previous page, if needed, as you find areas that are not represented
- [ ] Request a list of rooms and areas that have special environmental implications such as airflow requirements for airborne isolation rooms and positive pressure environments

On the tour, you will likely meet department leadership. Take advantage of this opportunity to introduce yourself and let them know that you will be reaching out soon to schedule a meet and greet.

Notes

Infection Prevention and Control Program Plan

The IPC program plan is a comprehensive framework developed by a multidisciplinary team to manage and prevent the spread of infectious diseases. It outlines strategies and protocols to minimize the risk of infections and disease transmission among patients, healthcare workers, and visitors. The IPC program plan must address all aspects of the IPC program to ensure a proactive and effective approach to safeguarding public health within healthcare facilities.

Key Elements of an IPC Program Plan	
Program Background	Facility mission & program vision
	Scope of Services
	Organizational characteristics
	Community/ Population demographics
	IPC Program leadership and structure
	Staffing & Credentials of IPC Team
	Committee Structure
	IP Authority Statement (Decision Authority)
Assessment & Planning	Risk Assessment
	Identified priorities & Strategic goals
	Process & Outcome Measures
	Evaluation Methods & Performance Improvement
Program Functions	Surveillance Plan
	HAIs (e.g. CAUTI, CLABSI, MRSA, CDI)
	Horizonal Measures (e.g., hand hygiene)
	Outbreak Investigations
	Education Plans & Campaigns
	Vaccination Campaigns (e.g., influenza)
	Environment of Care
Regulatory Compliance	Bloodborne Pathogen Training,
	Exposure Control Plans
	Respiratory Protection Plans

Program Plan Questions to Consider

To answer these questions, you may need to review the IPC program plan. In the first few weeks of your new role, key questions to consider are:

1. **Who has clinical authority over the IPC Program?**
2. **What were the program goals for the last year?**
3. **What is the status of those defined goals?**

Notes

Program Surveillance & NHSN Reporting

Surveillance and monitoring of infections is a key component of IPC programs and allows for facilities to monitor for HAI incidence and trends, evaluate patient safety, and identify performance improvement opportunities.

A common surveillance method used across United States healthcare facilities is through The CDC's National Healthcare Safety Network (NHSN.) NHSN is the nation's most widely used HAI tracking system, and it provides healthcare facilities the ability to see their tracked data in real time, while ensuring data security and integrity.[5]

NHSN reporting is comprised of numerous components to meet the needs of facilities. Each component provides healthcare facilities with objective definitions for standardized surveillance. Healthcare facilities and IPC programs can customize their NHSN reporting based upon facility makeup, program needs, and the surveillance plan.

NHSN helps facilities share relevant data and information with:

- Clinicians
- Facility leadership
- Other facilities (e.g., a multi-hospital system)
- Public Health partners
- Quality Improvement Organizations
- For more information on NHSN's impact, visit: NHSN Fact Sheet

IP Pro Tip:

NHSN is very detailed and can be complex. NHSN has developed a very robust training program that is not duplicated in this guide. More information on general IPC Surveillance will be covered in Week 5 of this guide.

For assistance with NHSN, refer to https://www.cdc.gov/nhsn/index.html and the "Getting Started in NHSN" recommendations on the next page

Program Surveillance & NHSN Reporting

1. **PREPARE**
   - ❑ Request to be enrolled as a new user to NHSN's Secure Access Management Services (SAMS) program by the current facility administrator at your facility https://sams.cdc.gov
   - ❑ Once completed, SAMS will email you with necessary information to apply to the program (this step may take several days)

2. **APPLY & REGISTER**
   - ❑ Complete application and identity verification documentation for registration

3. **LEARN** ***(This can occur concurrently with SAMS application)***
   - ❑ Review the facility training for new users https://www.cdc.gov/nhsn/pdfs/training/enroll/nhsn_getting_started.pdf
   - ❑ Follow the Educational Roadmap(s) relevant to your facility type https://www.cdc.gov/nhsn/training/roadmap/index.html -

A common challenge for many IPC programs is determining what elements should be included in surveillance and NHSN reporting plans. NSHN reporting is commonly influenced by:

1. What state you practice in (e.g., State/ Local Regulations/ Laws)
2. CMS reporting requirements by facility type
3. Services offered in the facility (e.g., dialysis, surgical procedures)
4. Populations served in the facility (e.g., pediatrics, long-term care)

For more information on NHSN reporting,
refer to https://www.cdc.gov/nhsn/index.html.

IP Pro Tip:

NHSN has a Help Desk to assist with NHSN-related surveillance questions.

Website: https://www.cdc.gov/nhsn/about-nhsn/helpdesk.html **Email**: nhsn@cdc.gov

Program Surveillance & NHSN Reporting

NHSN reporting modules are comprised of many standardized surveillance definitions to monitor process measures and events related to patient care and healthcare personnel safety. This page is intended to provide a reference of NHSN surveillance terms that will be referred to throughout the remainder of the Survival Guide. This is NOT a comprehensive list of all events reported to NHSN, nor is every facility required to report all these events. For more information on how to perform surveillance through NHSN, refer to NHSN's Patient Safety Component (PSC) Manual and Healthcare Personnel Safety Component Manual (HPS).

Current NHSN Events	Brief Overview
Antimicrobial Use & Resistance (AUR)*	Evaluates for antimicrobial use (AU) and resistance data within healthcare facilities. Data is reported for location-specific and facility-wide metrics.
Bloodstream Infections (BSI) & Central Line-Associated BSI (CLABSI)*	Evaluates for Laboratory Confirmed Bloodstream Infections (LCBIs) and secondary BSIs through laboratory and clinical criteria.
Pneumonia	Evaluates for healthcare-associated pneumonia including Ventilator-associated pneumonia (VAP) and non-ventilator-associated Pneumonia (PNEU) through a combination of imaging, clinical, and laboratory criteria.
Ventilator-Associated Events (VAE)* & Pediatric VAE (PedVAE)	Evaluates events related to mechanical ventilation based on objective data from clinical oxygenation requirements and symptoms and laboratory data. Definitions include Ventilator-associated conditions (VAC,) Infection-related Ventilator-associated Complication (IVAC,) and Possible-Ventilator-associated Pneumonia (PVAP.)
Urinary Tract Infections (UTI) & Catheter-Associated Urinary Tract Infection (CAUTI)*	Evaluates for Symptomatic UTI (SUTI) or Asymptomatic Bacteremic UTI (ABUTI) in patients with or without an indwelling urinary catheter through laboratory and clinical criteria.
Surgical Site Infection (SSI)*	Evaluates for superficial, deep incisional, and organ/space SSIs utilizing a combination of imaging, laboratory, and clinical data. SSIs also have a wider surveillance period with some procedures requiring surveillance for 30 days and others for 90 days.
LabID* (Multidrug-resistant organisms (MDRO) & *Clostridioides difficile* Infection (CDI)	Evaluates for MDRO and CDI incidence in healthcare facilities. Events are categorized by Community-Onset (CO), Healthcare Facility-Onset (HO), and Healthcare Facility-Onset Healthcare Facility-Associated (CO-HCFA) for CDI ONLY.
Healthcare Personnel Safety Events*	Allows monitoring and reporting of infectious disease exposures and preventative practices amount healthcare workers (e.g., flu vaccination)

* Commonly reported events across facilities

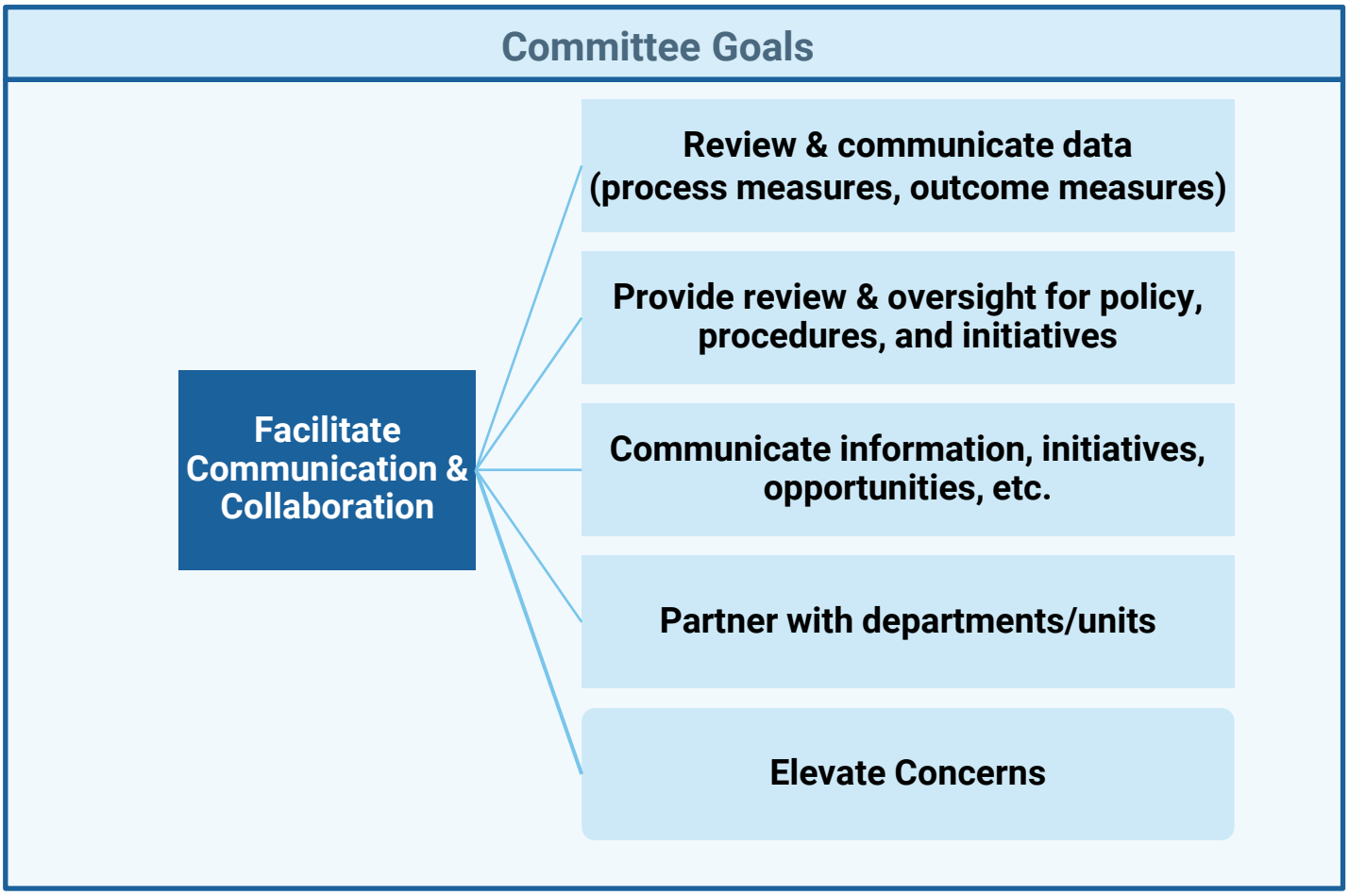
Collaboration and Reporting Through Committees[1,2]

An IPC reporting structure refers to the methods of communicating IPC information, data, and program decisions throughout the organization. The IPC reporting structure may look different from your organizational structure, but its goal is to facilitate multidisciplinary communication and collaboration.

This communication occurs through regular committee meetings or via written reports to relevant stakeholders. IPC reporting via committees is typically performed at an Infection Control Committee (ICC) or Quality Assurance and Performance Improvement (QAPI) committee. These committees are multidisciplinary entities that collaborate to assess, analyze, and improve infection prevention and quality improvement processes.

Pro IP Tip
CMS requires a reporting pathway from IPC Programs to QAPI.

They aim to identify areas of opportunity, implement evidence-based practices, and monitor outcomes, ultimately ensuring that healthcare services align with the highest standards of care.



Collaboration and Reporting Through Committees

Sample Committee Membership

Complete the table below to organize monthly reporting meeting(s)

Department	Report Out	Frequency of Report
IPC team	Sarah Smith	Monthly
Infection Prevention Medical Director/Clinical Authority		
Quality team/representative		
Unit leadership		
Medical staff leadership		
Occupational Health		
Facilities and Engineering		
Laboratory/Microbiology		
Environmental Services		
Safety/Risk		
Patient Care Equipment		
Sterile Processing Department		
Surgical Services Leadership		
Pharmacy		
Accreditation		
Dietary		
Clinical and ancillary staff		

Collaboration and Reporting Through Committees

Sample Agenda for an ICC Meeting

Action	Lead
Call to Order	
Approval of Minutes	
HAI Surveillance • HAI rate graph presentation noting comparison to annual IPC program goals	

IPC Program topic of the month
• *e.g., Quarterly CAUTI review*
  • *Unit based SIRs, CADs*
  • *CAUTI summary*
  • *Overview of current CAUTI interventions*
  • *Process and Outcome Measures*	

Occupational Health Report	
Laboratory/ Microbiology Report	
Environmental Services Report	
Facilities/Engineering Report	
Investigations • *e.g., Employee exposure or hospital transmission of Neisseria meningitidis, Mycobacterium tuberculosis*	
New Business	
Review of Action Items and Adjourn	

Questions to Consider for Reporting

1. **Does your facility have a committee reporting structure for IPC topics?**
2. **If no, how are IPC matters addressed?**
3. **If yes, what is the IPC program's reporting structure?**
4. **How is IPC data and information reported?** *e.g., ICC reports to QAPI then Patient Safety.*
5. **What data is reported and who is it reported to?** *e.g., CLABSIs reported to NHSN*
6. **How often does the IPC committee meet and who leads it?**

Notes

Organization Policies and Procedures

Policies and procedures are formalized documents intended to provide guidance for staff on practices or actions within the facility. IPC programs are responsible for the development and management of written, evidence-based IPC policies and procedures.[1] IPC programs should also provide input on departmental policies and procedures as they relate to infection prevention practice.

Common Infection Prevention Owned Policies				
Epidemiology &/or Infection Prevention Authority	IPC Program Plan	Reportable Conditions & Outbreak Management	Bloodborne Pathogen & Exposure Control Plan	HAI-Prevention Policies *(e.g., CAUTI, CLABSI, etc.)*
Standard Precautions	Transmission-Based Precautions	Personal Protective Equipment	Respiratory Protection Plan	Injection Safety
Tuberculosis Prevention/ Exposure Control	Hand Hygiene	Environmental Cleaning	Device Reprocessing	Construction & Renovation
HVAC & Airflow	Waste Management	Water Management	High-Consequence Infectious Disease Protocols *(e.g., Ebola, Prions)*	IPC Management of Healthcare Workers

Other departments that typically have IPC policies

- Sterile Processing Department
- Environmental Services
- Occupational Health
- Facilities and Engineering
- Specialty Service Areas
- Individual Units
- Surgical Services
- Volunteer Services

Practice Guidance

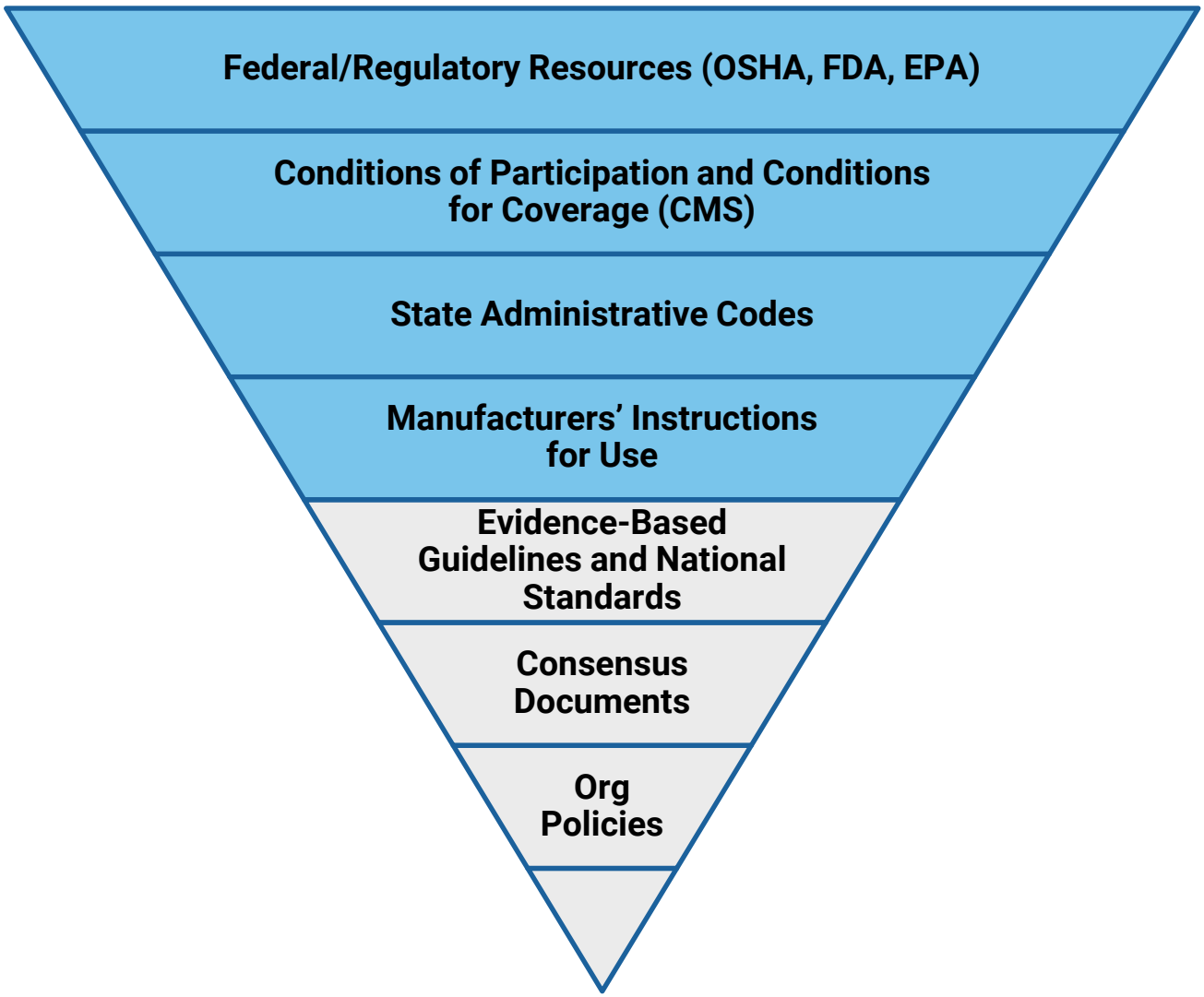
There are many agencies and organizations that set professional guidance and practice requirements and standards for infection prevention. The table below outlines common agencies for IPC practice and their corresponding requirements.

	Definition	Requirement	Established by	Risk of non-compliance
Regulatory EPA, FDA, CMS, OSHA	Legally binding standards & rules	Mandatory	Government agencies or regulatory bodies	Penalties, fines or legal consequences
Accrediting Bodies TJC, AAAHC, DNV	Standard setting & accreditation body	Required if they accredit your facility	Private accreditation bodies	Loss of certification & deemed status
Guidelines CDC, WHO	Similar to recommended practices but often broader	Not mandatory but based on evidence-based research & expert consensus	Government agencies, professional associations or international bodies	Must have a rationale for NOT following recommended practices
Recommended Practice AORN, APIC, AAMI	Grounded in research & benchmarks for best practice	Not mandatory but based on best practice & expert consensus	Professional organizations	Should have a clear rationale for NOT following RP

IP Pro Tip:
Many states have local laws, regulations, and administrative codes related to infection prevention practice and reporting. Partner with your facility leadership and/or accreditation department to learn more.

Practice Guidance

The standards hierarchy below helps to illustrate the prioritization of the numerous requirements for healthcare facilities. The top four rows in blue (federal resources, conditions of participation, state administrative codes, and manufacturers' Instructions for use) represent regulations and requirements that your facility must follow. The gray rows (evidence-based guidelines, consensus documents, and organizational policies) can be used to help guide practice and policy and are supported by evidence-based research.



Adapted from The Joint Commission [4]

Week 1 Review

Internal Policies

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ IPC Authority			
❑ IPC Program Plan			

Considerations for Week 1

- ❑ Determine which guidelines and standards your facility utilizes
- ❑ Consider watching Behind the Mask Webinar: Webinars | innovateIPC.org
  - "Fundamentals of an IPC Program"
- ❑ Meet with IPC Program Director (or direct leader)
- ❑ Consider beginning NHSN's Educational Roadmap (if applicable to your facility) https://www.cdc.gov/nhsn/training/roadmap/index.html -

https://Innovateipc.org

Week 1 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics.

Primary Resources for Week 1:

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery	CDC/ HICPAC	Guideline
CMS State Operations Manual*	CMS	Regulatory
National Healthcare Safety Network (NHSN)	CDC/ NHSN	Resource

** The CMS State Operations Manual (SOM) will vary depending on your facility type. Acute care is linked above, reference the CMS website for additional SOMs for other facility types.*

Week 1 References

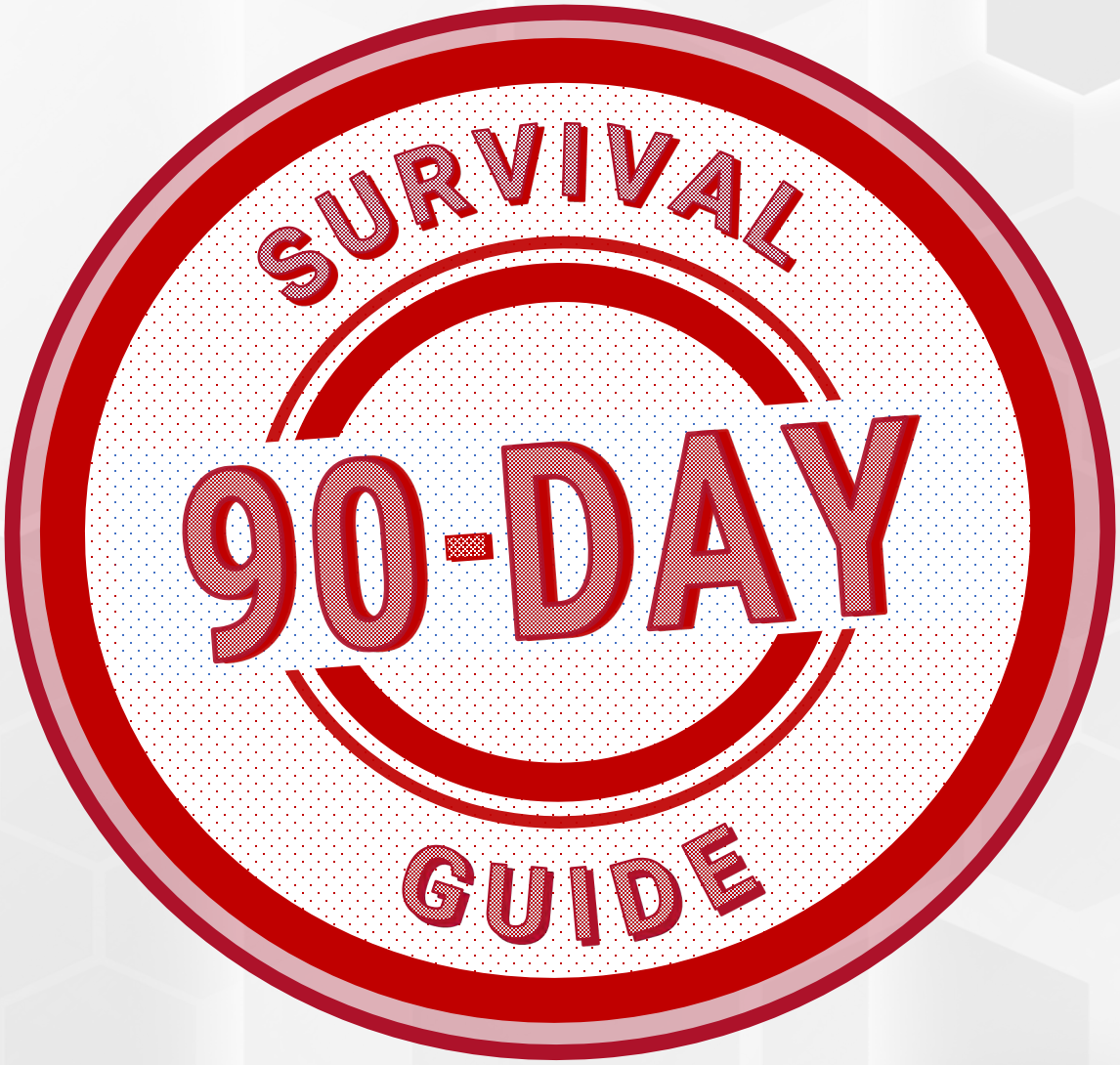
1. State Operations Manual. Centers for Medicare and Medicaid. Updated April 19, 2024. Accessed January 14th, 2025. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_a_hospitals.pdf

2. Holmes, K., McCarty, J., Steinfeld, S. Infection Prevention and Control Programs. The APIC Text. February 21, 2021. Accessed January 14, 2025. https://text.apic.org/toc/overview-of-infection-prevention-programs/infection-prevention-and-control-programs

3. CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings. Centers for Disease Control and Prevention. April 12, 2024. Accessed January 14, 2025. https://www.cdc.gov/infection-control/hcp/core-practices/index.html

4. Clarifying Infection Control Policy Requirements. The Joint Commission. April 2019. Accessed January 14, 2025. https://store-jcrinc.ae-admin.com/assets/1/7/IC_Hierarchy_JCP0419.pdf#:~:text=The%20Joint%20Commission%20recommends%20that%20health%20care%20organizations%2C,the%20various%20IC%20require-ments%20relevant%20to%20the%20organization.

5. National Healthcare Safety Network. https://www.cdc.gov/nhsn/ -



The Infection Preventionist's Orientation Workbook

WEEK TWO

Table of Contents

Risk Assessment & Program Planning

Performing an organizational infection control risk assessment is an essential responsibility of the IPC program. The risk assessment is a systematic process involving multidisciplinary input to determine the level of IPC risks to patients and healthcare personnel and the impact on the organization. The information gained from risk assessment is leveraged to develop a comprehensive IPC program plan to minimize related risks.[2] The IPC Program Plan is a formal document outlining identified risks, objectives, and strategies for the IPC program. Risk assessments are typically performed annually but may be amended as new risks are identified.

What Does an IPC Risk Assessment Do?

1. **Identify Risks**: Proactively identifies potential infection risks in various areas and processes within the facility
2. **Prioritize Interventions**: Helps prioritize infection prevention measures based on the level of risk and potential impact
3. **Allocate Resources**: Assists in the efficient allocation of resources to areas with the highest risk
4. **Ensure Regulatory Compliance**: Ensures compliance with national and international healthcare regulations and standards
5. **Improve Outcomes**: Reduces the incidence of healthcare-associated infections (HAIs), improving patient outcomes and reducing healthcare costs

During a risk assessment, IPC risks are prioritized using the following elements:

PROBABILITY
What is the likelihood that this event or situation will happen at your facility?

IMPACT
What is the impact on humans (*patients, staff, visitors etc.*), property, or business?

PREPAREDNESS
How prepared is the facility? What external support is available?

Risk Assessment & Program Planning

Severity= Magnitude- Mitigation								
Event	Probability	Human Impact	Property Impact	Business Impact	Prepared-ness	Internal Response	External Response	**RISK**
	Likelihood of presence in patient population	Severity of infection	Additional action needed (e.g., staffing, isolation, cleaning)	Increased length of stay/ cost to the facility	Identification of infection and plan for patient care	Staff knowledge and internal support to care for disease/ infection	External support for type of infection. E.g., Public health	Relative threat to the facility
Score (Risk)	0= N/A 1= Low 2= Medium 3= High	0= N/A 1= Low 2= Medium 3= High	0= N/A 1= Low 2= Medium 3= High	0= N/A 1= Low 2= Medium 3= High	0= N/A 1= Low 2= Medium 3= High	0= N/A 1= Low 2= Medium 3= High	0= N/A 1= Low 2= Medium 3= High	0-100%
MRSA	3	3	1	1	1	1	1	39%
ESBL	3	2	1	1	1	1	1	39%

Above is a sample risk assessment tool detailing how an IP may assess the risk of MDROs within their facility. A template can be found at:
Innovate IPC Risk-Assessment-Template.xlsx

What Elements or Events Are Reviewed in a Risk Assessment?

- Types of Infections
- Types of Procedures
- Significant Organisms
- At-Risk Populations
- Healthcare Personnel Risks
- Equipment & Supply Risks
- Emergency Preparedness
- Environmental Concerns
- Geographical Considerations
- Community Considerations

Where Does Risk Assessment Information Come From?

Various tools and methods can be used to assist in conducting a risk assessment.

- Internal Data
  (audits, rounding, tracers)
- Audit tools
- HAI surveillance
- Community Data

Data analysis and reporting software can be used to track infection trends and outcomes.

Risk Assessment & Program Planning

How to Conduct a Risk Assessment

Establish Multidisciplinary Group
- Who is involved in this process?

Prioritize Efforts Based Risk Scores
- Guides activities

Gather Data & Information
- Organizational data
- Population-Based data

Establish Timeline
- Interim risk assessment
- New process

Perform Risk Assessment
- Annually
- Rank order priorities

Select Risk Assessment Tool
- Easy to Use
- Ranking scheme

Disseminate Information

**Note – the order of tasks referenced above is an example; IPs should design their risk assessment according to the needs of their facility and program. Some steps may occur concurrently.*

Notes

Risk Assessment & Program Planning

An essential function of any IPC program is to evaluate its current state, identify goals, and strategize on interventions to improve practice within the facility. After completing an annual risk assessment, use the results to formally update and inform the IPC Program Plan. This is typically completed annually and is updated as need. The next page will provide an example of using risk assessment results to develop strategic goals for the IPC Program Plan.

Key Elements of an IPC Program Plan	
Program Background	Facility mission & program vision
	Scope of Services
	Organizational characteristics
	Community/ Population demographics
	IPC Program leadership and structure
	Staffing & Credentials of IPC Team
	Committee Structure
	IP Authority Statement (Decision Authority)
Assessment & Planning	Risk Assessment
	Identified priorities & Strategic goals (e.g., SMART Goals)
	Process & Outcome Measures
	Evaluation Methods & Performance Improvement
Program Functions	Surveillance Plan
	HAIs (e.g. CAUTI, CLABSI, MRSA, CDI)
	Horizonal Measures (e.g., hand hygiene)
	Outbreak Investigations
	Education Plans & Campaigns
	Vaccination Campaigns (e.g., influenza)
	Environment of Care
Regulatory Compliance	Bloodborne Pathogen Training
	Exposure Control Plans
	Respiratory Protection Plans

Infection Prevention Risk Assessment & Program Plan

One common method many programs use to address identified risks and priorities from the risk assessment is through the development of action plans via SMART goals.
For example:

- Risk Assessment results for the facility shows priority risk for CLABSI.
- The Standardized Infection Ratio (SIR) is 1.07 and Standardized Utilization Ratio (SUR) of 1.2
- Audit data and staff feedback reveled challenges and opportunities in the facility's CLABSI prevention strategies

Based on the risk assessment results, audit results and staff feedback, strategic goals were written into the IPC Plan for the upcoming year:

S	M	A	R	T
Specific	**Measurable**	**Attainable**	**Relevant**	**Timely**
• What am I trying to do?	• How will I measure progress?	• Do I have necessary resources and skills to accomplish goal?	• Why is this important?	• When will I achieve this goal?

S	Implement and perform a daily clinical necessity assessment protocol for the removal of central lines with a 90% compliance rate within the next three months.
M	Compliance will be measured through documentation in patient charts and periodic audits.
A	Provide education and training on the criteria for central line removal and the importance of daily clinical necessity assessments.
R	Daily clinical necessity assessments for central line removal are crucial for preventing complications associated with unnecessary lines and promoting patient safety.
T	Achieve a 90% compliance rate with the daily clinical necessity assessment protocol for central line removal within the next three months.

IP Role in Risk Assessment & Program Plan

Performance Monitoring & Evaluation

- Review the risk assessment results and IPC program plan from the prior year
- Perform annual and as needed risk assessment
- Update the IPC Program Plan annually and as needed to appropriately reflect program practice
- Continuously monitor the effectiveness of the IPC Program Plan
- Monitor goals and strategies throughout the year and adjust as needed

Communication & Collaboration

- Lead the risk assessment process, including organizing teams, facilitating meetings, and guiding the assessment activities
- Present results of risk assessment to leadership and necessary committees and allow for feedback
- Collaborate with necessary stakeholders while drafting the IPC Program Plan (e.g., Occupational Health)
- Present the IPC Program Plan to facility leadership and necessary committees once finalized

Innovation & Improvement

- Identify goals and include in the annual IPC plan
- Continuously monitor for effectiveness and update as needed throughout the year

Risk Assessment & Program Planning
Questions to Consider

1. **What were the results of your last annual risk assessment?**
2. **What were the highest priority risks?**
3. **What goals were identified for the facility?**
4. **What was assessed in the latest risk assessment?**
5. **Is anything missing that you believe needs to be assessed?** *(e.g., new services or procedures, new target populations)*
6. **How was risk calculated on your last assessment?**
7. **Is anything missing that you believe needs to be assessed?**
8. **Have recent changes to regulations or accreditation standards been considered?**
9. **When does the next Risk Assessment and Program Plan need to occur?** *(this is typically performed annually)*

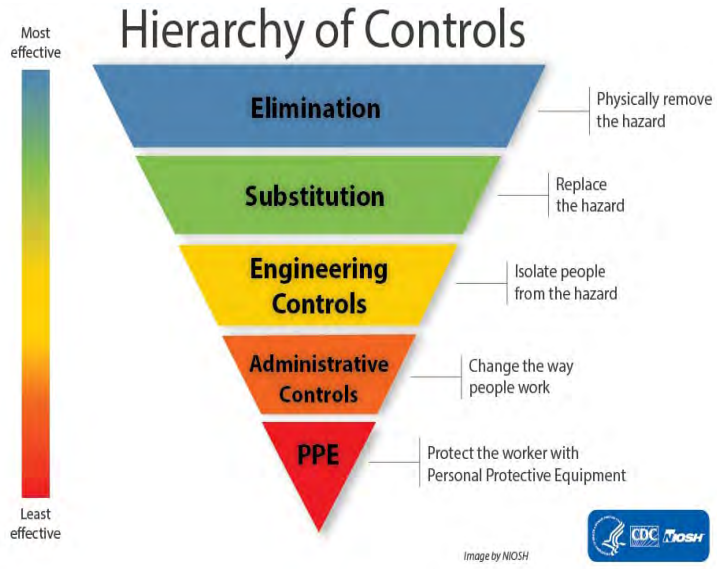
Notes

Additional Notes

Notes

Hierarchy of Controls[3]

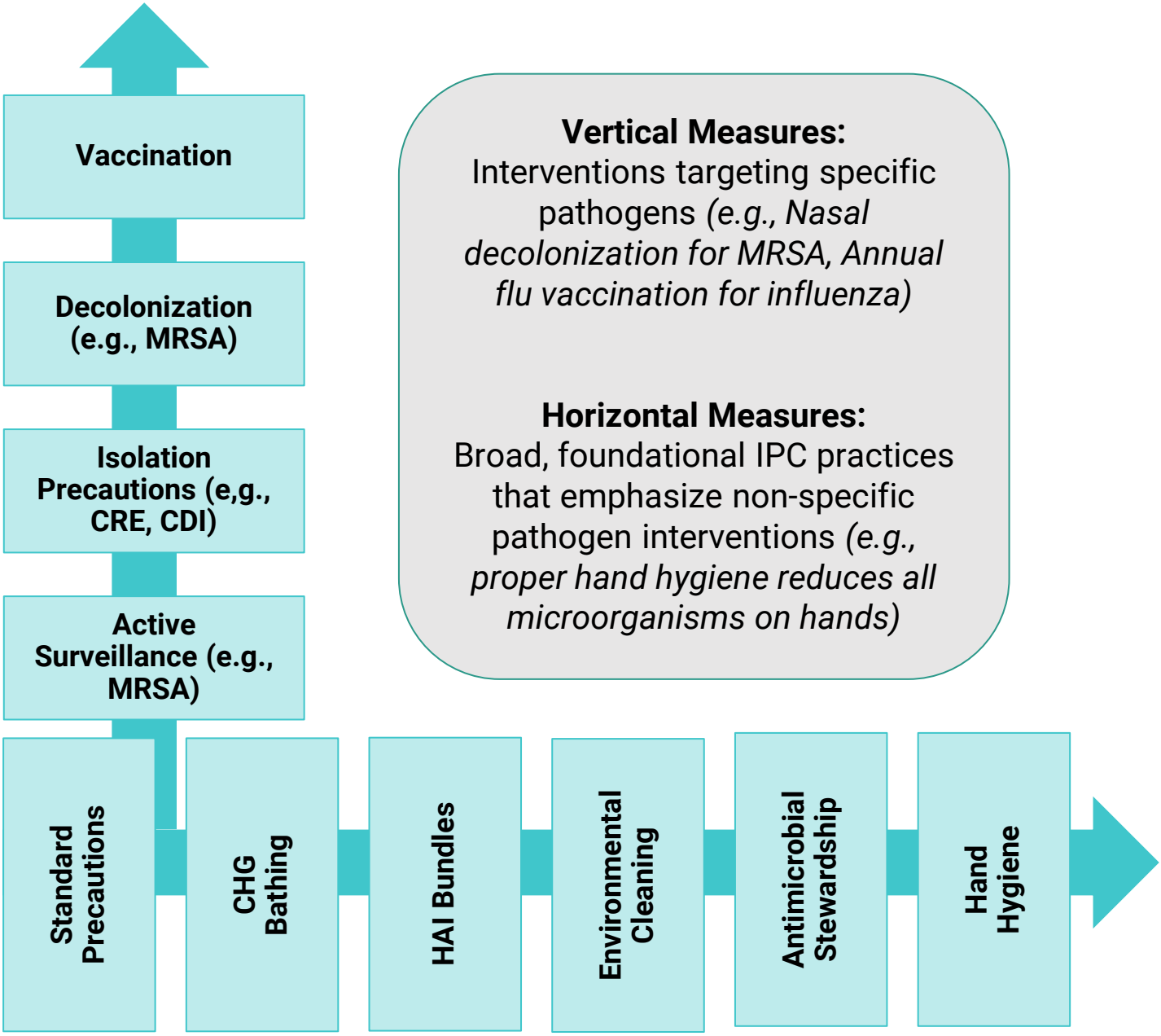
The Hierarchy of Controls refers to the preferred order of actions to protect employees and control hazards in the workplace. The hierarchy of controls identifies a preferred order of actions to best control hazardous workplace exposures. Elimination, substitution, and engineering controls are more effective because they control exposures without significant human interaction. Administrative controls and personal protective equipment can also be effective at reducing workers' exposures to hazards.



Control	Example 1: Sharps/ Needles	Example 2: Aerosol-Generating Procedures (AGP)
Elimination: Physically remove the hazard	Remove devices without safety features from the facility	Discontinue elective AGPs
Substitution: Replace the hazard or utilize safer alternatives	Replace injectable medication with oral medication substitute	Utilize alterative devices that decrease aerosols *(e.g., Meter-dose inhaler vs. nebulizer)*
Engineering Control: Reduce or prevent the hazard	Utilize needle with automatic safety mechanisms	Utilizing airborne isolation rooms and/or HEPA filtration during AGPs
Administrative Controls: Establish work practices that reduce duration, frequency, or intensity of hazard exposure	Establish neutral zone in procedural areas to decrease risk of injury and exposure	Implement standard operating procedures for AGPs and airborne precautions
Personal Protective Equipment (PPE): Equipment worn to minimize exposure to hazards	Utilize puncture resistant gloves	Use respirators during AGPs

Infection Prevention and Control Measures

Infection prevention measures are strategies implemented to minimize the spread of infectious agents within healthcare settings. These measures are typically categorized into vertical and horizontal measures.[4] By integrating both types of measures, healthcare facilities can achieve more effective and sustainable infection prevention outcomes.



Bloodborne Pathogens and Exposure Control Plan

Bloodborne pathogens (BBP) are infectious viruses (and some bacteria) found in blood that can cause disease.[5] Common BBPs are hepatitis B (HBV), hepatitis C (HCV), and human immunodeficiency virus (HIV). A BBP exposure control plan is a regulatory requirement from the Occupational Safety and Health Administration (OSHA). The BBP standard (29 CFR 1910.1030) prescribes safeguards to protect workers against health hazards related to bloodborne pathogens to protect employees. All healthcare facilities are required to have a BBP exposure control plan in place.[5]

BBPs are transmitted when blood or other potentially infectious material (OPIM) contact a worker's mouth, nose, eyes, broken skin, or mucous membranes.

A number of interventions, such as work practice or engineering controls, can be implemented as part of a BBP Exposure Control Plan to help keep healthcare workers safe.[6]

Key Components of an Exposure Control Plan[5]

Per OSHA, employers must establish an exposure control plan to protect its workers. Your BBP and Exposure Control Plan must be readily accessible to staff and be reviewed and updated at least annually (and as needed).

For more detailed information, refer to OSHA and consider taking an OSHA compliance course.

Exposure Determination

- Identify job classifications and tasks that may expose employees to blood or OPIM

Implementation of Controls

- Includes: Standard Precautions, Engineering & Work Practice Controls, Personal Protective Equipment (PPE) and Housekeeping

Free Hepatitis B Vaccination

- Offer the hepatitis B vaccine to all employees who may be exposed to BBPs at no cost

Post-Exposure Evaluation & Follow Up

- Offer post-exposure evaluation & post-exposure prophylaxis if necessary

Hazard Communications to Employees

- Education & training of hazards and provide resources *(e.g., signs and labels*) to communicate hazards

Recordkeeping

- To include compliance monitoring and annual plan documentation and updates

Evaluation

- Conduct a root cause analysis to evaluate circumstances surrounding exposure incidents

IP Role in Bloodborne Pathogen and Exposure Control

Policy & Procedure

- Review the annual exposure control plan to ensure it accurately addresses risk and IPC practices in place
  - *It is common for the IPC Program to own the BBP Exposure Control Policy, Occupational Health may also share ownership*

Education & Training

- Ensure that annual BBP education and training meets the needs of employees and highlights gaps from data collected throughout the year
  - *e.g., needle sticks*

Performance Monitoring & Evaluation

- Monitor for IPC practices and share results with frontline staff
  - *e.g., PPE compliance with eyewear, injection safety*
- Monitor for exposure events and the process gaps that may have contributed to the event

Communication & Collaboration

- Partner with Occupational Health to develop policies, procedures and plans

Product Selection & Evaluation

- Evaluate opportunities for safer materials and processes
  - *e.g., safer sharps, PPE, disposal materials*

BBP Questions to Consider

1. **Who participated in the Exposure Control Plan Review?**
2. **Are frontline staff included?**
3. **When was the Exposure Control Plan last updated?**
4. **When is it due to be updated again?**
5. **What is the facility process for employees to report an exposure?**
6. **What metrics for monitoring adherence to BBP standards are performed?**

Notes

Additional Notes

Notes

Hand Hygiene

Hand Hygiene refers to keeping skin and nails of hands healthy and clean.[7,8] Proper hand hygiene is a method to decrease disease transmission by substantially reducing the number of pathogens on the hands. The hands of healthcare workers are a significant cause of transmission in healthcare facilities and a core focus of IPC programs.[9] Robust IPC programs develop and execute organized plans to monitor for hand hygiene.

Hand Hygiene Methods[7]

Alcohol Based Hand Rub (ABHR)

- Easily accessible and effective
- Preferred method in most clinical situations
- Use when hands are not visibly soiled
- Apply to hands, cover all surfaces, rub until dry

Technique:

- Follow manufacturer instruction for use
- Typically, apply recommended amount of ABHR and rub touching all surfaces of the hands until completely dry

Soap & Water

- Use when hands are visibly soiled
- Use after exposure to certain pathogens (*e.g., C diff or norovirus during outbreaks*)

Technique:

- Wet hands
- Apply recommended amount of soap and lather touching all surfaces of the hands
- Wash for at least 20 seconds covering all surfaces
- Dry with a clean towel
- If necessary, turn off water with towel to not contaminate hands

Key Principles of Hand Hygiene[7,8,9]

Perform hand hygiene in accordance with CDC recommendations

- For an appropriate amount of time (at least 20 seconds) and with enough product and friction to adequately clean hands
- Use an alcohol-based hand rub or soap and water for appropriate clinical indications
- Use soap and water specifically when hands are visibly soiled

Ensure supplies for hand hygiene are readily accessible in all areas where patient care is delivered

Implement monitoring programs and provide feedback to staff to improve compliance and promote a culture of safety around hand hygiene

Address artificial nails and fingernail care as they are a common challenge for hand hygiene programs in healthcare facilities

- Perform a risk assessment for the facility regarding gel, shellac, nail polish, etc. Generally, artificial nails are prohibited in high-risk areas

When to perform hand hygiene[7]

- **Immediately before touching a patient**
- **Before performing an aseptic task**
- **Before moving from work on a soiled body site to a clean body site**
- **After touching a patient or the patient's immediate environment**
- **After contact with blood, body fluids, or contaminated surfaces**
- **Immediately after glove removal**

IP Role in Hand Hygiene

Policy & Procedure

- Develop and update hand hygiene policies to reflect practices and procedures within the facility
- Utilize national guidelines, regulatory requirements, and best practices to inform policy content

Education & Training

- Partner with clinical personnel to train and educate staff on proper hand hygiene practices

Performance Monitoring & Evaluation

- Perform regular audits of hand hygiene practices
- Partner with units to independently audit their areas
- Share results with frontline staff

Communication & Collaboration

- Develop a multidisciplinary team to ensure that the facility has a hand hygiene program
  - *e.g., nursing, physicians, leadership, ancillary staff*

Innovation & Improvement

- Review options for utilizing innovative technologies, software or solutions to improve the hand hygiene program
- Ensure there are adequate hand hygiene stations in appropriate locations with sufficient stock

Product Selection & Evaluation

- Ensure that adequate, hospital-grade hand hygiene products are available at your facility
  - *(ABHR with at least 60% alcohol)*
- Investigate hospital approved lotions for staff who may have skin integrity concerns
- Look at emollient, CHG compliant, latex compatible, moisturizers

Hand Hygiene Questions to Consider

1. **What hand hygiene products are used at your facility?**
2. **Are there sufficient hand hygiene stations on the units?**
3. **Is there sufficient stock of hand hygiene products available on the units?**
4. **How does hand hygiene education occur?**
5. **Does the hospital have an approved lotion for staff and/or patients?**
6. **How does the facility monitor adherence to hand hygiene practices?**
7. **Does Occupational Health have a protocol for staff who have allergies or sensitivities to hospital grade products?**

Notes

Additional Notes

Notes

Week 2 Review

Internal Policies:

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ Infection Control Risk Assessment			
❑ Bloodborne Pathogens and Exposure Control Plan			
❑ Hand Hygiene			

Considerations for Week 2

- ❑ **If you did not view the webinar from Week 1, consider watching it this week**
  - ❑ Fundamentals of a Successful IPC Program
- ❑ **Meet with Quality Director**
  - ❑ Use this link to access Conversation Starter Templates to aid in this conversation: https://innovateipc.org/ipc-support-center/education-and-resources
- ❑ **Consider completing an OSHA BBP training course**

For additional tools and resources visit: https://Innovateipc.org

Week 2 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics.

Primary Resources for Week 2

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
Hierarchy of Controls	CDC/ NIOSH	Guideline
Guideline for Hand Hygiene in Healthcare Settings	CDC	Guideline
1910.1030 - Bloodborne pathogens. | Occupational Safety and Health Administration	OSHA	Regulatory
Bloodborne Pathogens - Overview | Occupational Safety and Health Administration	OSHA	Regulatory

Week 2 References

1. Holmes, K., McCarty, J., Steinfeld, S. Infection Prevention and Control Programs. The APIC Text. February 21, 2021. Accessed January 14, 2025. https://text.apic.org/toc/overview-of-infection-prevention-programs/infection-prevention-and-control-programs

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4. Abbas, S., Stevens, M., Guide to Infection Control In The Hospital. International Society For Infectious Diseases. April 2018. Accessed January 14, 2025. https://isid.org/wp-content/uploads/2018/07/ISID_InfectionGuide_Chapter14.pdf

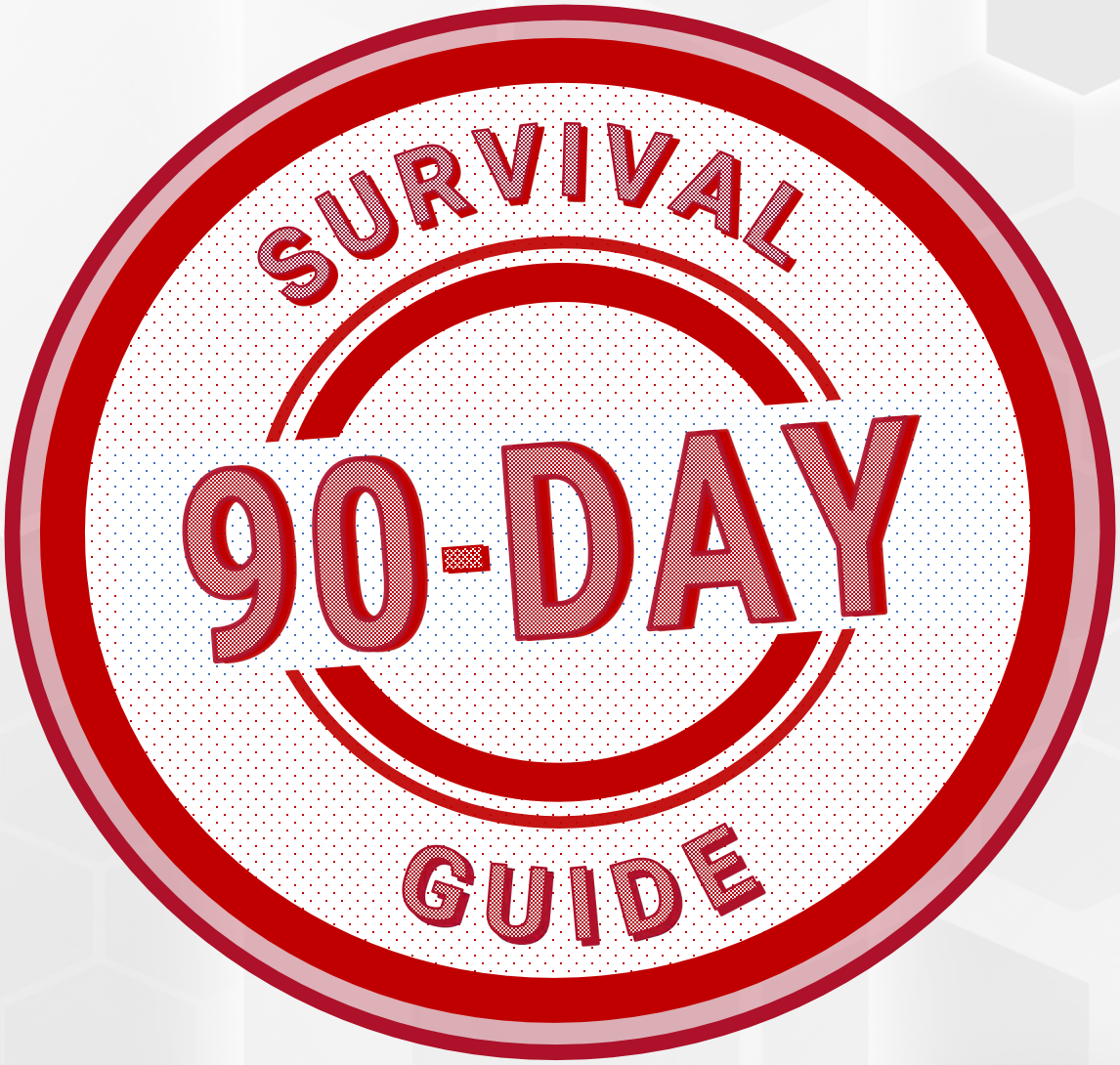
5. 1910 Bloodborne Pathogens. Occupational Safety and Health Administration. Accessed January 14, 2025. 1910.1030 - Bloodborne pathogens. | Occupational Safety and Health Administration

6. Bloodborne Infectious Disease Risk Factors. CDC. April 23, 2024. Accessed January 14, 2025. Bloodborne Infectious Disease Risk Factors | Healthcare Workers | CDC

7. Clinical Safety: Hand Hygiene for Healthcare Workers. CDC. February 27, 2024. Accessed January 14, 2025. Clinical Safety: Hand Hygiene for Healthcare Workers | Clean Hands | CDC

8. Morbidity and Mortality Weekly Report. CDC. October 25, 2002. Accessed January 14, 2025. RR5116-Front Cover.p65

9. CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings. CDC. April 12, 2024. Accessed January 14, 2025.CDC's Core Infection Prevention and Control Practicesfor Safe Healthcare Delivery in All Settings | Infection Control | CDC



The Infection Preventionist's Orientation Workbook

WEEK THREE

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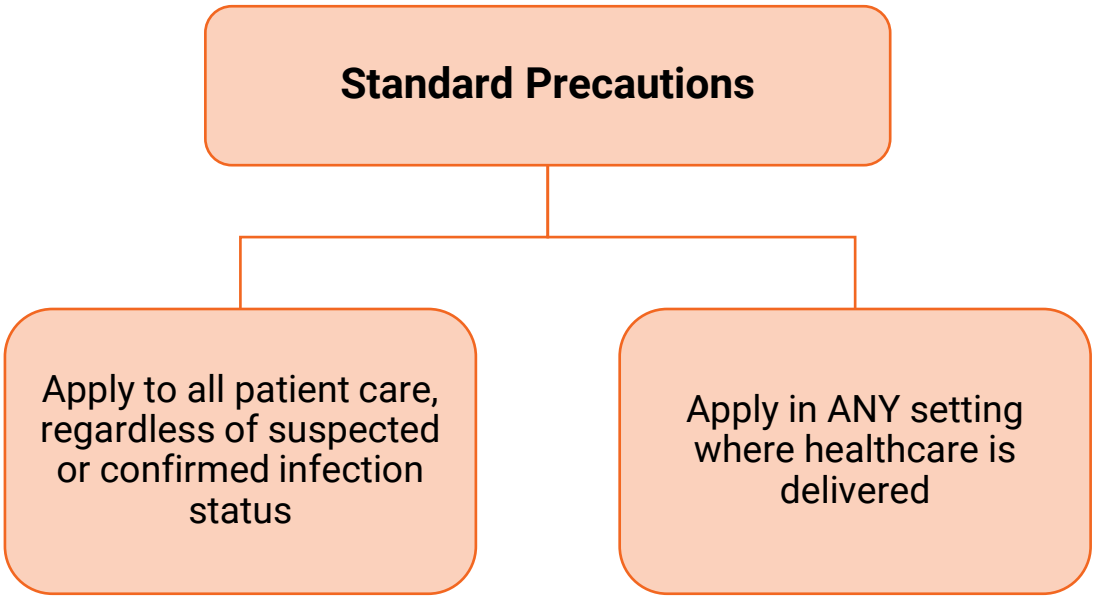
Standard Precautions

Standard Precautions are the first line of defense in IPC practice. In the 1980s, in response to the HIV/AIDS epidemic, the CDC introduced, the now outdated term, Universal Precautions. These precautions focused on preventing bloodborne pathogen transmission. In the 1990s, the CDC expanded the guidelines to include ALL bodily fluids and non-intact skin and implemented the term standard precautions.[1] Standard Precautions now refer to a set of IPC practices used to prevent transmission of diseases that can be acquired by contact with blood, body fluids, non-intact skin (including rashes), and mucous membranes.[2]



Key Principles of Standard Precautions[2]

Standard Precautions apply to all healthcare settings and are applied to all aspects of patient care

Standard Precautions are based on situational risk and implement common sense practices and strategies by healthcare workers

Key components of Standard Precautions include:

- ***Hand hygiene***
  - Perform hand hygiene in accordance with CDC recommendations
  - Ensure hand hygiene supplies are readily available for staff
- ***Use of PPE***
  - Select and use PPE based on the nature of the patient interaction and anticipated exposure risk
- ***Respiratory hygiene and cough etiquette***
  - Utilize protocols and PPE to implement source control of potentially infectious persons at the point of entry to the facility
  - Implement measures to contain respiratory secretions, such as covering coughs and sneezes with tissues or elbows, using surgical masks for symptomatic patients, and practicing physical distancing in waiting areas
- ***Patient placement***
  - Determine patient placement with consideration to disease transmission and with the goal to minimize risk
- ***Environmental cleaning and disinfection***
  - Perform routine and methodical cleaning and disinfection of the environment to reduce the risk of disease transmission
  - Perform routine and targeted cleaning of environmental surfaces with EPA-registered disinfectants
  - Follow manufacturer's instructions for use for device and disinfecting agent
- ***Device reprocessing***
  - Perform the appropriate reprocessing of reusable medical devices between patients
- ***Injection and medication safety***
  - Follow safe injection practices

IP Role in Standard Precautions

Policy & Procedure

- Develop, review and update Standard Precautions related policies and implement procedures based on the latest guidelines and evidence-based practice

Education & Training

- Ensure education and training on Standard Precautions is sufficient
  - *e.g., hand hygiene, use of PPE, and safe injection practices*
- Partner with education teams to address gaps in training and education

Performance Monitoring & Evaluation

- Regularly monitor and audit compliance with standard precautions
- Collect, analyze and report data on adherence to standard precautions
- Utilize data to identify and recommend areas for improvement
- Ensure IPC practices are in place to appropriately address gaps and risks related to Standard Precautions

Communication & Collaboration

- Work closely with other healthcare professionals to ensure a coordinated approach to standard precautions
- Communicate effectively with all staff levels to reinforce the importance of standard precautions and address any barriers to compliance

Innovation & Improvement

- Continuously seek out and implement new strategies, technologies, and practices that can enhance the effectiveness of standard precautions
- Stay updated on the latest research and incorporate evidence-based practices into infection prevention programs
- Develop and implement strategies to mitigate identified risks and ensure the consistent application of standard precautions

Standard Precautions Questions to Consider

Additional questions regarding Standard Precautions are incorporated throughout the Survival Guide in their respective sections.

1. **Are healthcare workers regularly trained on standard precautions?**
2. **Is compliance monitored and reinforced?**
3. **Are there clear, accessible policies related to standard precautions?**

Notes

Transmission-Based Precautions

Transmission-based precautions (TBP) refers to specialized IPC measures used in healthcare settings to prevent the spread of infectious agents.[2] They are the second tier of basic IPC practices that should be used in addition to Standard Precautions.[1] These precautions provide targeted protection against known pathogens and colonization, or suspected pathogens based on symptomology and exposure history of the patient, which require further investigation. Understanding and implementing these measures effectively is essential for IPC programs to mitigate the risk of HAIs and ensure patient and staff safety.

Category	Mode of Transmission	Examples	PPE Needed
Contact	Organisms that are spread by contact with the patient or the patients' environment[2]	ESBL, MDRO, uncontained drainage, unknown rash	✓ Gown ✓ Gloves ✓ Dedicated equipment ✓ Patient placement
Droplet	Organisms that are spread by large respiratory droplets through coughing, sneezing, talking, vomiting or heavy breathing[2]	Influenza, Rhinovirus, Pertussis, Mumps	✓ Mask ✓ Patient placement
Airborne	Organisms that are very small particles and remain viable or suspended in the air over long distances[2]	Tuberculosis, Varicella, measles, COVID-19	✓ N-95 or PAPR ✓ Airborne Infection Isolation Room
For a full list of disease isolation recommendations, visit: https://www.cdc.gov/infection-control/hcp/isolation-precautions/appendix-a-type-duration.html			

Key Principles of Transmission-Based Precautions[2]

Transmission-based precautions must be tailored to the specific mode of transmission of the infectious agent

- *e.g., a patient who presents with a diarrheal illness should be placed into contact precautions while the investigation of what is causing the symptoms is identified*

The Isolation types can be used individually or in combination based on the pathogen

- *e.g., a patient who presents with disseminated herpes zoster with lesions would require both Airborne and Contact isolation*

Components of Transmission-based Precautions:

- Proper use of PPE
- Source control
- Limiting transport and movement of patients
- Patient placement *(e.g., developing criteria for placing patients in single rooms or cohorting)*
- Utilizing airborne infection isolation rooms (AIIR) for airborne infections
- Perform adequate environmental cleaning and disinfection
  - *Use EPA-registered hospital disinfectants and review effectiveness for special pathogens (e.g., C.difficile, Candida auris)*
- Develop a process to communicate the need for transmission-based precautions
  - *Signage, alerts, transfer forms, verbal report, admission assessments, internal transport processes, etc.*

IP Pro Tip:

Some facilities, such as Long-term care facilities implement **enhanced-barrier precautions** as an intervention during high-contact activities (e.g., resident bathing) to help stop MDRO transmission.

Discontinuation of transmission-based precautions is based on characteristics of the pathogen of concern and facility protocols.

IP Role in Transmission-Based Precautions

Policy & Procedure

- Develop and update policies and implement procedures for TBPs based on the latest guidelines and evidence-based practice

Education & Training

- Ensure training is sufficient for healthcare workers on TBPs
- Partner with education teams to address gaps in training and education
- Partner with education teams to ensure "Just In Time Training" takes place when emerging pathogens occur

Performance Monitoring & Evaluation

- Monitor and audit compliance with TBP
  - *Ensure unrestricted access to PPE (easily accessible at point of use)*
  - *Ensure proper isolation and PPE use while TBPs are active*
  - *Verify appropriate discontinuation of TBPs*
  - *Validate proper room and device cleaning and disinfection*
- Review the incidence of infections and organisms requiring TBPs in the facility
- Utilize audit data to identify and recommend areas for improvement
- Ensure IPC practices are in place to appropriately address TPBs gaps and risks

Communication & Collaboration

- Work closely with other departments to ensure a coordinated approach to TBPs
- Ensure processes for communicating isolation needs to healthcare workers, EVS etc.
- Help specialty departments and services to implement TBPs in their unique settings

Innovation & Improvement

- Identify and implement new strategies, technologies and practices that can enhance the utilization of TBPs
- Stay up to date on circulating pathogens in the local and global scale
- Develop and implement strategies to mitigate identified risk and ensure the consistent application of TBPs

Transmission-Based Precautions Questions to Consider

1. **What types of transmission-based precautions are used at your facility?**

2. **Are there special isolation types used?** *(e.g., Enhanced Contact Precautions, Enteric)*

3. **How is isolation information communicated to frontline healthcare personnel?** ***(e.g., infection/isolation flag in the patient chart, sign outside of the room)***

4. **How is the isolation information communicated to Environmental Services?**

5. **Where is isolation information documented?** *(e.g., EMR Chart flagging)*

Additional questions on the next page →

Notes

Transmission-Based Precautions Questions to Consider

6. **How is adherence to transmission-based precautions monitored?**

7. **How do receiving departments receive information about the TBP in-use?** (*e.g., Operating Room, Radiology, PT/OT*)

8. **How are appropriate precautions re-initiated on return visits to the healthcare facility?**

9. **Does isolation require an order to initiate or discontinue precautions?**

10. **What is the facility protocol for discontinuation of Transmission-based precautions?**

Notes

Additional Notes

Notes

Personal Protective Equipment

Personal Protective Equipment (PPE) is equipment and protective clothing used to minimize exposure to hazards.[4] In healthcare, PPE primarily protects healthcare workers from biological agents and can be effective barriers from transmitting infections. PPE includes gloves, gowns, face masks, respirators, goggles, and face shields. PPE is used in both standard and transmission-based precautions and the use of PPE should be based on the nature of patient interaction and the potential for exposure to infectious materials.[5]

TYPE OF PPE	USE[5]
Gloves	Protects hands and allows for efficient removal of microorganisms from hands when paired with hand hygiene
Gowns	Protects skin and clothing and is used as part of standard and contact precautions
Face Mask	Protects mucous membranes of mouth and nose and is used in procedures and in droplet precautions. Face masks are also a useful tool for source control of symptomatic patients in the healthcare facility
Respirator	Prevents inhalation of infectious materials and is used in airborne precautions and in aerosol generating procedures
Protective Eyewear	Protects eyes (eyeglasses do not constitute protective eyewear)
Face Shield	Protects mucous membranes of face, mouth, nose, and eyes

Pro IP Tip

While PPE is heavily utilized for IPC practice, it is also helpful in scenarios where workers may encounter hazardous materials (hazmat).

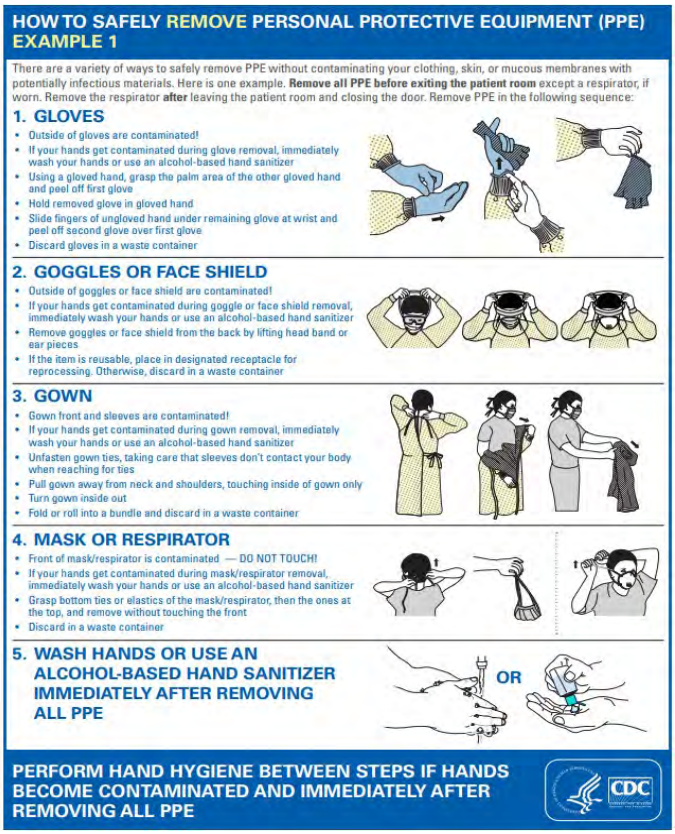
Key Principles of PPE [5]

PPE selection is based route of transmission and the nature of the patient interaction

PPE is used to protect the wearer from exposure

Donning and doffing

- The order of putting on (donning) PPE influences how PPE should be safely removed (doffed) to avoid contamination
- Hand hygiene should be performed prior to donning PPE
- Don PPE prior to contact with the patient (e.g., prior to entering the patient room)
- Doff PPE prior to exiting the patient care environment
    - Methodical doffing of PPE is important to minimize the risk of exposure to the healthcare worker
    - Respirators are an exception to this rule and should be doffed after exiting the patient care environment
- After doffing immediately perform hand hygiene prior to moving on to other tasks



Click the images to go to the CDC website

IP Role in PPE

Policy & Procedure

- Develop and update policies and implement procedures for proper PPE use based on the latest guidelines and evidence-based practice

Education & Training

- Partner with education teams to identify and address gaps in training and education
- Ensure training is sufficient for healthcare workers on PPE use
- Partner with education teams for *Just In Time Training* when emerging pathogens occur

Performance Monitoring & Evaluation

- Monitor and audit compliance with PPE and adherence to standard and transmission–based precautions (TBP)
  - *Ensure PPE is accessible at point of use and stock is sufficient*
  - *Confirm proper isolation and PPE use while TBPs are active*
  - *Verify appropriate discontinuation of TBP*
  - *Validate proper room and device cleaning and disinfection*
- Utilize audit data to identify and recommend areas for improvement
- Ensure IP practices are in place to effectively address identified gaps and risks related to PPE usage

Communication & Collaboration

- Provide immediate coaching when PPE gaps are observed
- Communicate trends, gaps in practice, and opportunities for improvement to leadership
- Collaborate with teams and units to address opportunities and mitigate identified gaps

Product Selection & Evaluation

- Stay informed of new technologies related to PPE and their application in the facility
- Evaluate PPE for the suitability of different types of PPE for specific uses within the facility
- Partner with supply management to ensure adequate backstock of PPE, particularly during potential product interruption *(e.g., pandemics)*

PPE Questions to Consider

1. **What types of PPE are used at your facility?**
2. **Where is PPE located in patient care areas?**
3. **Are all types of PPE in various sizes available to staff at point of use?**
4. **How is PPE training and education performed at the facility?**
5. **What respirators are in use at your facility?**

Additional questions on the next page →

Notes

PPE Questions to Consider

6. **How do staff access respirators at the facility?**

7. **How does the facility monitor for compliance to PPE use and adherence?**

8. **Are there systems to remind providers to use PPE correctly?** *(e.g., signage for isolation rooms)*

9. **Are clear roles established to restock PPE in patient care areas, so it is readily available?**

10. **What measures are in place to address PPE shortages?**

Notes

Additional Notes

Notes

Week 3 Review

Internal Policies

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ Standard Precautions			
❑ Transmission-Based Precautions			
❑ Personal Protective Equipment			
❑ Disease-specific SOPs ❑ *e.g., C.diff, Norovirus, Prion Disease, Candida auris*			

Considerations for Week 3

- ❑ **Meet with Nursing Unit Leaders or Managers**
  - ❑ Use this link to access Conversation Starter Templates to aid in this conversation: https://innovateipc.org/ipc-support-center/education-and-resources

- ❑ **To enhance your knowledge, review the CDC/STRIVE Infection Control Training**
  - ❑ The Basics of Standard Precautions
  - ❑ Transmission-Based Precautions
  - ❑ Personal Protective Equipment Coaching and Training Frontline Healthcare Professionals

For additional tools and resources visit: https://Innovateipc.org

Week 3 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics.

Primary Resources for Week 3

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings	CDC	Guideline
Appendix A: Type and Duration of Precautions Recommended for Selected Infections and Conditions | Infection Control	CDC	Guideline
About National Notifiable Diseases Surveillance System | National Notifiable Diseases Surveillance System (NNDSS) | CDC	CDC	Resource
1910.134 - Respiratory Protection | Occupational Safety and Health Administration	OSHA	Regulatory
1910.192. Personal Protective Equipment. | Occupational Safety and Health Administration	OSHA	Regulatory
1910.1030 - Bloodborne pathogens. | Occupational Safety and Health Administration	OSHA	Regulatory
Sequence for donning & doffing of PPE	CDC	Resource

Week Three References

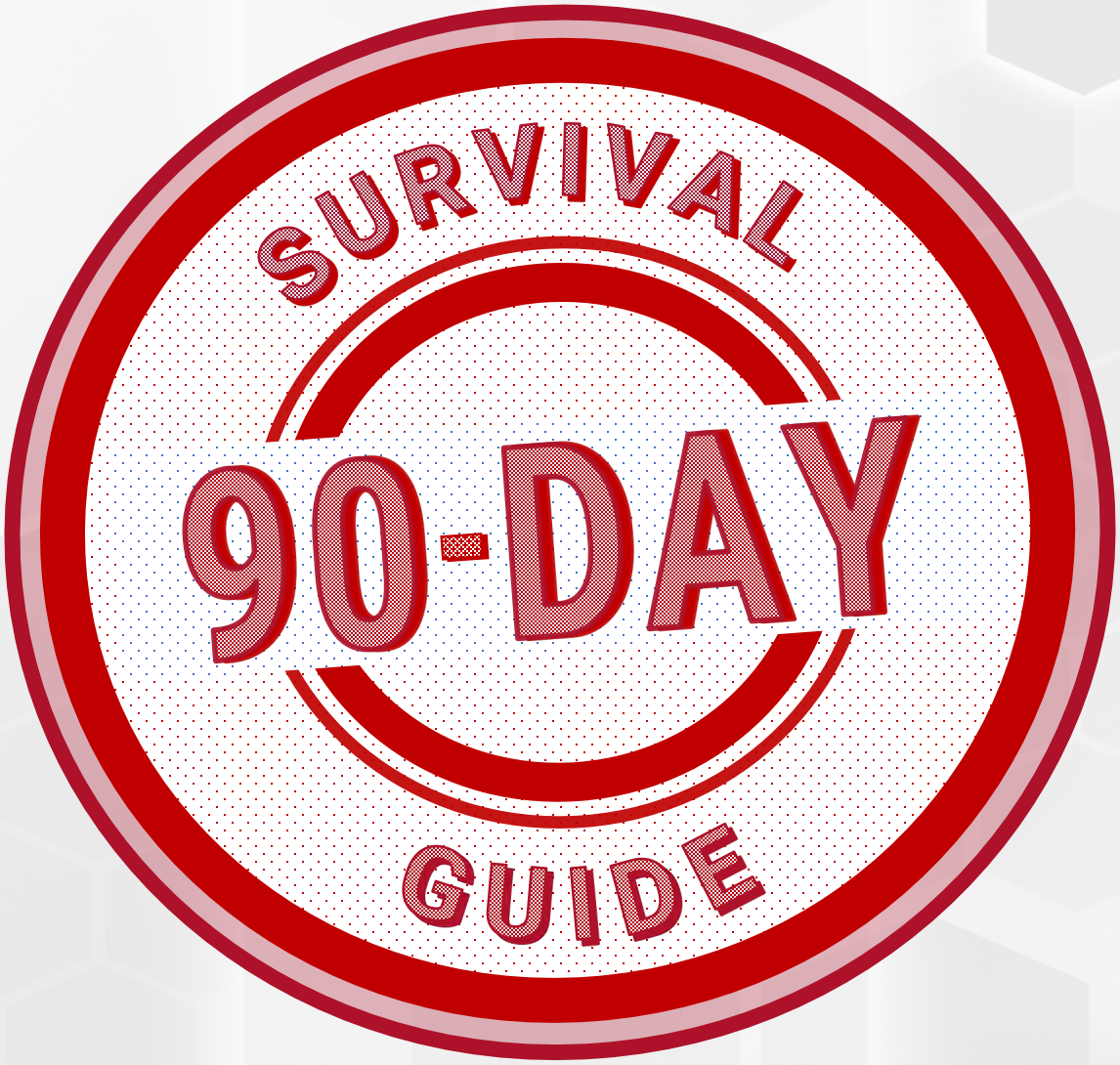
1. Appendix A: Table 1. History of Guidelines for Isolation Precautions in Hospitals. CDC. Updated November 27, 2023. Accessed January 14, 2025. Appendix A: Table 1. History of Guidelines for Isolation Precautions in Hospitals | Infection Control | CDC

2. 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. CDC. Updated September, 2024. Accessed January 14, 2025. Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007)

3. National Notifiable Diseases Surveillance System. CDC. Updated June 26, 2023. Accessed January 14, 2025. National Notifiable Diseases Surveillance System (NNDSS) - Health, United States

4. Personal Protective Equipment. Occupational Safety and Health Administration. Accessed January 13, 2025. Personal Protective Equipment - Overview | Occupational Safety and Health Administration

5. Siegel J. D., Rhinehart, E., Jackson, M., Chiarello, L..,2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Centers for Disease and Control and Prevention. Updated September, 2024. Accessed January 14, 2025. Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007)



The Infection Preventionist's Orientation Workbook

WEEK FOUR

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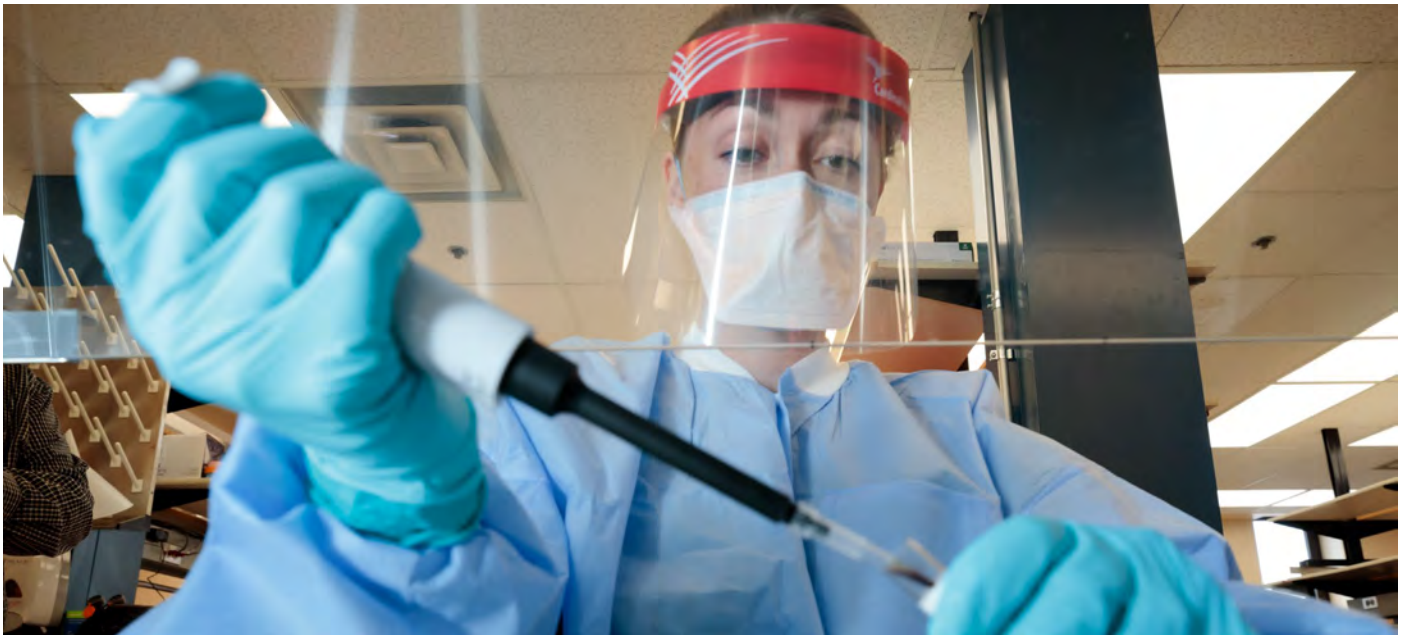
Required Notification

Notifiable diseases are of public interest because of their infectious spread and severity. Healthcare facilities are required to report certain notifiable conditions and diseases to public health authorities. The goal of notifiable disease reporting is to monitor, control and prevent the spread of disease.[1] Notifying the correct public health personnel helps in early detection and timely intervention.

Locate the following documents

- ❑ The National Notifiable Conditions list
- ❑ Your state notifiable conditions list. *Often found on the state's department of health website*
- ❑ Your facility's protocol for reporting notifiable conditions to public health



IP Role in Required Notification

Policy & Procedure

- Partner in policy and protocol development with other relevant departments to address required notification procedures

Education & Training

- Partner in educating healthcare staff about their role in reporting notifiable diseases and the importance of adhering to established protocols
- Partner with education teams to address gaps in training and education

Surveillance & Reporting

- Monitor the incidence of notifiable pathogens and conditions
  - *Internally (within the facility)*
  - *Externally (in the community)*

Collaboration & Communication

- Coordinate with clinical staff, laboratory personnel, and public health authorities to ensure accurate and timely reporting

Required Notification Questions to Consider

1. **What is the process for reporting notifiable diseases at your facility?**
2. **Who is responsible for notifying public health?**
3. **Does a computer or surveillance system automatically report notifiable conditions?**
4. **What information is included in the notification?** *(e.g., patient name, case details, known contacts)*
5. **Are there any differences between your state notifiable list and the national notifiable list?**
6. **How is the IPC program involved in notifiable conditions at your facility?**

Notes

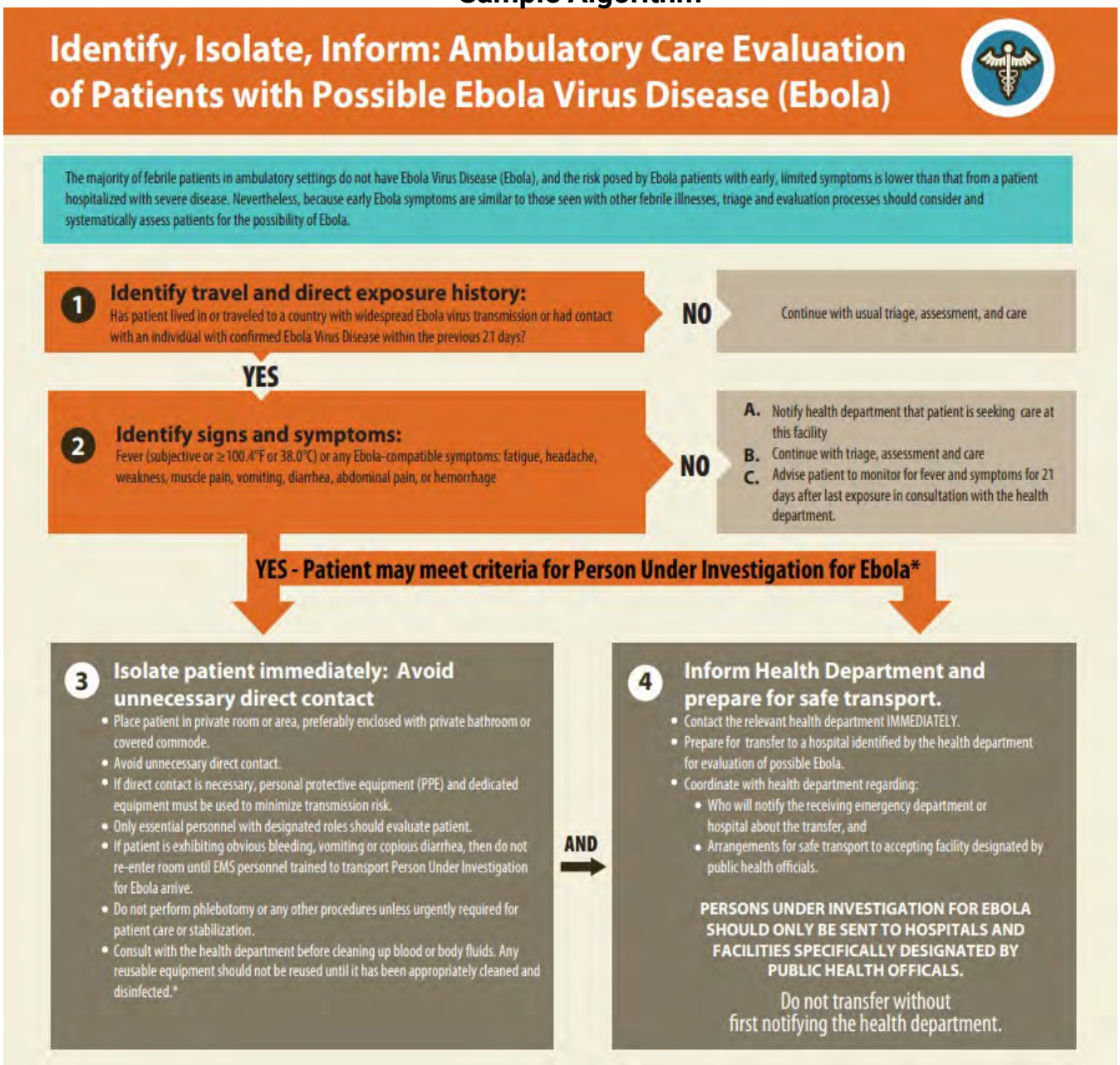
Additional Notes

Notes

Identify, Isolate, Inform

Identify, Isolate, and Inform is a framework of actions developed to control the spread of high consequence pathogens of concern (HCID) such as Ebola Virus Disease (EVD) and Middle Eastern respiratory virus (MERS).[4] Implementation of an identify, isolate, inform framework is considered a best practice for the assessment, management, and placement of patients under investigation for an HCID. Your facility must have a process to identify potential infectious persons and implement management strategies.[5]

Sample Algorithm[2]



Key Principles of Identify, Isolate, Inform[4]

IPs should refer to their local or state public health departments to understand protocols and management for HCID within their state/jurisdiction.

Identify, isolate, inform components include:

- ***Identify***
  - Assess for signs and symptoms, travel history, and exposure risk (*e.g., travel to endemic or outbreak areas, contact with infected individuals)*
- ***Isolate***
  - If assessment indicates a transmissible pathogen may be present, separate the patient from others and implement standard and transmission-based precautions based on the nature of patient interaction and patient symptoms
- ***Inform***
  - Notify key healthcare staff and public health authorities.
  - Follow established communication pathways
- ***Documentation***
  - A member of the healthcare team documents the case details including a log of all healthcare staff entering the care space
  - If confirmed, details about patient condition, and known contacts should be communicated with public health
- ***Follow-Up***
  - Public health authorities may conduct their own investigation to track the spread of disease, identify the source of infection, and perform larger-scale contact tracing (*this step is essential for identifying additional cases and preventing further spread)*
  - If a healthcare worker has been exposed to a potentially infectious patient, the IPC program should collaborate with Occupational Health to:
    - Define the exposure
    - Assess the risk
    - Coordinate follow-up actions *(e.g., monitoring, interventions)*

IP Pro Tip

While specifically created for HCIDs, the **Identify, Isolate, Inform** framework can be applied to all transmissible pathogens and facilitates rapid isolation of suspected patients to decrease the risk of disease transmission in a facility

IP Role in Identify, Isolate, Inform

Policy & Procedure

- Partner and collaborate with relevant departments to develop and implement policies and protocols to address ***Identify, Isolate, Inform*** procedures

Education & Training

- Stay informed on current and emerging risks, including local and global pathogens of concern
- Register for Health Alert Network (HAN) for your state and other relevant notification systems
- Understand the rapid identification, isolation and notification processes
- Ensure staff have up-to-date training on relevant pathogens and infection control measures

Surveillance & Reporting

- Understand the process for identifying transmissible illness in your facility
  - *Clarify who is responsible for reporting cases*
  - *Clarify whom they should report to*

Communication & Collaboration

- Collaborate with departments to implement transmission-based precautions, especially at high-risk entry points
  - *e.g., Emergency Department*
- Partner with hospital access and patient entry areas to the facility
  - *e.g., front desks, Emergency Department*
- Ensure clear internal and external communication pathways for timely reporting and coordination

Identify, Isolate, Inform Questions to Consider

1. **Where do patients typically enter the facility?**

2. **How are patient entry areas identifying patients at risk for a transmissible illness?** *(e.g., travel history, recent exposure, symptoms)*

3. **What is the process for internal communication when a patient is suspected of having a transmissible illness?** *(e.g., phone call, chart alerts, isolation signage)*

4. **Are patients flagged in the medical record if they are under investigation or suspected of having a transmissible pathogen?**

5. **How is external communication with public health authorities handled?**

6. **When should public health be contacted and under what circumstances?** *(e.g., specific pathogen, outbreak)*

7. **At what point in the patient care pathway is the IPC program notified about a potential high-consequence pathogen patient under investigation (PUI)?**

Notes

Additional Notes

Notes

Injection Safety in Healthcare Settings

Injected medications are widely used in healthcare for treatment and diagnostic purposes. As part of Standard Precautions, proper injection safety practices are essential in protecting both patients and healthcare workers from adverse events, including infections[5]. Injection safety became a priority due to significant patient safety concerns, including outbreaks caused by unsafe injection practices across various healthcare settings.[2,6,8] Implementing appropriate injection practices is crucial to prevent harm, reduce the risk of infections, and ensure the safety of both patients and healthcare providers.

Goals of Injection Safety

Notable Outbreaks

Nebraska Hepatitis C Outbreak (2002)[6]: Healthcare-transmitted outbreak of Hepatitis C at an oncology clinic in Nebraska. 857 patients were exposed, 99 contracted the virus

Nevada Hepatitis C Outbreak (2008)[7]: Unsafe injection practices at endoscopy clinics led to one of the largest healthcare-related outbreaks in U.S. history, affecting over 63,000 patients

New Jersey Surgical Center (2018)[8]: Over 3,700 patients were advised to get tested for HIV, hepatitis B, and hepatitis C due to breaches in injection safety

Unsafe injections cause millions of infections worldwide annually, highlighting the need for strict adherence to safe practices.[2]

Key Principles of Injection Safety[6]

Unsafe injection practices and opportunities for contamination can occur during medication preparation, administration, and sharps disposal

Always use aseptic technique when preparing and administering injectables

Properly handle needles to reduce the risk of sharps injuries

- Facilities should assess and provide safe devices to protect healthcare workers

Always use a new sterile syringe and needle for each patient

- Never administer medication from the same syringe to more than one patient, even if the needle is changed or you are injecting through IV tubing
- Never use a syringe or needle that has been used on another patient to enter a medication vial, bag, or bottle

Use single-dose medications for a single patient only.

- Do not use medications intended for single use, such as single-dose vials, ampoules, or IV solution bags, for more than one patient

Do not utilize common source solutions (*e.g., flushes*) for multiple patients

When possible, dedicate multidose vials to a single patient

- Limit the use of multi-dose vials
- Reused multi-dose vials should be stored and accessed in a designated clean medication preparation area, away from immediate patient treatment areas

Properly dispose of sharps into appropriately labeled and secured sharps containers

Follow proper blood glucose monitoring practices

Wear a surgical mask when performing lumbar punctures

Healthcare facilities must monitor for drug diversion as part of injection safety practices

IP Role in Injection Safety

Policy & Procedure	• Develop, review, and update injection safety policies and procedures based on the latest guidelines and evidence-based practice
Education & Training	• Ensure healthcare workers receive adequate education and training on safe injection practices • Partner with education teams to identify and address any gaps in training
Performance Monitoring & Evaluation	• Regularly monitor and audit compliance with injection safety protocols on units and medication administration sites • Review sharps injury logs to identify areas for improvement and targeted education • Stay informed on sharps injury data within the facility *(e.g., drug diversion, injury prevention, sharps evaluation)* • Ensure IPC practices address injection safety gaps and risks
Communication & Collaboration	• Collaborate with other healthcare teams (*e.g., nurse educators, occupational health, supply management*) to ensure a coordinated approach to injection safety • Communicate effectively with all staff levels to reinforce the importance of injection safety and overcome barriers to compliance • Work with occupational health to manage exposure events
Innovation & Improvement	• Implement innovative processes to reduce the risk of sharps injuries • *e.g., neutral zones, reduced hand-to-hand passing, optimized placement of sharps containers* • Increase the use of sharps devices with safety features to prevent injuries
Product Selection & Evaluation	• Evaluate opportunities for safer materials and processes • *e.g., safer sharps, PPE, disposal materials* • Participate in trials of new products to assess their effectiveness in enhancing injection safety

Injection Safety Questions to Consider

1. **Does the IPC Program use standardized tools for rounding in Injection Safety Administration and Medication Preparation areas?**
2. **What are the protocols for the following areas in the facility?**
   - **Single-dose vs. multi-dose medications**
   - **Injectable devices & insulin pens**
   - **Medication preparation**
   - **Medication administration**
   - **Sharps disposal**
3. **What personal protective equipment (PPE) is required during lumbar punctures or any punctures of the epidural or subdural space at your facility?**
4. **Do the policies address drug diversion? If so, what is the Infection Preventionist's (IP) role in the facility's drug diversion protocol?**
5. **Does the facility have an Employee Safety Committee that reviews injuries and trends? Is the IP a member?**
6. **Does the facility have a Product Evaluation Committee that reviews sharps devices and looks for safer alternatives?**

Notes

Additional Notes

Notes

Week 4 Review

Internal Policies

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ Notifiable Diseases			
❑ High-Consequence Infectious Disease Protocols			
❑ Safe Injection Practices			

Considerations for Week 4

- ❑ **Reach out to Health Department contact and introduce yourself**
  - ❑ Use this link to access Conversation Starter Templates to aid in this conversation: https://innovateipc.org/ipc-support-center/education-and-resources
- ❑ **Consider watching Behind the Mask Webinar:** Webinars | innovateIPC.org
  - ❑ Fundamentals of Injection Safety
- ❑ **Consider watching PPE donning and doffing training videos**
  - ❑ HEROES - Emergency Preparedness Education and Training
- ❑ **Consider taking the NETEC Identify, Isolate, Inform course**
  - ❑ Identify, Isolate, Inform: Assessment, Management, and Placement of PUI – NETEC

For additional tools and resources visit: https://Innovateipc.org

Week 4 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics.

Primary Resources for Week 4

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
1910.134 - Respiratory Protection | Occupational Safety and Health Administration	OSHA	Regulatory
1910.192. Personal Protective Equipment. | Occupational Safety and Health Administration	OSHA	Regulatory
1910.1030 - Bloodborne pathogens. | Occupational Safety and Health Administration	OSHA	Regulatory
Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings	CDC	Guideline
Workbook for Designing, Implementing & Evaluating a Sharps Injury Prevention Programs	CDC	Resource
Safe Injection Checklist	CDC	Resource
NETEC Identify, Isolate, Inform Tip Sheet	NETEC	Resource
NETEC Infection Preventionist Job Action Sheet	NETEC	Resource
Health Care Facility Viral Hemorrhagic Fever (VHF) Preparedness Checklist · NETEC Resource Library	NETEC	Resource
National Notifiable Conditions	NNDSS	Resource

Week 4 References

1. National Notifiable Diseases Surveillance System. CDC. Updated June 26, 2023. Accessed January 14, 2025. National Notifiable Diseases Surveillance System (NNDSS) - Health, United States

2. Siegel J. D., Rhinehart, E., Jackson, M., Chiarello, L..,2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Centers for Disease and Control and Prevention. Updated September, 2024. Accessed January 14, 2025. Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007)

3. Identify, Isolate, Inform: ambulatory care evaluation and management of patients with possible ebola virus disease. Centers for Disease Control and Prevention. November 5, 2024. Accessed January 14, 2025. Identify, Isolate, Inform : ambulatory care evaluation and management of patients with possible Ebola virus disease

4. Identify, Isolate, Inform Tip Sheet. National Emerging Special Pathogens Training and Education Center. July 26, 2024. Accessed January 14, 2025. Identify, Isolate, Inform Tip Sheet · NETEC Resource Library

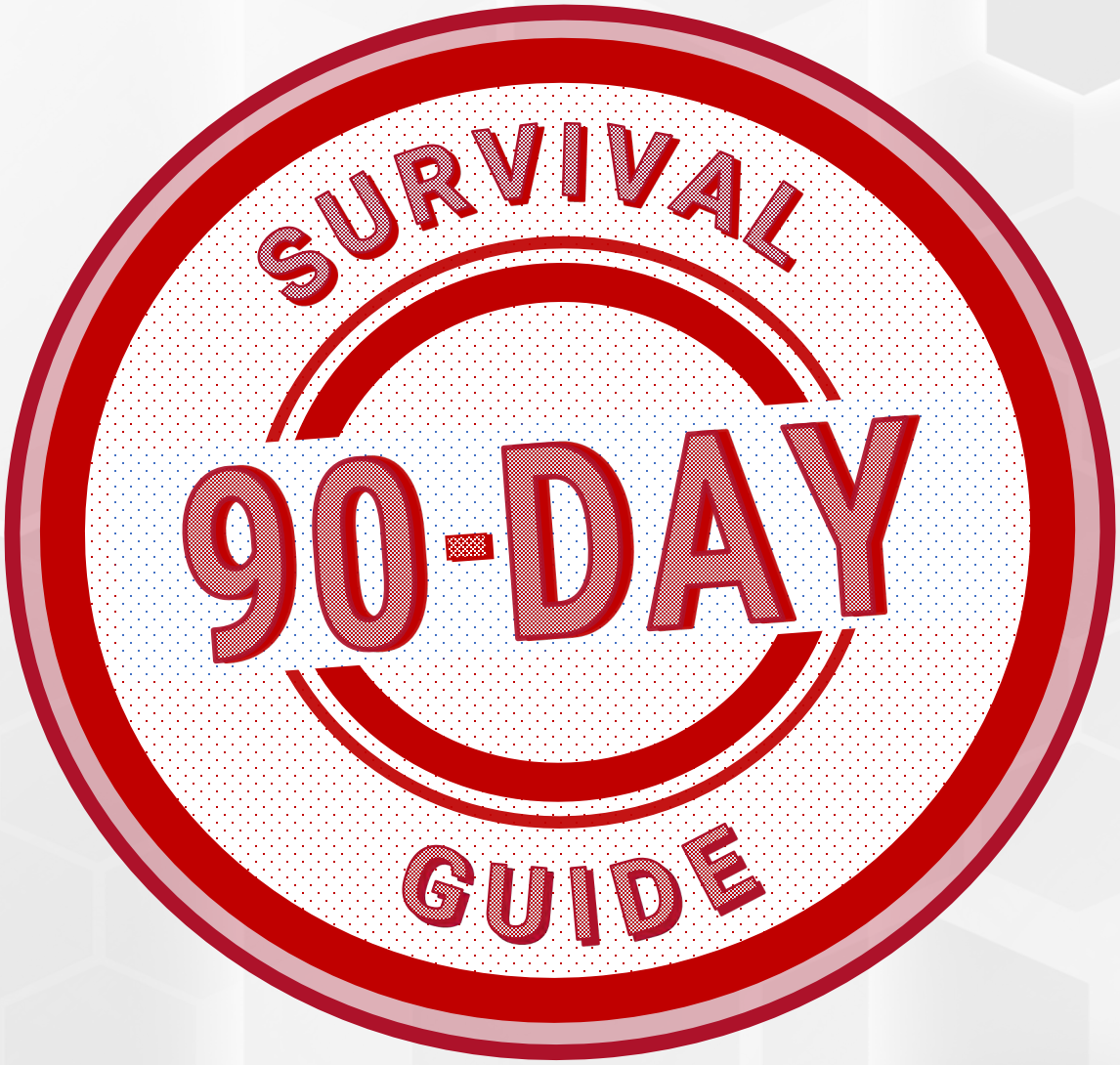
5. R3 Report: Requirement, Rationale, Reference. The Joint Commision. December 20, 2023. Accessed January 14, 2025. R3 Report: New and Revised Requirements for Infection Prevention and Control for Critical Access Hospitals and Hospitals

6. Siegel J. D., Rhinehart, E., Jackson, M., Chiarello, L..,2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Centers for Disease and Control and Prevention. Updated September, 2024. Accessed January 14, 2025. Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007)

7. Leary, E., & Diers, D. (2013). The silence of the unblown whistle: the Nevada hepatitis C public health crisis. *The Yale journal of biology and medicine*, *86*(1), 79–87

8. Gajanan, M. More than 3,000 Patients Possibly Exposed to HIV and Hepatitis At New Jersey Surgical Center, Officials Say. Time. December 26, 2028. Accessed January 14th, 2025. New Jersey: 3,000 Patients Possibly Exposed to HIV and Hepatitis | TIME

9. Macedo de Oliveira, A., White, K. L., Leschinsky, D. P., Beecham, B. D., Vogt, T. M., Moolenaar, R. L., Perz, J. F., & Safranek, T. J. An outbreak of hepatitis C virus infections among outpatients at a hematology/oncology clinic. Annals of Internal Medicine. June 7, 2005. Accessed January 14, 2025. An Outbreak of Hepatitis C Virus Infections among Outpatients at a Hematology/Oncology Clinic | Annals of Internal Medicine



The Infection Preventionist's Orientation Workbook

WEEK FIVE

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Surveillance

Surveillance is "a comprehensive method of measuring outcomes and processes of care, analyzing the data, and providing information to members of the healthcare team to improve those outcomes."[1] The primary goal of surveillance is to improve patient outcome by using a systematic effort to monitor process and outcome data. Surveillance efforts are integral to the overall IPC Program Plan and serve as a foundation for guiding performance improvement initiatives within healthcare facilities.

What is the difference between clinical and surveillance definitions?

Clinical definitions:

- **Purpose:** Used primarily for diagnosing and providing patient care and treatment
- **Basis:** Relies on clinical judgment, patient symptoms, and context-specific factors relevant to the individual patient

Surveillance definitions:

- **Purpose:** Utilized to track and report infections within healthcare settings and public health systems
- **Basis:** Employs objective data, including laboratory results, clinical care information, and diagnostic findings, to monitor infection trends and compare outcomes.

In summary, clinical definitions focus on individual patient care, while surveillance definitions serve as standardized tools for public health monitoring.

This distinction ensures that while clinical judgments can vary based on individual circumstances, surveillance definitions aim to provide a reliable framework for tracking disease trends and outcomes across populations.

Surveillance

Surveillance Process

Components of a Surveillance Plan[1, 2]

Healthcare Setting

- Acute Care
- Long-term Care
- Rehabilitation
- Ambulatory Surgery Center
- Critical Access
- Inpatient Psych

Services Provided

- Inpatient services
- Surgical Services
- Adult
- Pediatric
- Medical
- Surgical
- Diagnostic
- Emergency

Surveillance Methods

- Outcome vs Process
- Total (whole house) vs Targeted vs Combination
- Methods for case identification, data collection & analysis

Events Monitored

- CLABSI
- CAUTI
- VAE
- HAP
- SSI (Joint, ortho, COLO. HYST, C-section)
- LabID
- HCP Immunizations
- Outbreaks

Purpose & Objectives

- Goals to provide information to guide interventions
- e.g., collect CAUTI data, implement reduction strategy and track its impact.

Reporting Requirements

- Reference state and federally required reporting requirements
- Consider voluntary participation in CMS quality program(s) that require reporting

Communication

- Infection Control Committee
- QAPI
- Physicians/ Surgeons
- Leadership

Evaluation Frequency

- Annual
- As needed

Surveillance

Example Surveillance Plan

Process Measures	Outcome Measures
Device: Central line associated BSI 1. Standardized Utilization Ratio (SUR): # observed central line days/# expected central line days • Report quarterly & annual 2. Device rounds performance measures, • Report as percentage met quarterly & annually. • Stratify data by Nursing Unit & Organization	Device: Central line associated BSI 1. Statistical comparison using a Standardized Infection Ratio (SIR) to NHSN/CMS; quarterly & annual • Report quarterly & annual 2. CLABSI rate: #CLABSI/1000 central-line days; no benchmark • Stratify data by Nursing unit & Organization; graphs • Identify number of days between infection occurrences
Device: Catheter associated UTI 1. Standardized Utilization Ratio (SUR): # observed catheter days/# expected catheter days • Report quarterly & annually 2. Device rounds performance measures, • Report as percentage met quarterly & annually. • Stratify data by Nursing Unit & Organization	Device: Catheter associated UTI 1. Statistical comparison using a Standardized Infection Ratio (SIR) to NHSN/CMS; • Report quarterly & annually 2. CAUTI rate: #CAUTI/1000 device days; no benchmark • Stratify data by Nursing unit & Organization; graphs • Identify number of days between infection occurrences
1. Hand Hygiene: Hand Hygiene measure: % compliance (# hand hygiene compliance/# observations); • Report monthly, quarterly & annual; • Stratify by Unit and Discipline	Clostridium difficile: (Includes ED) 1. FacWideIN LabID: Statistical comparison using a Standardized Infection Ratio (SIR) to NHSN/CMS; • Report quarterly & annual • Stratify data by HO, CO & CO-CO-HCFA • Monthly rate by Unit: #CDI events/10,000 patient days; Raw #HO events monthly
1. CHG Bathing: Percent compliance with daily CHG bath (#CHG baths/# total baths) by Unit; • Report monthly, quarterly & annual percent	MRSA Bacteremia LabID: (Includes ED) 1. FacWideIN LabID: Statistical comparison using a Standardized Infection Ratio (SIR) to NHSN/CMS; • Report quarterly & annual • Stratify data by HO, CO & CO-CO-HCFA • Monthly rate by Unit: #MRSA bacteremia events/1000 patient days; Raw #HO events monthly

IP Pro Tip:

Not all facilities receive a calculated SIR as shown in the examples above. Some IPC programs may choose to evaluate their HAI data using rates *(e.g., CAUTI per 100 device days.)*

IP Role in Surveillance

Policy & Procedure

- Regularly review and update surveillance policies and procedures to ensure they reflect current best practices
- Create a surveillance plan tailored to the facility's services and associated risks
- Identify appropriate methods for conducting surveillance
  Establish strategies for data collection, which may include utilizing Electronic Health Records (EHR), surveillance software, or manual data collection

Surveillance & Reporting

- Collect and analyze data on healthcare-associated infections (HAIs) and other relevant events
- Conduct deep dives with involved teams when HAIs or outbreaks occur to identify root causes
- Report relevant data through designated reporting systems such as the National Healthcare Safety Network (NHSN), Quality Assurance Performance Improvement (QAPI), and Infection Control Committees (ICC)
- Ensure that the facility has at least two NHSN users and obtain CDC SAMS NHSN user access as necessary

Communication & Collaboration

- Provide facility-wide and unit-specific data to colleagues to promote awareness and action
- Share results with leadership and relevant committees to inform decision-making
- Report data externally as required, particularly to NHSN

Innovation & Improvement

- Use collected data to facilitate improvement projects and conduct gap analyses
- Evaluate the effectiveness of the infection prevention and control (IPC) program, using data to inform future efforts

Surveillance Questions to Consider

1. **What are the mandatory reporting requirements for my state? Identify the specific regulations governing infection reporting in your state.**
2. **What healthcare-associated infections (HAIs) are you required to report? Determine which HAIs fall under mandatory reporting based on state regulations.**
3. **What HAIs does your facility monitor? Specify the HAIs that your facility actively tracks beyond mandatory reporting.**
4. **How is data collected? Describe the methods used for data collection, such as through Electronic Health Records (EHR), manual entry, or surveillance software.**
5. **Is the data stored? Indicate the storage location for surveillance data, ensuring it complies with privacy and security regulations.**
6. **Where is surveillance data reported? Identify the entities or committees** *(e.g., ICC or QAPI)* **to which surveillance data is reported.**

Additional questions on the next page →

Notes

Surveillance Questions to Consider

7. **What audit and feedback processes are currently being performed? Outline existing processes for auditing data accuracy and providing feedback to relevant teams.**

8. **What outcome measures do you track? Specify the outcome measures monitored, such as HAI incidence rates, standardized infection ratios (SIR), or summary rates (SUR).**

9. **What process measures do you track? List the process measures being monitored, including hand hygiene compliance, chlorhexidine gluconate (CHG) bathing practices, PPE compliance, injection safety protocols, and cleaning and disinfection procedures.**

10. **What quality improvement initiatives or action plans are active? Describe ongoing quality improvement initiatives related to infection prevention and control.**

11. **Are there ongoing investigations or outbreaks? Confirm whether there are any current investigations or outbreaks that require attention.**

12. **What program(s) does your facility participate in that require reporting from the IPC program? Identify programs such as the National Healthcare Safety Network (NHSN), National Surgical Quality Improvement Program (NSQIP), or Medicare Beneficiary Quality Improvement Project (MBQIP) that mandate reporting from your Infection Prevention and Control program.**

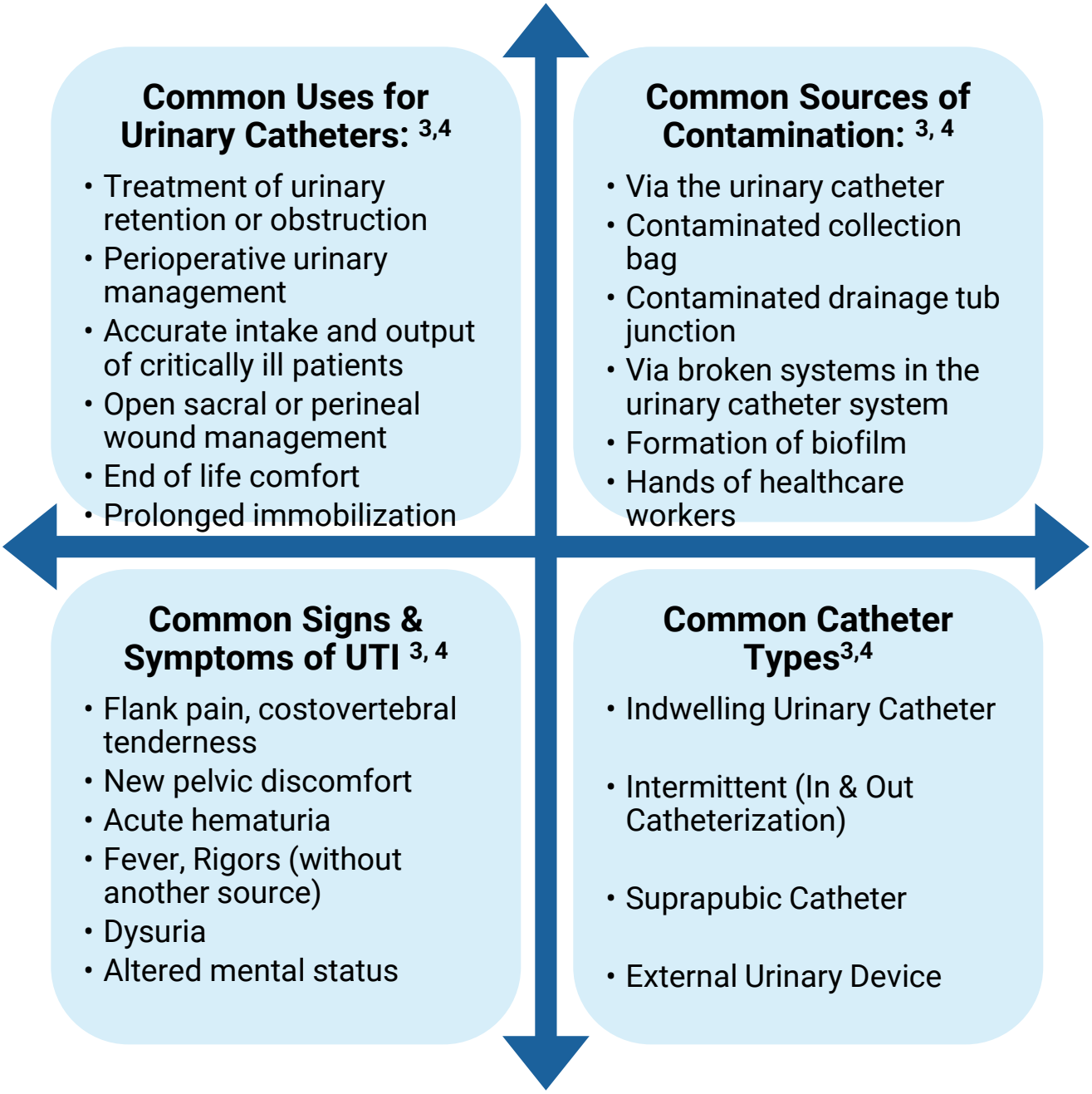
Notes

Additional Notes

Notes

Catheter-Associated Urinary Tract Infection

Urinary catheters are one of the most common medical devices used in healthcare facilities and one of the most common HAIs.[3] When a urinary catheter is in place, patients are at an increased risk for developing a Catheter-Associated Urinary Tract infection (CAUTI).[3, 4] IPC programs are crucial in partnering nurses and providers to implement strategies to reduce the risk of CAUTI and improve patient safety.



Key Principles of CAUTI Prevention [3,4]

Limit Urinary Catheters to appropriate indications

Use alternative urinary devices when possible
- External catheters, urinals, etc.

Use aseptic insertion protocols and standardized kits

Optimize maintenance care
- Consider a maintenance bundle based on best practices

Promptly remove catheter when it is no longer indicated
- Use catheter reminders, stop orders, and nurse-driven removal protocols

Have clear protocols for testing for a UTI

Appropriate testing includes:
- Flank pain, CVA tenderness, new pelvic discomfort
- Acute hematuria
- Fever, Rigors
- Dysuria
- Altered mental status
- Reflex to culture with associated symptoms

Inappropriate indications for testing include:
- Odorous, cloudy, discolored urine
- Reflex cultures without associated symptoms
- Culture to document response to antimicrobial therapy unless symptoms don't resolve

Avoid Catheter Use
- Utilize guidelines for catheter placement

Insert Catheter
- Utilize aseptic technique

Optimize Maintenance Care
- Closed System
- Avoid Catheter Contamination
- Implement strategies to secure device to patient

Prompt Catheter Removal
- Stop Orders
- Nurse-driven removal protocols
- Catheter removal reminders
- Voiding Trials

Common CAUTI Prevention Strategies [3,4]

Preparation	Insertion	Maintenance Care	Removal Protocol
• Perineal Care • Standard kits	• Sterile technique • Insertion Bundle • Acceptable indications ONLY	• Perineal care • System maintenance • Catheter system positioning • CHG Bathing	• Provider Order Sets • STOP Orders •Nurse-Driven removal

Urine Culture Stewardship	Specimen Collection	Bladder Management Protocols
• Testing Algorithms *(reflex to culture)* • Culture indications	• Collection Procedures *(e.g., clean catch, straight catch, via IUC)* • Aseptic technique	• Bladder scanning • Utilization of catheter alternatives • Toileting schedules

IP Role in CAUTI Prevention

Policy & Procedure	• Develop, review and update urinary catheter and CAUTI policies and procedures based on the latest guidelines and evidence-based practice
	• Ensure policies and procedures address:
	  • *Catheter Insertion*
	  • *Maintenance bundle adherence*
	  • *Removal*
	  • *Specimen collection & testing*

Education & Training	• Ensure staff training is sufficient for healthcare workers on the insertion, maintenance, and removal of the urinary catheter • Partner with education teams to address gaps in training and education
Surveillance & Reporting	• Collect, analyze and trend CAUTI data • Perform deep dives with involved teams when CAUTIs occur • Provide unit-specific incidence of CAUTI • Report relevant CAUTI data through designated reporting mechanisms. *NHSN, QAPI, ICC etc.*

Performance Monitoring & Evaluation	• Audit CAUTI prevention practices
	  • *Monitor process measures*
	  • *Perform gap analysis to identify opportunities and trends*
	• Provide feedback to staff in the form of outcome and process data
	• Monitor for continuous improvement

Communication & Collaboration	• Communicate facility and unit-specific CAUTI data to stakeholders (*unit staff, committees, leadership*) • Actively participate or lead the CAUTI prevention committee • Provide alternatives for urinary catheterization
Product Selection & Evaluation	• Ensure IP is allowed to provide necessary input into decisions related to infection prevention • Review urinary devices and products used for insertion, care and maintenance • Confirm product standardization throughout facility • *e.g., insertion kits, catheter alternatives*

CAUTI Questions to Consider

1. **Do we report CAUTI data to NHSN?**
2. **What populations in the facility are being monitored?**
3. **What outcome measures do we track for CAUTI?**
4. **What process measures do we track for CAUTI?**
5. **How is competency for indwelling catheter insertion assessed?**
6. **Are there any active CAUTI or UTI improvement initiatives the program is working on?** **There may be unit specific or facility wide initiatives**

Additional questions on the next page →

Notes

CAUTI Questions to Consider

7. **What frequency is CAUTI data reported? Who is it reported to?**

8. **Are there ongoing investigations or outbreaks and where is that information located?**

9. **Does the facility have a formal CAUTI Prevention Committee? If so, is the IP a member and how often do they meet?**

10. **When was the last CAUTI Gap Analysis performed?**

11. **Do units perform independent CAUTI prevention audits? If yes, how is that data reported?**

12. **Is appropriate indication required to be documented prior to insertion?**

13. **Are nurse-driven removal protocols utilized?**

Notes

Additional Notes

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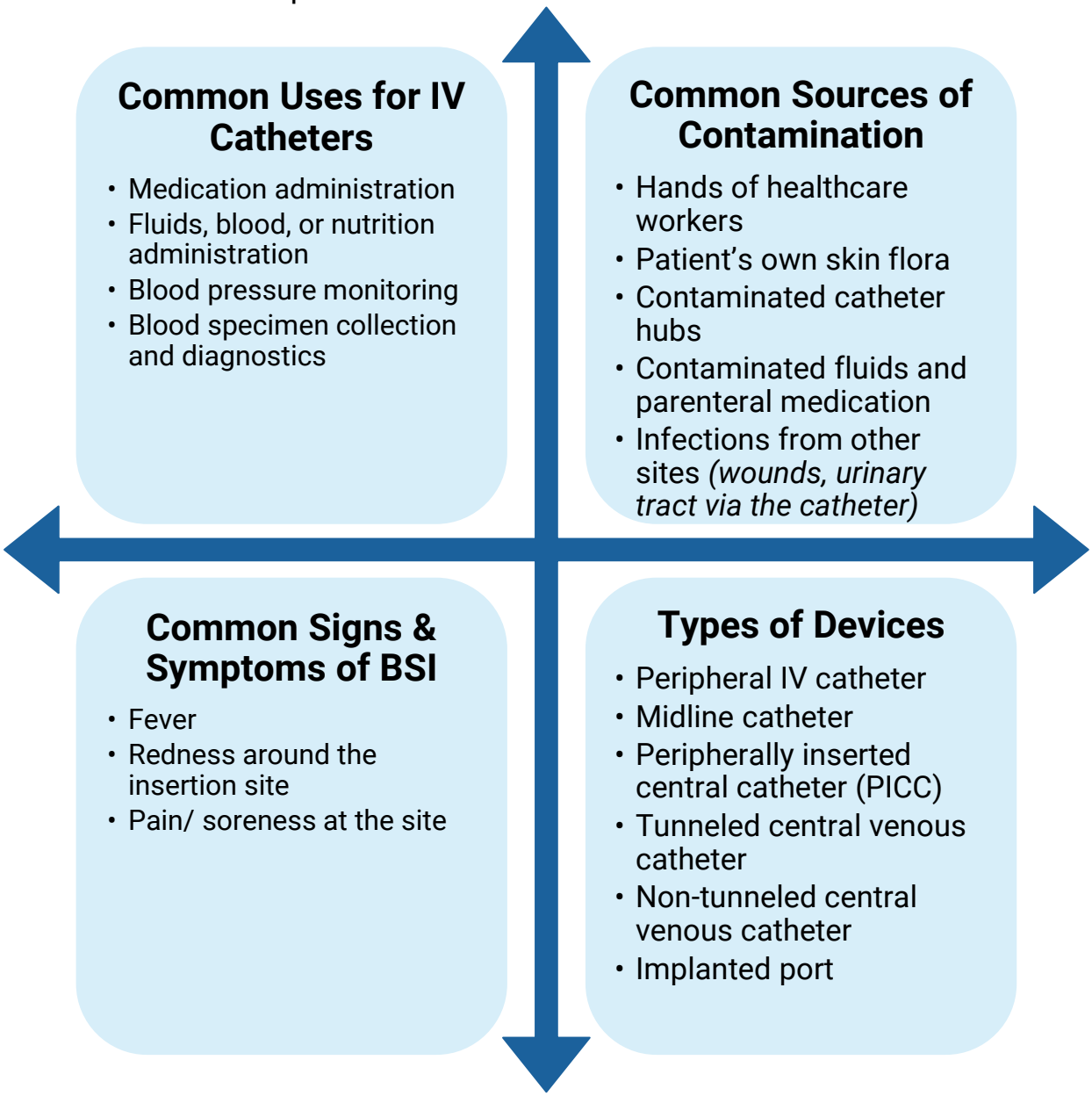
Bloodstream Infections

An intravascular (IV) catheter is a medical device inserted into a blood vessel, either a vein or an artery, to provide access for lifesaving medical therapy.[5] Despite their medical necessity, intravascular catheters are sometimes responsible for infectious complications and represent a difficult challenge for health systems. Central lines, in particular, are a common source for healthcare-associated infections. When a central line is in place, patients are at an increased risk for developing a Central Line Associated Bloodstream infection (CLABSI).[5,6] IPC programs require a detailed understanding of bloodstream infection epidemiology and guidelines and interventions needed to prevent bloodstream infections.



Key Principles of BSI Prevention[5,6]

Limit central lines to appropriate indications

- E.g., *Antibiotic therapy, Chemotherapy, Parental nutrition, Emergent Situations*

Consider use of midline catheters and peripheral lines when possible

Utilize optimal site selection

- Avoid femoral vein in adults when possible
- Consider utilizing an algorithm to assist in making vascular access decisions

Perform CHG skin antisepsis

- Use CHG based antiseptic for skin preparation at the insertion site

Adhere to aseptic technique

- Employ maximal sterile barriers during insertion
- Maintain strict aseptic technique during central line insertion, maintenance and removal
- Hand hygiene before and after contact with central line or insertion site

Use standardized kits for insertion and maintenance of central line

Optimize maintenance care

Promptly remove central line when it is no longer indicated

Common BSI Prevention Strategies [5, 6]

Preparation

- Proper site selection
- Catheter selection
- Patient skin antisepsis

Insertion

- Maximal sterile barriers for central lines
- Aseptic technique
- Insertion checklists/ bundle

Maintenance care

- Maintenance bundles
- Protocols for tubing and dressing changes
- Blood draw and flushing procedures
- Disinfection of catheter hubs, connectors and injection ports
- Antimicrobial/ antiseptic impregnated dressings
- Securement of line
- Conduct a daily assessment of the line

Removal protocol

- Conduct a daily assessment of the line
- Conduct a daily review of IV and central line necessity
- Prompt removal when no longer needed

Specimen collection

- Aseptic specimen collection
- Protocols for decreasing risk and recognizing contamination
  - *e.g., 2 culture protocol from different sites*

IP Role in BSI Prevention

Policy & Procedure

- Develop, review and update vascular access and central line policies based on the latest guidelines and evidence-based practice
- Ensure policies address:
  - *Types and indications of intravascular devices*
  - *Procedures for preparation, insertion, maintenance, and removal of intravascular devices*

Education & Training

- Ensure staff training is sufficient for healthcare workers on the insertion, maintenance, and removal of intravascular catheters
- Partner with education teams to address gaps in training and education

Surveillance & Reporting

- Collect, analyze, and trend BSI and bacteremia data
- Perform deep dives with involved teams when BSIs and CLABSIs occur
- Monitor unit-specific incidence of BSI/CLABSI
- Report relevant BSI/ CLABSI data through designated reporting mechanisms (*NHSN, QAPI, ICC etc.)*

Performance Monitoring & Evaluation

- Audit BSI prevention practices
  - *Monitor process measures*
  - *Perform gap analysis to identify opportunities and trends*
- Provide feedback to staff in the form of outcome and process data
- Monitor for continuous improvement

Communication & Collaboration

- Communicate facility and unit-specific BSI/CLABSI data to stakeholders
  - *Unit staff, committees, leadership*
- Actively participate or lead the BSI prevention committee
- Provide alternatives for central lines and vascular access

Product Selection & Evaluation

- Ensure IP is allowed to provide necessary input into decisions related to product selection
- Review intravascular devices and products for line insertion, care, and maintenance
- Confirm product standardization throughout facility
  - *e.g., Insertion kits, stat locks, dressings, needles*

CLABSI Questions to Consider

1. **Does the facility report BSI data to NHSN?** *(e.g., BSI, CLABSI, CLIP)*
2. **What populations in the facility are being monitored?**
3. **What outcome measures does the facility track for CLABSI?**
4. **What process measures do we track for CLABSI?**
5. **What education and training about BSI prevention do healthcare workers receive?**
6. **Are there any active BSI or CLABSI improvement initiatives the program is working on? What frequency?** **There may be unit specific or facility wide initiatives**
7. **Is CLABSI and BSI data reported?**

Additional questions on the next page →

Notes

CLABSI Questions to Consider

8. **Who is CLABSI and BSI data reported to?**
9. **Are there ongoing investigations or outbreaks and where is that information located?**
10. **Does the facility have a formal BSI Prevention Committee?**
11. **If yes, is the IP a member and how often do they meet?**
12. **When was the last BSI/CLABSI Gap Analysis performed?**
13. **Do units perform independent CLABSI or BSI prevention audits?**
14. **If yes, how is that data reported?**
15. **What is the process for obtaining blood cultures when a central line is in place?**
16. **In what scenarios can blood be drawn by vascular access devices at your facility?**

Notes

Additional Notes

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Week 5 Review

Internal Policies

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ IPC Program Surveillance Plan			
❑ Urinary Management policies and procedures ❑ CAUTI prevention ❑ Urinary specimen collection and testing			
❑ Intravascular Device Management-related policies and procedures ❑ Device utilization algorithms ❑ Blood specimen management			

Considerations for Week 5

- ❑ **Meet with IT contact for the IPC Program**
  - ❑ Use this link to access Conversation Starter Templates to aid in this conversation: https://innovateipc.org/ipc-support-center/education-and-resources

- ❑ **Consider watching Behind the Mask Webinars**: Webinars | innovateIPC.org
  - ❑ Fundamentals of Surveillance- Part 1
  - ❑ Fundamentals of CAUTI Prevention Programs
  - ❑ Fundamentals of CLABSI Prevention Programs

- ❑ **Consider reviewing** NHSN training
  - ❑ Introduction to Device-associated Module Training
  - ❑ CLABSI Training
  - ❑ CAUTI Training

For additional tools and resources visit: https://Innovateipc.org

Week 5 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics.

Primary Resources for Week Five

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
Recommended Practices for Surveillance (APIC)	APIC	Resource
CMS State Operations Manual*	CMS	Regulatory
NHSN Surveillance Training	NHSN	Resource
SHEA - Strategies to Prevent Catheter-Associated Urinary Tract Infections in Acute Care Hospitals: 2022 Update	SHEA/ IDSA	Guideline
Catheter-Associated Urinary Tract Infections (CAUTI) Prevention Guideline | Infection Control | CDC	CDC	Guideline
Catheter-Associated Urinary Tract Infection (CAUTI) Implementation Guide (cdc.gov)	CDC	Resource
Strategies to prevent central line-associated bloodstream infections in acute-care hospitals: 2022 Update	SHEA/ IDSA	Guideline
Guidelines for the Prevention of Intravascular Catheter-Related Infections (2011) (cdc.gov)	CDC	Guideline

** The CMS State Operations Manual will vary depending on your facility type. Acute care is linked above, reference the CMS website for additional SOMs for other facility types.*

Week 5 References

1. Lee, T., Montgomery, O., Marx, J., Olmstead, R., Scheckler, W., Recommended Practices for Surveillance. APIC.2007. Accessed January 14, 2025. doi:10.1016/j.ajic.2007.07.002

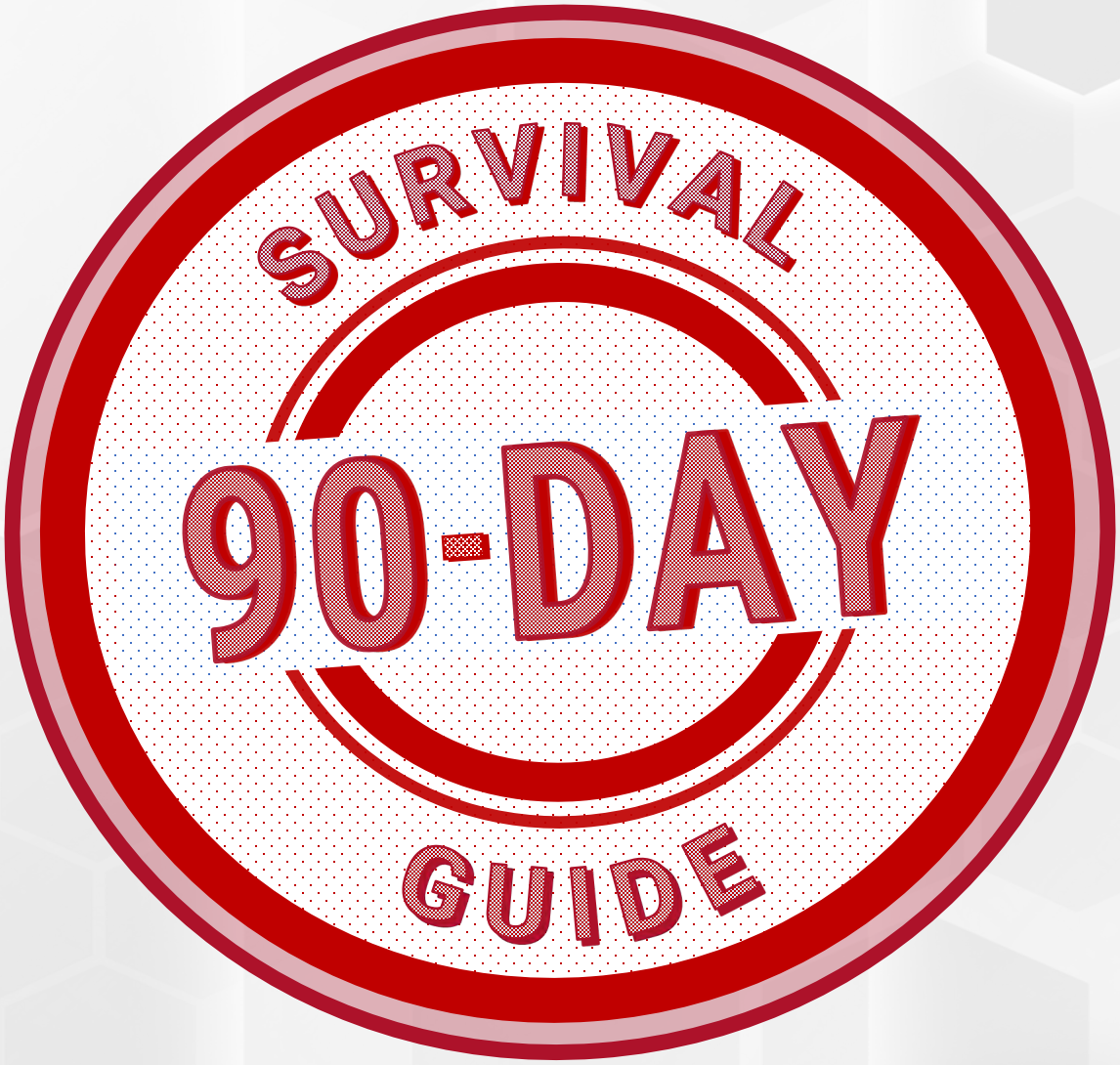
2. Moinuddin M. Surveillance. In: APIC (ed). *APIC Text of Infection Control and Epidemiology*. Chapter 11. Revised January 17, 2024; Originally Published October 3, 2014. APIC. https://text.apic.org/toc/epidemiology-surveillance-performance-and-patient-safety-measures/surveillance/(references)/true.

3. Patel, P., Advani, A. D., Kofman, A. D., Lo, E., Maragakis, L. L., Pegues, D. A., Pettis, A. M., Saint, S., Trautner, B., Yokoe, D. S., Meddings, J., Strategies to prevent catheter-associated urinary tract infections in acute-care hospitals. August 25, 2023. Accessed January 14, 2025. Strategies to prevent catheter-associated urinary tract infections in acute-care hospitals: 2022 Update | Infection Control & Hospital Epidemiology | Cambridge Core

4. Catheter-Associated Urinary Tract Infections (CAUTI) Prevention Guideline. Centers for Disease and Control and Prevention. April 12, 2024. Accessed January 14, 2025. Catheter-Associated Urinary Tract Infections (CAUTI) Prevention Guideline | Infection Control | CDC

5. Intravascular Catheter-related Infection(BSI) Prevention Guidelines. Centers for Disease and Control and Prevention. April 12,2024. Accessed January 14, 2025. Intravascular Catheter-related Infection (BSI) Prevention Guidelines | Infection Control | CDC

6. Buetti, N., Marschall, J., Drees, Marci., Fakih, M. G., Hadaway, L., Maragakis, L. L., Monsees, E., Novosad, S., O'Grady, N. P., Rupp, M. E., Wolf, J., Yokoe, D., Mermel, L. A., Strategies to prevent central line-associated bloodstream infections in acute-care hospitals. April 19, 2022. Accessed January 14, 2025. Strategies to prevent central line-associated bloodstream infections in acute-care hospitals: 2022 Update | Infection Control & Hospital Epidemiology | Cambridge Core



The Infection Preventionist's Orientation Workbook

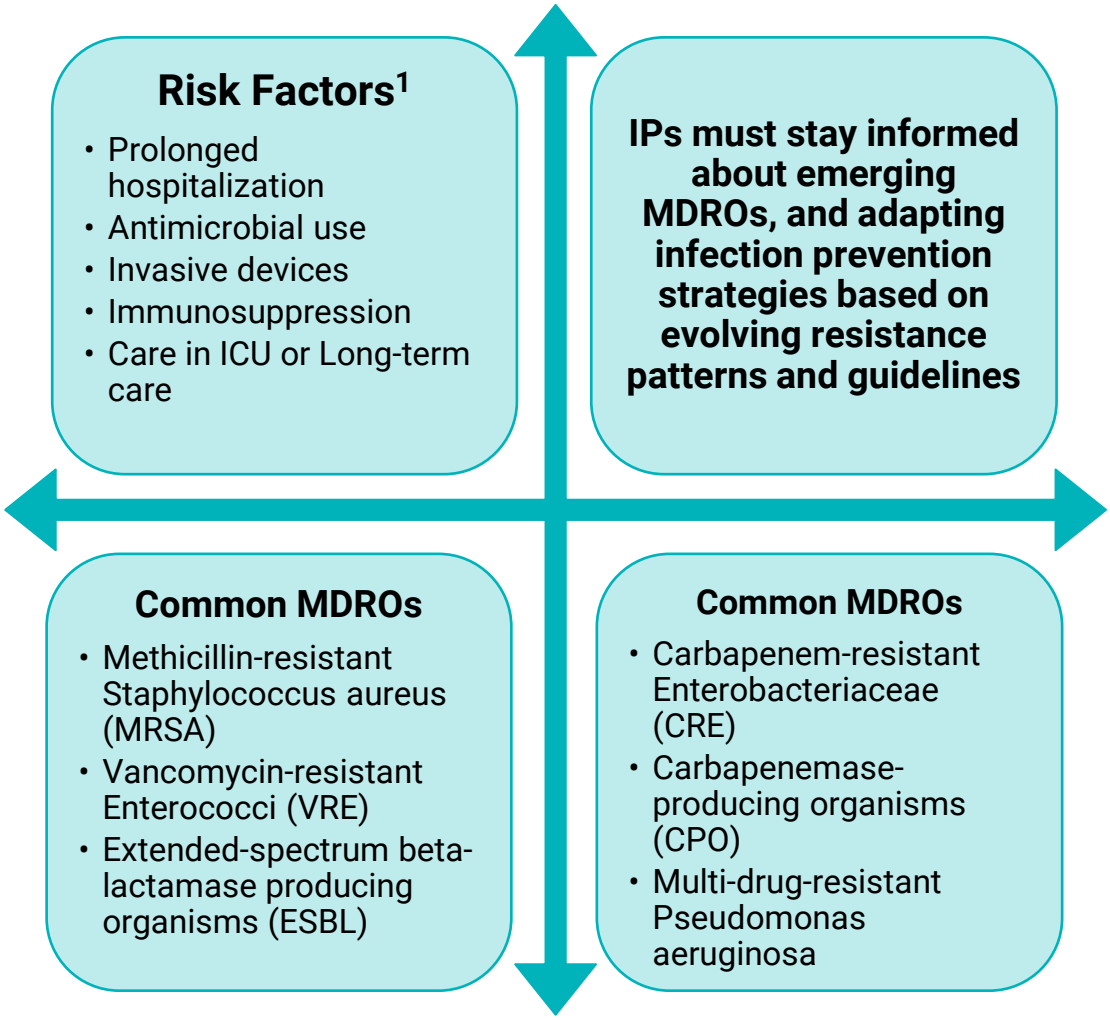
WEEK SIX

Table of Contents

Multidrug-Resistant Organisms

Multidrug-Resistant Organisms (MDROs) are microorganisms that are resistant to one or more classes of antimicrobial agents. While the names of certain MDROs, such as Methicillin-Resistant Staphylococcus aureus (MRSA) and Vancomycin-Resistant Enterococcus (VRE), may indicate resistance to only one agent, these pathogens often exhibit resistance to most available antimicrobial agents.[1] Effective prevention and management of MDROs in healthcare facilities require a multifaceted approach involving multidisciplinary teams. Given their clinical significance, the CDC, along with various health agencies, has developed numerous strategies aimed at containing and preventing the transmission of MDROs.[3]

Importance of Control: The control of MDROs is crucial for infection prevention and control (IPC) programs due to their strong correlation with increased morbidity and mortality rates among affected patients.[1]



Key Principles of MDROs

Patients colonized with MDROs are capable of shedding and transmitting pathogens during healthcare interactions. This transmission can occur through direct and indirect contact

- *e.g., If a person with an MDRO touches equipment, bed linens, or other surfaces, the organisms can survive on these surfaces for extended periods. Subsequently, another person may come into contact with these contaminated surfaces before they are disinfected*

What is colonization?

When a pathogen is present in the body but is not currently causing symptoms or disease[3]

Implement effective Standard and Transmission-based Precautions to mitigating the spread of MDROs in healthcare facilities

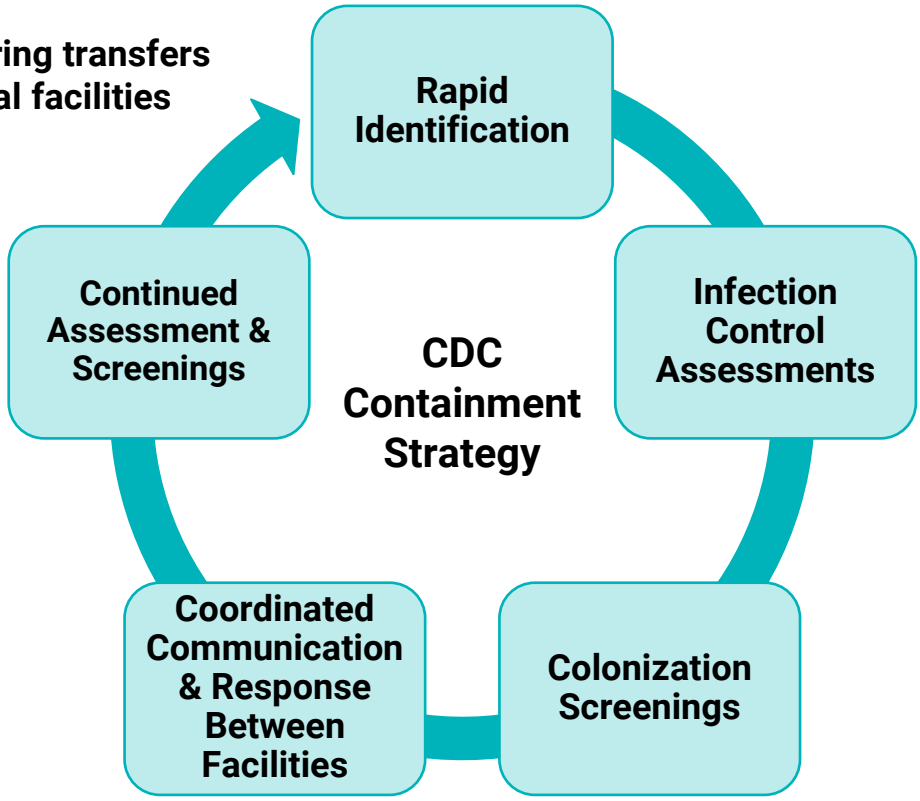
Preventing infections and efforts to reduce antimicrobial resistance reduces the burden of MDROs in healthcare settings (CDC MDRO Guideline)

Performing MDRO Surveillance to monitor for the emerging pathogens and resistance patterns is crucial for IPC programs

- Partner with lab to establish laboratory protocols for storage of isolates and molecular typing

Communicate MDRO status during transfers within the facility and to external facilities

- Utilize standardized transfer forms to inform receiving facilities about any known infections or colonization
- Engage in collaborative efforts with local health departments and other healthcare facilities
- Participate in regional coalitions can enhance collective efforts to combat MDRO spread



Key MDRO Prevention Strategies[1,2]

For complete recommendations on MDRO prevention strategies visit CDC MDRO Management Guidelines

Hand Hygiene

- Before and after patient contact
- After contact with contaminated surfaces
- Before performing aseptic tasks

Environmental Cleaning

- Routine and thorough cleaning of patient rooms, surfaces, shared equipment
- Use appropriate disinfectants effective against MDROs
- Focus on high touch surfaces
- Increase cleaning frequency if needed

Antimicrobial Stewardship

- Optimize appropriate and judicious use of antimicrobials to prevent overuse/ misuse that contributes to resistance
- Narrow spectrum agents when possible

Transmission-based Precautions

- Use PPE when caring for patients with known/suspected MDROs
- Prioritize placing patients with MDROs in single rooms
- Limiting patient movement within the facility to reduce the risk of transmission

Establish Surveillance Protocols

- Consider screening for MDROs in high-risk patients
- Perform Active Surveillance Testing
- Surveillance programs to monitor incidence and track transmission

Minimize Invasive Device Use

- Catheters, ventilators, central lines etc.
- Use strict aseptic technique for insertion and strict adherence to maintenance protocols

Healthcare Worker Education & Training

Conduct regular education and training sessions on all MDRO prevention and mitigation strategies

IP Role in MDRO Prevention

Policy & Procedure

- Develop, review, and update MDRO-related policies and procedures based on the latest guidelines and evidence-based practice
- Ensure policies address:
  - *Standard & Transmission-Based Precautions*
  - *Personal Protective Measures*
  - *Screening & Surveillance*

Education & Training

- Ensure staff training is sufficient for healthcare workers on MDRO prevention and containment strategies
- Partner with education teams to address gaps in education and training

Surveillance & Reporting

- Collect, analyze, and trend MDRO data
- Report relevant MDRO data through designated reporting mechanisms *(NHSN, QAPI etc.)*
- Maintain awareness of:
  - *Emerging pathogens and resistance patterns*
  - *Sensitivity measures related to specific organisms*
  - *Antibiograms to guide treatment decisions*

Performance Monitoring & Evaluation

- Audit horizontal measures related to MDROs and provide feedback to staff
  - *E.g., isolation, PPE compliance, hand hygiene, etc.*

Communication & Collaboration

- Communicate facility and unit specific MDRO data to stakeholders. Share relevant data with stakeholders to promote transparency and accountability
  - (*leadership, relevant committees, frontline staff*)
- Partner with microbiology and lab to ensure rapid identification and communication of MDROs and effective communication of resistance patterns to inform clinical decision-making
- Collaborate with antimicrobial stewardship to promote judicious use of antimicrobials in facility, reducing the risk of developing further resistance
- Partner with clinical units to ensure effective IPC practices are consistently implemented to limit the risk of MDRO transmission

MDRO Questions to Consider

1. **Do we report MDRO LabID data to NHSN? *(e.g., CDI, VRE, MRSA)***
2. **Which populations in the facility are being monitored for MDROs?**
3. **What outcome measures do we track for MDROs?**
4. **What process measures do we monitor for MDRO prevention?**
5. **Are there any active MDRO prevention improvement initiatives currently underway? Note: Initiatives may be unit-specific or facility-wide.**
6. **What is the frequency of reporting MDRO data?**
7. **To whom is the MDRO data reported?**
8. **Are there ongoing investigations or outbreaks related to MDROs, and where can this information be accessed?**

Additional questions on the next page →

Notes

MDRO Questions to Consider

9. **How is the Infection Prevention and Control (IPC) program notified of resistant organisms?**
10. **How are frontline staff informed about resistant organisms?**
11. **Which MDROs are prevalent or trending in the hospital, community, or area served by our facility?**
12. **How is trending organism data shared with healthcare providers? (e.g., through antibiograms)**
13. **Does the facility have a process for removing MDRO flags from patients who are colonized with an MDRO?**
14. **Are patients with MDROs flagged as colonized or infected in their medical records or electronic medical records (EMR)?**
15. **Does the MDRO flag persist across patient encounters? For example, does the flag remain on the chart between appointments and hospitalizations?**
16. **Does the MDRO flag provide specific instructions to healthcare workers regarding patient management?**

Notes

Additional Notes

Notes

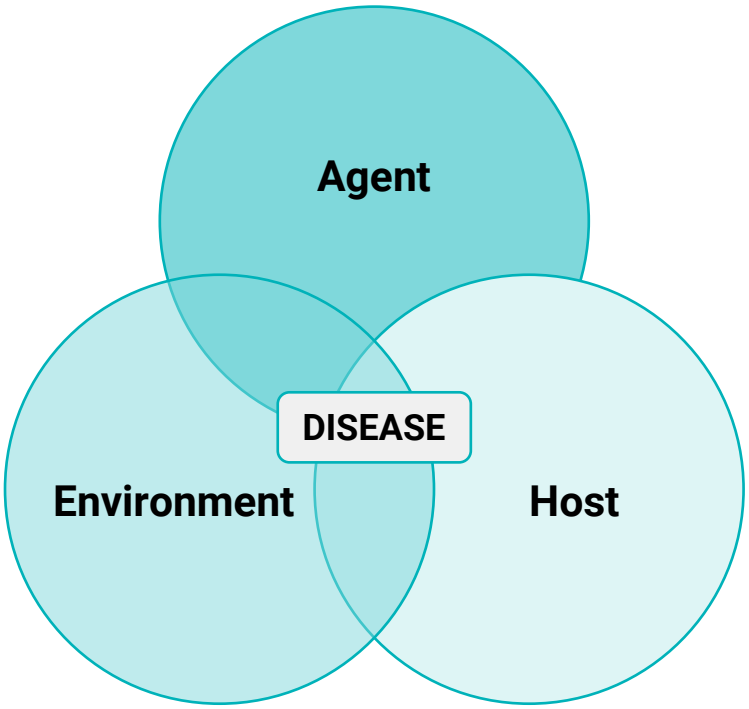
Outbreaks

An outbreak is any healthcare-associated infection (HAI) or adverse event that occurs at a rate exceeding the normal expected level.[5] Recognizing outbreaks is a critical component of an Infection Prevention and Control (IPC) program because they can have significant implications for patients, healthcare staff, and the broader community. Investigations of outbreaks are conducted in a standardized manner to ensure consistency and effectiveness. Regardless of the scope of the outbreak, an investigation typically involves several predictable epidemiological elements.

Implications of Outbreaks: Outbreaks can occur in any type of healthcare setting, including hospitals, nursing homes, outpatient clinics, and rehabilitation centers. They often result from multiple contributing factors, making their management complex.

Goals of Outbreak Investigation

1. ***Control the Outbreak:*** identify and modify contributing factors
2. ***Prevent Future Outbreaks:*** develop and implement measures to prevent similar outbreaks from occurring in the future



The epidemiologic triangle is a model used to understand factors that contribute to the spread of disease.[6] It consists of three key components:

- **Agent-** refers to virus, bacterium, parasite, or other microbes
- **Host-** refers to the human or animal who can get the disease
- **Environment-** refers to extrinsic factors that affect the agent and opportunity for exposure

Outbreaks

The development of outbreaks is influenced by various factors associated with the epidemiological elements *of agent, host, and environment*. By modifying one or more of these factors, there is potential to interrupt and ultimately end the outbreak.

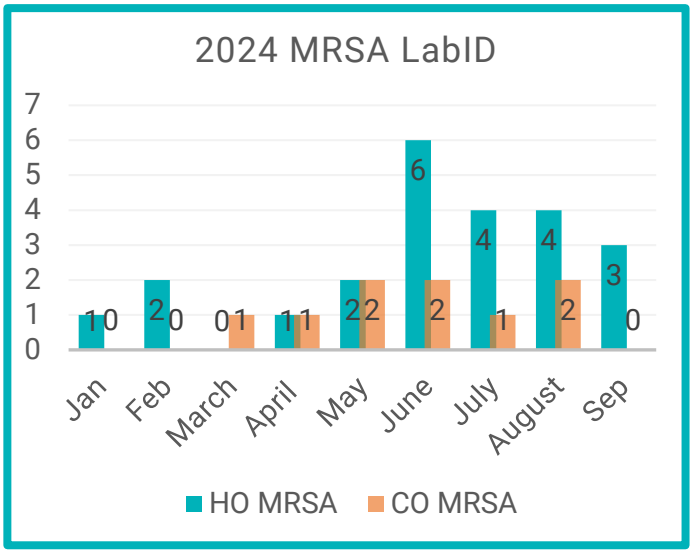
Common Causes of Outbreaks in Healthcare Facilities[5]

Outbreaks in healthcare settings can arise from various factors, often linked to lapses in infection prevention and control (IPC) practices. Recognizing these causes is essential for effective outbreak management. Common causes include:

1. Known or suspected patients with infectious or communicable disease where there has been a delay or lapse in infection prevention or clinical practices
    1. Improper isolation of patient
    2. Unsafe injection practices
    3. Device reprocessing and IFU failures
    4. Failure to use appropriate PPE
    5. Aseptic technique failures
    6. Deviations from IPC policy & procedures
2. Defects in or contamination of a product or device, either at the time of production (intrinsic contamination) or during use (extrinsic contamination)
3. Colonization or infection of healthcare personnel (HCP)
4. Visitors who may be harboring an infectious disease, such as influenza or chickenpox
5. Noninfectious disease sources, such as exposure to the environment, may impact patients. This category of diseases is not transmitted from person to person

IP Pro Tip

Understanding outbreak thresholds for different organisms is essential for IPC programs. Some pathogens can cause an outbreak with a single case (e.g., *Candida auris*, *Aspergillosis spp.)* where others require comparison to baseline (e.g., above expected levels of MRSA, see graph→)



Outbreak Management [5,7]

An outbreak investigation follows a systematic approach, with certain steps occurring concurrently. The key steps include:

Confirm Outbreak (Verify Diagnosis)
- Review microbiology records
- Review historical data
- Review clinical case perception

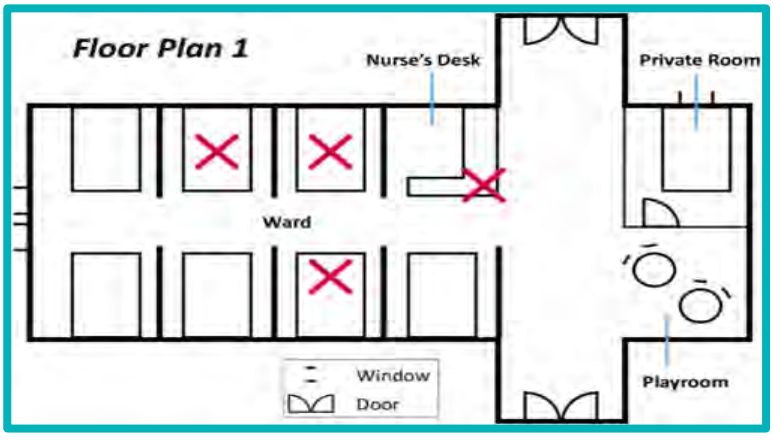
Establish Preliminary Case Definition
- Define consistent and standard identification of cases
- Include clinical symptoms, lab results, and epidemiological links

Develop & Implement Initial Control Plan
- Isolate affected individuals to contain the spread
- Implement enhanced IPC practices
- Notify relevant stakeholders

Begin Case Finding
- Collect data on each case using the established case definition to identify additional cases

Formalize Outbreak Hypothesis
- Develop a formal theory regarding the source of the outbreak, its mode of transmission, and contributing factors

Additional Mitigation Strategies *(if needed)*
- Consider enhanced IPC practices tailored to the specific outbreak
- Introduce Targeted interventions
- Provide additional or Just in Time Training



Example of a case location map used in an outbreak investigation

Communicate Findings
- Notify all relevant and involved parties:
  - Patients
  - Healthcare workers
  - Facility Leadership
  - Public Health authorities

Key Principles of Outbreak Management [1,2,5,7]

Implement processes to ensure early detection

- Timely identification of potential outbreaks is done through IP surveillance
    - Detect unusual patterns or organisms through laboratory or clinical data
    - Automated alerts within your surveillance system or EHR
    - Identification of an unusual organisms by HCW
    - Comparison of baseline infection rates to an unusual pattern or uptick

Ensure prompt response and containment when an outbreak is suspected

- Rapid response once an outbreak is suspected or identified can contain the spread
    - Isolation and/or cohorting of affected individuals
    - Enhanced IPC practices (hand hygiene, EVS, PPE)
    - Targeted interventions tailored to pathogen of concern
    - Just in time training
    - Notify stakeholders *(public health, care teams etc.)*

Perform outbreak investigation

- Establish a clear case definition to ensure consistent identification of cases
- Collect data on each case *(demographics, clinical presentation, exposure history etc.)*

Conducts Root Cause Analysis

- Analyze contributing factors and opportunities for improvement

Continue to refine preparedness and prevention strategies

- Ensure outbreak response plans are up to date
- Maintain awareness of organisms of concern

Establish protocols for MDRO insolation removal

IP Role in Outbreaks

Policy & Procedure

- Develop, review, and update policies related to outbreak mitigation and response
  - *Transmission-based Precautions, Standard Precautions, PPE, etc.*
- Develop standardized protocols for outbreaks based current best practice, recommendations and relevant emerging pathogens

Education & Training

- Partner in developing *Just-in-Time* and remediation training related to the outbreak and prevention measures
- Consider outbreak practice drills to refine skills and communication at the facility

Surveillance & Reporting

- Perform surveillance and monitor for conditions and pathogens that may indicate an outbreak
- Lead or partner in outbreak investigations when they do occur
- Report required outbreaks to relevant stakeholders
  - (*state, local or territorial health department, National Outbreak Reporting System (NORS) and facility leadership etc.)*

Performance Monitoring & Evaluation

- Identify and lead implementation of necessary control measures related to the outbreak
- Audit IPC practices and provide feedback to staff
- Focus on IPC measures related to the current outbreak
  - (*e.g. norovirus outbreak require bleach cleaning, contact precautions, hand hygiene with soap and water etc.)*

Communication & Collaboration

- Communicate and coordinate outbreak findings with relevant departments and agencies
- Evaluate the outbreak's interventions and provide feedback

Innovation & Improvement

- Identify ongoing prevention strategies beyond the outbreak based on findings from the outbreak investigation
- Update best practices to enhance preparedness for future outbreaks

Outbreak Questions to Consider

1. **Are there any active outbreak investigations?**
2. **How is the facility's surveillance system organized to aid in identifying outbreaks?**
3. **Does the microbiology lab notify the IPC program of concerning lab results?**
4. **What is the communication pathway when an outbreak is suspected?**
5. **Who is the point of contact at the county or state health department when an outbreak is suspected?**
6. **Does the IPC program have standard tools for an outbreak?** *(e.g., investigation form, line list, communication templates, etc.)*

Notes

Additional Notes

Notes

Clostridioides difficile Infection

Clostridioides difficile infection (CDI), formerly known as *Clostridium difficile*, is a bacterial infection that is characterized by excessive diarrhea and inflammation in the colon.[8] CDI is of particular concern to healthcare workers because it is caused by a spore-forming organism. Those spores allow *C. difficile* to live on surfaces for an extended periods of time and enable it to be easily transmitted.[9] CDIs are a significant cause of morbidity and mortality.

Common Risk Factors[9]

- Antibiotics Use
- Age 65 or older
- Recent hospitalizations
- Weakened immune system
- Prior infection
- Known exposure to *C. difficile*

Common Signs & Symptoms[9]

- Diarrhea for several days
- Severe abdominal pain
- Fever
- Nausea
- Loss of appetite

CDI Testing[10]

- **Molecular-** PCR- highly sensitive and specific for presence of organism *C. difficile*
- **Antigen-** Test for C.diff antigen glutamate dehydrogenase
- **Toxin-** Tissue culture cytotoxicity assay test for toxin B
- **Stool Culture-** Most sensitive

Public Health Concern

C. difficile has been classified by the CDC as one of the most urgent antibiotic-resistant public health threats that requires "urgent and aggressive action." It is a leading cause of HAIs resulting in ~ 500,000 infections annually in the United States, contributing to significant morbidity, mortality, and healthcare costs. [4]

Key Concepts of CDI[11]

Transmission of CDI occurs through spores

- *C. difficile* is primarily transmitted through spores that can survive on surfaces for extended periods
- These spores are:
    - Resistant to common disinfectants
        - *C. difficile spores can withstand many standard disinfectants and are not effectively eliminated by alcohol-based hand sanitizers*
    - Spread through direct contact
        - *Transmission occurs via direct contact with contaminated surfaces or through the hands of healthcare workers who have touched these surfaces*

Potential exists for long-term colonization

- Once the body has been colonized by *C. difficile*, the organism can remain undetected for a long time. This colonization poses a risk because:
    - *C. difficile remains transmissible to others*
    - The risk of disease recurrence increases, especially following subsequent *antibiotic use, which can disrupt normal gut flora again*

Development of *C. difficile is* associated with antibiotic use

- The use of antibiotics is the leading risk factor for CDI
- Antibiotics disrupt the normal gut flora, allowing *C. difficile* to colonize the intestines and potentially lead to infection

Implementation of Transmission-based Precautions

- To prevent transmission, patients with confirmed or suspected CDI should be placed under contact precautions, which include:
    - *Isolation: Keeping infected patients in separate rooms or areas to minimize exposure to others*
    - *Enhanced IPC Practices: Implementing strict hygiene measures to prevent the spread of infection*
- Establish standardized protocols for discontinuation of transmission-based precautions. *(e.g., testing protocols, patient relocation)*

Utilize sporicidal disinfectants in cleaning and disinfection

- *C. difficile* spores are resistant to many standard disinfectants
- Effective prevention of transmission requires the use of EPA-approved sporicidal disinfectants for environmental cleaning

Utilize for soap-based product for hand hygiene

- Handwashing with soap and water is preferred over alcohol-based hand sanitizers for healthcare workers after caring for *C. difficile* patients. This method effectively removes spores from hands

Common CDI Prevention Strategies[11]

Hand Hygiene

- Wash hands with soap and water after caring for patients with CDI

Environmental Cleaning

- EPA-approved sporicidal disinfectant
- Clean and disinfect shared patient care equipment
- Terminal cleaning of room with sporicidal agent

Appropriate Antibiotic Use

- Appropriate use of antibiotics to prevent overuse or misuse
- Stewardship programs
- Narrow spectrum agents when possible

Appropriate Testing Protocols

- Only test if patient has significant diarrhea (e.g., ≥3 unformed stools in 24 hours)
- Ensure patient is not receiving stool softeners, laxatives or tube feedings that may cause these symptoms.

Isolation Precautions

- Contact precautions for diagnosed or suspected CDI
- Dedicated equipment
- Private rooms
- Protocol for discontinuation of isolation *(patient has been symptom free for at least 48 hours)*

IP Role in Preventing CDI

Policy & Procedure

- Develop, review and update CDI policies and procedures based on the latest guidelines and evidence-based practice
- Ensure policies and procedures address:
  - *Specimen collection, testing, and rejection*
  - *Transmission-based precautions and discontinuation of isolation*
  - *Horizontal Measures (e.g., Hand hygiene, Environmental cleaning, etc.)*

Education & Training

- Ensure staff training is sufficient for healthcare workers on CDI prevention and mitigation measures
- Partner with education teams to address gaps in training and education

Surveillance & Reporting

- Collect, analyze, and trend CDI data
- Perform deep dives with involved teams when Healthcare Facility-Onset-CDI occurs
- Provide unit-specific incidence of CDI
- Report the Community Onset and Healthcare Facility- Onset CDI to designated reporting mechanisms (NHSN, QAPI)

Performance Monitoring & Evaluation

- Audit CDI prevention practices
  - *Monitor process measures*
  - *Perform gap analysis to identify opportunities and trends*
- Provide feedback to staff using outcome and process data
- Monitor for continuous improvement

Communication & Collaborate

- Communicate facility and unit-specific CDI data to stakeholders *(unit staff, committees, leadership)*
- Actively participate or lead the CDI prevention committee
- Partner with EVS to ensure effective practices to mitigate CDI transmission
- Partner with lab to monitor data on CDI testing, results and rejection
- Partner with Antibiotic Stewardship teams on CDI reduction efforts

Product Selection & Evaluation

- Ensure IP input considered when selecting disinfectants to ensure products effective against CDI are used

CDI Questions to Consider

1. **Do we report CDI LabID data to NHSN?**
2. **What populations in the facility are being monitored for CDI?**
3. **What outcome and process measures do you track for CDI?**
4. **How is competency for specimen testing assessed?** *(e.g., sending appropriate specimens to lab)*
5. **Are there any active CDI improvement initiatives the program is working on?** *There may be unit specific or facility wide initiatives*
6. **What frequency is CDI data reported? Who is it reported to?**
7. **Are there ongoing investigations or outbreaks and where is that information located?**
8. **Does the facility have a formal CDI Prevention Committee? If so, is the IP a member and how often do they meet?**

Additional questions on the next page-→

Notes

CDI Questions to Consider

9. **When was the last CDI Gap Analysis performed?**
10. **What products are used to clean CDI rooms and equipment?**
11. **What is the CDI testing protocol?** *(e.g., PCR only, Two-step toxin + PCR)*
12. **Is there a nurse-driven CDI testing protocol?**
13. **What is the laboratory's role in CDI testing?**
14. **Will lab reject specimens?**
15. **What is the specimen rejection rate for the facility?**
16. **What is the protocol for discontinuation of isolation?**
17. **What are the CDI prevention activities within the Antimicrobial Stewardship Program?**

Notes

Additional Notes

Notes

Week 6 Review

Internal Policies:

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ Isolation removal protocols			
❑ Special cleaning protocols for MDROs			
❑ Flagging based on resistance reports			
❑ *C. difficile* related policies and protocols ❑ Testing protocols ❑ Stool collection protocols ❑ Isolation Precautions			
❑ Outbreak Protocols			

Considerations for Week 6

- ❑ **Meet with Lab and/or Microbiology Leadership**
  - ❑ Use this link to access Conversation Starter Templates to aid in this conversation: https://innovateipc.org/ipc-support-center/education-and-resources
- ❑ **Consider watching Behind the Mask Webinar:** Webinars | innovateIPC.org
  - ❑ Fundamentals of Surveillance Programs Part 2
- ❑ **Consider reviewing CDC/STRIVE Training**
  - ❑ CDI Section
  - ❑ MRSA Bacteremia

For additional tools and resources visit: https://Innovateipc.org

Week 6 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics.

Primary Resources for Week 6

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
Multidrug-resistant Organisms (MDRO) Management Guidelines | Infection Control | CDC	CDC	Guideline
Preventing MDROs | HAIs | CDC	CDC	Resource
Strategies to prevent Clostridioides difficile infections in acute-care hospitals: 2022 Update | Infection Control & Hospital Epidemiology | Cambridge Core	SHEA/ IDSA	Guideline
Clinical Guidance for C. diff Prevention in Acute Care Facilities | C. diff | CDC	CDC	Guideline
HAI Outbreak Investigations Toolkit | HAIs | CDC	CDC	Resource

Week 6 References

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3. About Microbial Ecology. Centers for Disease and Control and Prevention. July 31, 2024. Accessed January 14, 2025. About Microbial Ecology | Antimicrobial Resistance | CDC

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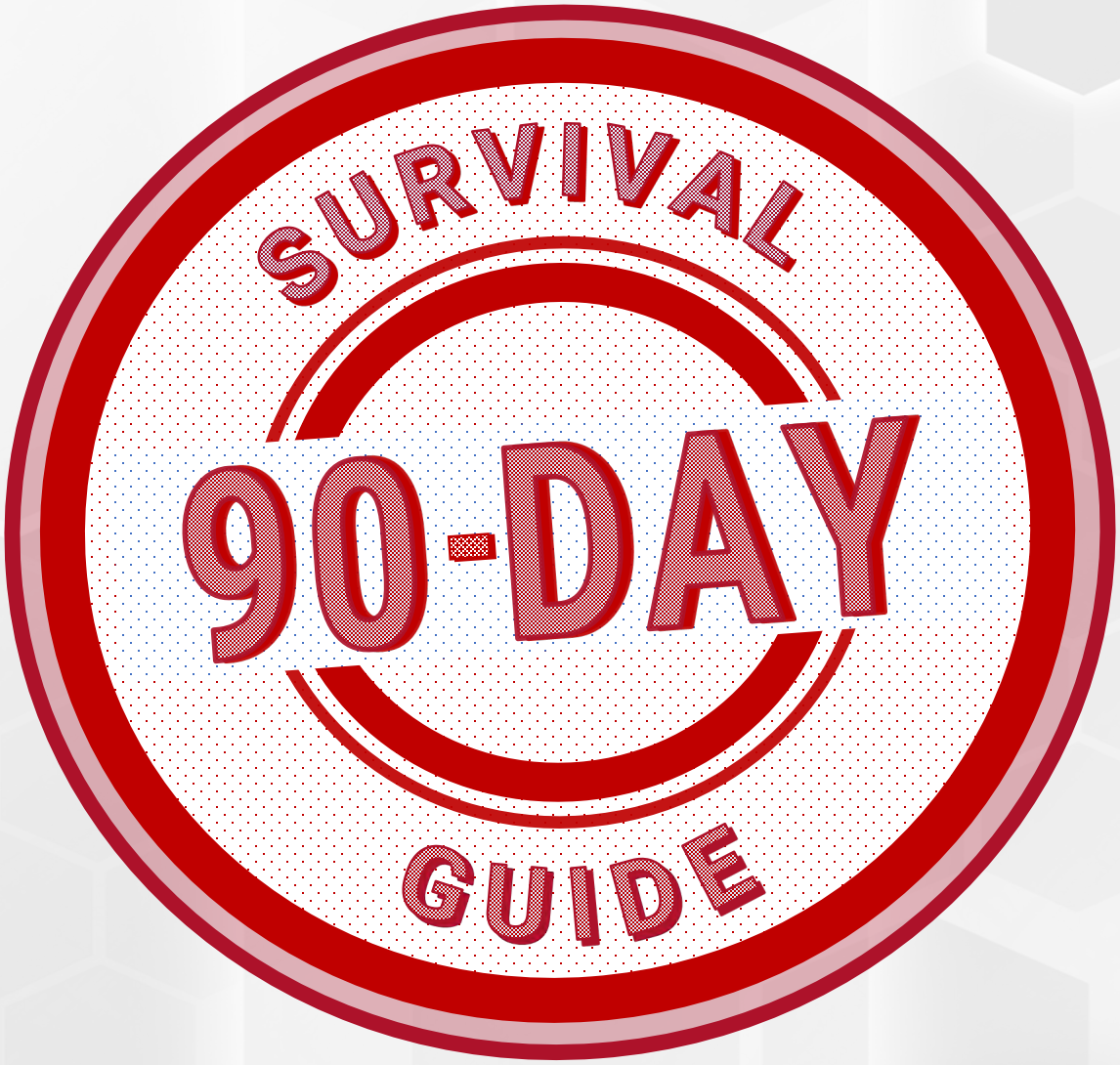


The Infection Preventionist's Orientation Workbook

WEEK SEVEN

Table of Contents

Respiratory Protection

Healthcare workers often care for patients with airborne diseases which require respiratory protection with a healthcare- approved respirator[1,2]. Respirators function by reducing the concentration of infectious particles in the air inhaled by the wearer. OSHA has standards that require employers to implement a program to protect employees from these materials.[2] Respiratory Protection Plans are the formalized process of the facility to assess, provide, and manage respiratory protection for their employees.

Respiratory Protection Plans: [2, 3]

- Protect against airborne diseases *(e.g., Tuberculosis, Measles, Varicella)* by safeguarding healthcare workers from inhaling infectious particles
- Controls and prevents the transmission of respiratory infections among patients and healthcare workers by ensuring the proper use of respirators
- Prepares and equips healthcare facilities to respond effectively to outbreaks and pandemics by establishing protocols for the use of respirators in high-risk situations

Types of Respiratory Protection[4]

Elastomeric Half Facepiece Respirators are reusable and have replaceable cartridges or filters. They cover the nose and mouth and provide protection against gases, vapors, or particles when equipped with the appropriate cartridge or filter.

Elastomeric Full Facepiece Respirators are reusable and have replaceable canisters, cartridges, or filters. The facepiece covers the face and eyes, which offers eye protection.

Filtering Facepiece Respirators are disposable half facepiece respirators that filter out particles such as dusts, mists, and fumes. They do NOT provide protection against gases and vapors.

Powered Air-Purifying Respirators (PAPRs) have a battery-powered blower that pulls air through attached filters, canisters, or cartridges. They provide protection against gases, vapors, or particles, when equipped with the appropriate cartridge, canister, or filter. Loose-fitting PAPRs do not require fit testing and can be used with facial hair.

Supplied-Air Respirators are connected to a separate source that supplies clean compressed air through a hose. They can be lightweight and used while working for long hours in environments not immediately dangerous to life and health (IDLH).

Example of an open-circuit SCBA

Self-Contained Breathing Apparatus (SCBAs) are used for entry into or escape from environments considered to be IDLH. They contain their own breathing air supply and can be either open circuit or closed circuit.

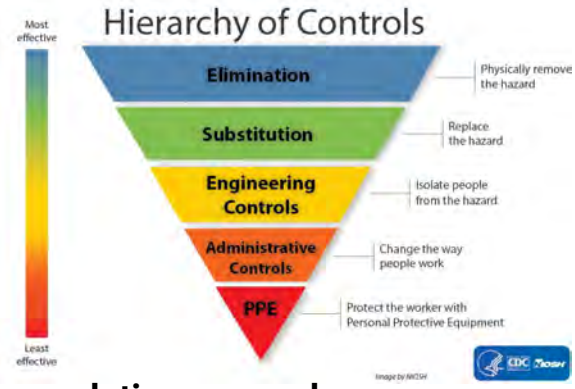
Example of an SAR/SCBA

Combination Respirators can be either a supplied-air/SCBA respirator or supplied-air/air-purifying respirator. The SCBA type has a self-contained air supply if primary airline fails and can be used in IDLH environments. The air-purifying type offers protection using both a supplied-air hose & an air-purifying component and cannot be used for entry into IDLH environments.

Key Principles of Respiratory Protection [1,2,3,4]

Apply hierarchy of controls

- Respiratory protection is considered the lowest tier of protection in the hierarchy. It should be used as a last resort after implementing engineering controls, administrative controls, and safe work practices to minimize exposure to airborne hazards



Select appropriate respirators for facility and populations served

- Respirators should be chosen based of type of hazard, duration of exposure and availability
- Persons (E.*g.*, *patients, visitors, staff*) who have not been fit tested per facility protocol should not use respirators and should don surgical masks as necessary.

Ensure proper fit and testing of respirators

- To ensure effective respiratory protection, the following steps should be implemented:
  - *Medical Evaluation: Conduct evaluations for all users to determine their ability to wear respirators safely*
  - *Annual Fit Testing: Perform fit testing at least once a year, and re-test whenever there are changes in the user's facial structure (e.g., weight loss, facial surgery)*
  - *Variety of Sizes: Provide a range of respirator sizes to accommodate all staff members*
  - *User Seal Checks*: *Train users to perform seal checks before each use to ensure a proper fit*
- Facial hair may affect respirator fit and alternative strategies should be considered for these healthcare workers

Maintain access to respirators

- Ensure that respirators are readily available at the point of use, allowing healthcare workers to access them quickly when needed

Provide education and training

- Understanding Use: Educate staff on when and how to properly use respirators.
- Safe Doffing Procedures: Train employees on how to safely remove respirators to minimize contamination risks
- Just-in-Time Training Process: Implement a process for providing immediate training on respirator use when new hazards or situations arise

IP Role in Respiratory Protection Plan

Policy & Procedure	• Partner with Occupational Health and other relevant departments to develop, review and update standardized protocols and procedures for respiratory protection and the formalized Respiratory Protection Plan
Education and Training	• Ensure that healthcare workers receive adequate training on the proper use of respirators, including when to use them and how to doff them safely • Partner with education teams to address any gaps in knowledge or skills among staff
Surveillance & Reporting	• Partner with Occupational Health to monitor for employee exposures • Perform surveillance and monitor for airborne transmitted diseases • Report relevant data to designated reporting mechanisms *(e.g., NHSN, QAPI, ICC)*
Performance Monitoring & Evaluation	• Perform regular audits of respirator use practices to ensure compliance with established protocols • Provide feedback and coaching to staff based on these audits to promote continuous improvement
Communication & Collaboration	• Communicate necessary updates regarding circulating pathogens and updated guidelines • Collaborate with Occupational Health, Supply Management and other relevant departments to ensure a standardized respiratory protection program is in place
Product Selection & Evaluation	• Ensure IP is allowed to provide necessary input into decisions related to infection prevention • Partner with supply management to ensure necessary respirators are at the facility • Ensure sufficient backstock of PPE and respirators • Evaluate alternatives when there is a supply shortage

Respiratory Protection Questions to Consider

1. **Is there a specific individual or department responsible for overseeing the respiratory protection program?**
2. **What procedures are in place for fit-testing respirators?**
3. **What is the process for fit testing?**
   - **Frequency**
   - **Method- Qualitative or quantitative or both?**
4. **How are employees medically evaluated for respirator use**
5. **What is the protocol if someone fails fit testing?**
6. **What respiratory protection is available in your facility? (*e.g., N95, PAPR, CAPR, Elastomeric respirators*)**
7. **What training is provided to staff regarding respiratory protection?**

Additional questions on the next page →

Notes

Respiratory Protection Questions to Consider

8. **What is the frequency of training and education?**
9. **Are employees trained for each respirator types they are allowed to wear if they are given a choice *(e.g., N95 vs. PAPR)***
10. **How is the maintenance and storage of respirators managed?**
11. **What is the current backstock of respirators at the facility? *(e.g., 45-day supply of N95 respirators on hand)***
    - **How is backstock stored?**
    - **How are outdates managed?**
    - **How is product integrity maintained?**
12. **Are there procedures for cleaning, inspecting, and storing respirators?**
13. **How is compliance with the respiratory protection program monitored?**

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Additional Notes

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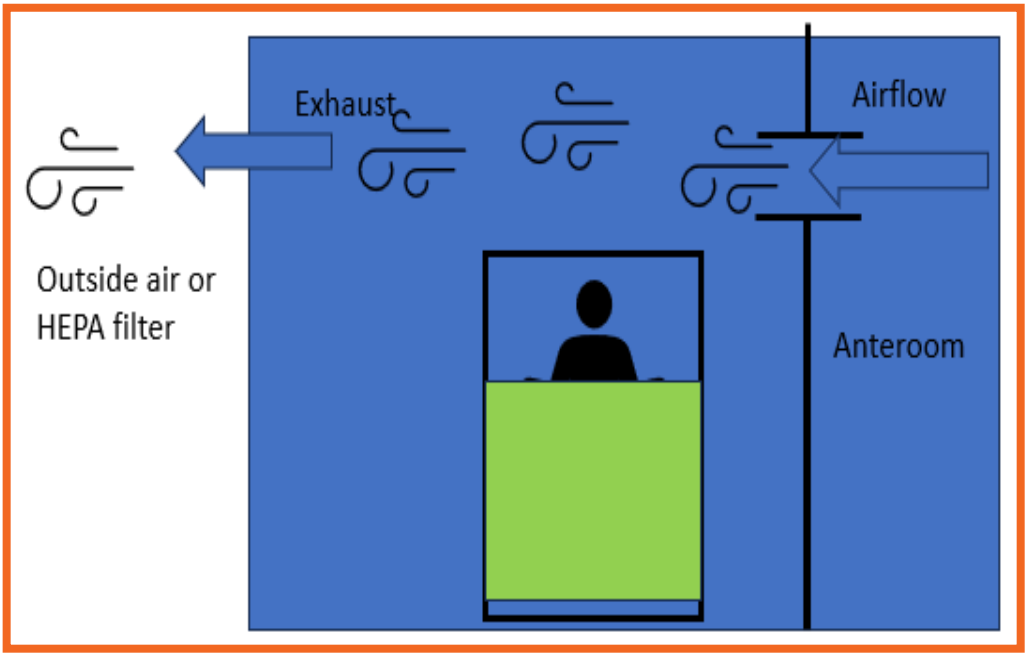
Airborne Isolation

Airborne Precautions should be implemented for any patient known or suspected to be infected by pathogens transmitted through the air in order to minimize the risk of transmission in the facility.[1] Infectious diseases transmitted through the air are typically characterized by the small droplet nuclei size (< 5µm) of the pathogen and the ease of the organism to remain suspended in the air.[1] Common pathogens that are easily transmitted through the air include measles, pulmonary tuberculosis, smallpox, and chickenpox (varicella). Airborne Infection Isolation Room (AIIR) are a form of engineering control in healthcare facilities intended to quickly remove potentially infectious aerosols.[5] These rooms are typically single- occupancy and engineered with specialized ventilation capabilities to aid in safe containment of the infectious aerosols.



AIIRs are designed with specific engineering requirements and controls to ensure they maintain negative pressure relative to adjacent corridors. Negative pressure is crucial for preventing the escape of potentially infectious aerosols into surrounding areas. Airflow in AIIRs is engineered to pull air from the corridor into the patient room, ensuring that airborne particles are contained within the isolation room. Exhausted air is directed to the outside environment (either directly or through HEPA filtration.) Once exhausted, the particles are dispersed into the outside air, where they are diluted and less likely to cause transmission.

Key Principles for Airborne Isolation[1, 5]

Implement requirements for AIIR

- Negative pressure (Pressure Differential of >-2.5 Pa to the corridor)
- 6-12 Air Changes per Hour (ACH)
  - This requirement is dependent on the age of your facility
  - Any new or updated AII Room should have ≥12 air exchanges per hour per the FGI guidelines
- Directly exhaust room air to the outside OR recirculate through a HEPA filter
- *Anterooms are not required but may be useful in helping to maintain negative pressure and provide a buffer zone for donning and doffing*

Utilize PPE consistently and appropriately

- HCW should wear a fit tested N95 or higher (e.g., PAPR)
- Other PPE (*gown, gloves, eyewear*) may be indicated depending on the pathogen

Limit patient movement outside of AIIR to essential medical purposes only

- If transport is necessary, the patient should wear a surgical mask
- Coordinate with receiving area to ensure IPC precautions are in place *(e.g., room downtime to allow for sufficient air exchanges between patients)*

Limit room entry

- Restrict access to essential healthcare workers
- Keep door closed when not in use to maintain negative pressure
- Consider safety measures for visitors *(e.g., limit visitation, education of risks, provision of PPE)*

Implement signage and communication methods

- Signage indicating airborne isolation should be posted to alert HCW and visitors

Monitor AIIR daily (while occupied)

- Monitor negative pressure *(e.g., tissue, smoke, flutter strips)*
- Monitor air exchanges

Develop protocols if AIIRs are NOT available

- Use portable HEPA filtration units
- Consider relocation of patient away from other rooms
- Determine the amount of time necessary for the room to be out of service to allow for the appropriate number of air exchanges (typically an hour)

IP Role in Airborne Isolation

Policy & Procedure

- Develop, review and update Airborne Isolation policies and procedures based on the latest guidelines and evidence-based practice
- Ensure policies and procedures related to airborne isolation appropriately reflect requirements to minimize risk of transmission

Education & Training

- Partner with training teams to provide education and training for healthcare workers on airborne isolation practices, including the proper use of PPE and protocols for patient care
- Address gaps in training to ensure proper practices

Surveillance & Reporting

- Perform surveillance and monitor for airborne disease and potential transmission in the healthcare system
- Request for facilities to report data and preventative maintenance at committee meetings *(e.g., ICC)*

Performance Monitoring & Evaluation

- Partner with units and facilities to ensure AIIR are being monitored, and that data are logged and reported
- Perform rounds and audits of AIIR and airborne isolation practice while the rooms are occupied
- Determine the location and number of AIIR in the facility
- Identify rooms and departments where Aerosol-Generating Procedures (AGPs) are performed

Communication & Collaboration

- Collaborate with facilities to monitor AIIR and receive reports on testing and preventative maintenance, and compliance with airborne isolation standards
- Ensure effective communication regarding airborne isolation practices among all stakeholders

Airborne Isolation Questions to Consider

1. **Where are the AIIR located in your facility?**
   - **Consider partnering with facilities to receive a facility map of all AIIR.**
2. **How are these rooms monitored? *(e.g., central monitoring checks, daily validation with a manometer, etc.)***
3. **What protocols are followed to bring AIIRs into service?**
4. **What is the process for discontinuing airborne isolation?**
5. **Is there a report from your facility's EMR to help locate patients currently housed in AIIR?**

Additional questions on the next page →

Notes

Airborne Isolation Questions to Consider

6. **How often do the rooms undergo preventative maintenance?**
7. **When was maintenance last performed?**
8. **When was the last performance monitoring performed?**
9. **How often are AIIR monitored for performance?**
10. **Does facilities report out on AIIR at ICC or another relevant committee in the facility?**

Notes

Additional Notes

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Tuberculosis Prevention & Control

Tuberculosis (TB) Control Programs are designed to establish protocols that enable healthcare facilities to quickly identify Mycobacterium tuberculosis (MTB), initiate rapid isolation, and begin treatment.[6] Effective TB control requires collaboration among various departments, including Infection Prevention and Control, Occupational Health, infectious disease specialists, and leadership from high-risk units. For Infection Preventionists, it is essential to understand the pathophysiology, clinical features, transmission potential, testing methods, isolation requirements and treatment protocols for TB.

What is TB?[7]

- TB is a pulmonary disease caused by the MTB complex (MTBC)
- Pulmonary TB is spread via airborne particles, which can be inhaled by individuals in close proximity to an infected person

Latent vs active TB[7]

- **Latent TB** refers to people infected with TB bacteria but who do not have TB disease
- They are not symptomatic nor contagious, but it has the potential to become active
- **Active TB** refers to people with an active pulmonary infection with symptoms. Patients are contagious and require airborne isolation in healthcare settings

Signs & Symptoms[7]

- Fever
- Cough
- Chills
- Unexpected weight loss
- Night Sweats

Testing Protocols[6,7,8]

- **Patients** Chest X-ray, Acid-fast bacilli sputum testing
- *(These cultures are collected three times, and at least 8 hours between tests)*
- **Healthcare Workers** Test upon hire and at periodic intervals depending on risk of the facility
- *Methods include Tuberculin Skin Test (TST) and Interferon Gamma Release Assays (IGRA)*

Key Principles for Tuberculosis Prevention & Control[1,6,8]

Place patients with confirmed or suspected active pulmonary TB in airborne isolation

- These precautions are essential in healthcare settings to protect both patients and healthcare workers

Monitoring of Latent TB

- Individuals with latent TB infection do not require isolation but should be monitored regularly
- While they are not contagious, it is important to manage their health to prevent progression to active TB

Application of Airborne Isolation Principles

- All key principles of airborne isolation apply to TB management
  - Maintaining negative pressure in isolation rooms
  - Using appropriate PPE
  - Implementing strict protocols for patient transport and room entry

Perform a risk assessment annually to evaluate facility TB risk

- Based on data from the previous year
- Informs the development and updating of the TB Control Plan for the facility
- Ensures TB prevention strategies are tailored to the current needs of the facility

Components of a TB Control Plan [6,8]

Risk Assessment	**Administrative Controls**	**Engineering Controls**
Personal Protective Equipment	**High-Risk Procedures**	**Department Specific TB Procedures** *(e.g., Operating Room, Lab, Autopsy)*
Education & Training	**Healthcare Provider Screening and Evaluation for TB**	**Review of Facility Exposures**

A more detailed guidance of development of a TB control plan can be found at https://www.cdc.gov/tb-healthcare-settings/hcp/infection-control/index.html

Appendix B. Tuberculosis (TB) risk assessment worksheet

This model worksheet should be considered for use in performing TB risk assessments for health-care facilities and nontraditional facility-based settings. Facilities with more than one type of setting will need to apply this table to each setting.

Scoring √ or Y = Yes X or N = No NA = Not Applicable

1. Incidence of TB

What is the incidence of TB in your community (county or region served by the health-care setting), and how does it compare with the state and national average? What is the incidence of TB in your facility and specific settings and how do those rates compare? (Incidence is the number of TB cases in your community the previous year. A rate of TB cases per 100,000 persons should be obtained for comparison.)* This information can be obtained from the state or local health department.	Community rate_____ State rate _____ National rate _____ Facility rate _____ Department 1 rate _____ Department 2 rate _____ Department 3 rate _____
Are patients with suspected or confirmed TB disease encountered in your setting (inpatient and outpatient)?	Yes No
If yes, how many patients with suspected and confirmed TB disease are treated in your health-care setting in 1 year (inpatient and outpatient)? Review laboratory data, infection-control records, and databases containing discharge diagnoses.	Year No. patients Suspected Confirmed 1 year ago _____ _____ 2 years ago _____ _____ 5 years ago _____ _____
If no, does your health-care setting have a plan for the triage of patients with suspected or confirmed TB disease?	Yes No
Currently, does your health-care setting have a cluster of persons with confirmed TB disease that might be a result of ongoing transmission of *Mycobacterium tuberculosis* within your setting (inpatient and outpatient)?	Yes No

Sample Risk Assessment Worksheet

Appendix B. Tuberculosis (TB) risk assessment worksheet

Multidrug-resistant and extensively drug-resistant TB strains have emerged in recent years, presenting additional control and treatment challenges[9]

IP Role in TB Prevention

Policy & Procedure

- Partner with relevant stakeholders to develop, review and update TB policies based on the latest guidelines and evidence-based practice
- Develop a written tuberculosis infection control plan tailored to the facility's specific needs
- Develop and implement respiratory protection plan
- Establish symptom-based screening procedures for patients and visitors

Education & Training

- Ensure training is sufficient for healthcare staff on TB management, airborne precautions, respirator use, seal checks, etc.
- Partner with education teams to address gaps in training and education

Surveillance, & Reporting

- Establish risk profile for the facility and community
- Identify areas, activities, incidences and risk of transmission
- Monitor for incidence of TB in the facility
  - *(inpatient and outpatient)*

Performance Monitoring & Evaluation

- Utilize surveillance data to conduct a TB facility risk assessment
- Monitor environmental and work practice controls
- Monitor & Audit AIIRs, PPE, Isolation practices
- Provide feedback to staff on adherence to TB risk mitigation strategies
  - *(e.g. adherence to airborne isolation protocols, respirator seal checks)*

Communication & Collaboration

- Partner with Occupational Health to monitor for potential occupational exposure leading to conversion among staff
- Collaborate to develop TB Screening Protocols for staff

Tuberculosis Questions to Consider

1. **What is the process for identifying patients as being confirmed or under investigation for TB?**
2. **Are occupied AIIR monitored daily to validate pressure while occupied?**
3. **If so, what method is used to monitor occupied AIIR rooms?**
4. **What is the process for discontinuing isolation precautions for patients with <u>suspected</u> TB at the facility?**
5. **What is the process for discontinuing isolation precautions for patients with <u>confirmed</u> TB at the facility?**
6. **What was the most recent risk level for TB at your facility?**

Additional notes on the next page →

Notes

Tuberculosis Questions to Consider

7. **How are TB labs processed at the facility (in-house vs send out)?**
8. **Are there any open or recent investigations regarding TB transmission within the facility?**
9. **Does occupational health have any reports of employees who may have had an occupational exposure?**
10. **How are employees screened for TB at the facility? How frequently?**
11. **Are there any reports of drug-resistant TB in your facility or community?**

Notes

Additional Notes

Notes

Healthcare-Associated Pneumonia

Hospitalized patients are at high risk for pneumonia and other pulmonary complications, particularly patients on mechanical ventilation.[10,11] IPs play a vital role in partnering with other disciplines on healthcare-associated pneumonia prevention practices and their implementation within facilities. There are many intervention strategies that healthcare facilities undertake.

Risk Factors[11]

- Mechanical ventilation
- Sedative use
- Oral care with chlorhexidine
- Gastric ulcer prophylaxis
- Central nervous system disease
- Trauma
- Aspiration

Common Signs & Symptoms[11]

- Fever
- Leukopenia
- Worsening gas exchange
- Purulent sputum
- Dyspnea
- Tachypnea
- Altered mental status

Pneumonia Nomenclature[10]

- **VAE-** Ventilator-associated events, ***surveillance definition***
- **VAP-** Ventilator-associated pneumonia, ***clinical definition.***
- **NV-HAP**- Non-ventilator healthcare-associated pneumonia, ***clinical definition***

Challenges in Diagnosis

"Preventing hospital-acquired pneumonia is often complicated because the diagnosis involves subjective and non-specific data" [12]

Key Pneumonia Prevention Strategies[10]

Perform regular oral care

- Implement regular oral care protocols using antiseptic agents to reduce oropharyngeal colonization by pathogens. *(e.g., tooth brushing, mouth rinses)*

Perform frequent repositioning and early mobility

- Encourage early and regular ambulation
- Frequent repositioning of immobilized patients

Evaluate current vaccination status

- Ensure patients receive recommended vaccinations to prevent pneumonia
  - *e.g., Influenza, Pneumococcal, RSV, COVID*

Implement controls to prevent aspiration

- Take measures to prevent aspiration, especially in patients with swallowing difficulties.
  - Proper positioning during feeding
  - Monitoring for signs of aspiration

Perform environmental and device cleaning and disinfection

- Clean respiratory equipment regularly according to manufacturer instructions for use (IFUs)
- Ensure that equipment is properly rinsed, dried, and stored after cleaning
  - Use sterile water for rinsing reusable respiratory equipment
  - Change ventilator circuits only when visibly soiled or malfunctioning

Perform appropriate suctioning

- Sterile endotracheal suctioning for intubated patients
- Avoid routine deep suctioning in non-intubated patients unless clinically indicated

Limit use and Duration of Ventilators and other respiratory devices

- Sedation vacation
- Weaning
- Daily assessment of need

Common HAP Prevention Strategies[10,11]

Hand Hygiene	**Avoiding intubation when possible**	**Elevated Head of Bed**
Incentive Spirometry	**Peptic-Ulcer Prophylaxis**	**Maintenance of Respiratory Care Equipment**
Patient and HCP Vaccination	**Aspiration Precautions**	**Oral Care**
Early Mobility	**Optimizing ventilation & air quality**	**Sedation Vacations & Early Breathing Trials for Ventilated Patients**

IP Role in HAP Prevention

Policy & Procedure

- Based on up-to-date practices
- Address:
  - *Maintenance procedures/ Bundles to prevent HAP and VAP*
  - *Early extubation protocols*
  - *Oral Care*

Education & Training

- Ensure staff training is sufficient for healthcare workers on healthcare-associated pneumonia prevention strategies (*oral care, aspiration precautions, and infection control measures)*

Surveillance & Reporting

- Collect and Analyze healthcare-associated pneumonia data
- Perform deep-dives when events occur
- Provide unit-specific incidence of HAP/ VAE/ VAP
- Identify trends and risk factors for the facility

Performance Monitoring & Evaluation

- Implement and monitor horizontal measures that may affect healthcare-associated pneumonia
- Monitor bundle adherence and communicate findings
- Ensure rigorous cleaning, disinfection, and proper maintenance of respiratory equipment

Communication & Collaboration

- Report to leadership and relevant committees
- Work with multidisciplinary teams and ensure effective communication of infection control policies

HAP Questions to Consider

1. **Do you report pneumonia data to NHSN? *(e.g., VAE, PedVAE, PNEU*)**
2. **What populations in the facility are being monitored?**
3. **What outcome measures do we track for VAE?**
4. **What process measures do we track for VAE?**
5. **Are there any active VAE or pneumonia improvement initiatives the program is working on? *(There may be unit-specific or facility-wide initiatives)***
6. **What frequency is VAE data reported?**
7. **Where is VAE data reported to?**

Additional questions on the next page →

Notes

HAP Questions to Consider

8. **Are there ongoing investigations or outbreaks and where is that information located?**
9. **Does the facility have a formal VAE Prevention Committee? If so, is the IP a member and how often do they meet?**
10. **When was the last VAE Gap Analysis performed?**
11. **How is patient vaccination evaluated for pneumococcal, flu, COVID, etc.?**
12. **What education and training about HAP and VAE prevention to healthcare workers receive?**
13. **Do units perform independent HAP or VAE prevention audits? If yes, how is that data reported?**
14. **How is oral care performed and documented at the facility?**

Notes

Additional Notes

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Week 7 Review

Internal Policies:

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ Respiratory Protection Plan			
❑ Airborne Isolation related polices and procedures			
❑ HVAC Procedures			
❑ Healthcare-associated Pneumonia Policy(s)			
❑ Ventilated patient management policies and procedures			
❑ Respiratory Therapy Equipment management and reprocessing policies			
❑ TB Control Plan & Risk Assessment			

Considerations for Week 7

- ❑ **Meet with Respiratory Services/ Therapy Leadership**
  - ❑ Use this link to access Conversation Starter Templates to aid in this conversation: https://innovateipc.org/ipc-support-center/education-and-resources
- ❑ **Consider reviewing** NHSN training
  - ❑ Ventilator Associated Pneumonia
  - ❑ Ventilator-associated Events Part 1 and 2
  - ❑ Pediatric Ventilator-associated Events

For additional tools and resources visit: https://Innovateipc.org

Week 7 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics.

Primary Resources for Week Seven

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
1910.134 - Respiratory protection. | Occupational Safety and Health Administration	OSHA	Resource
Isolation Precautions Guideline | Infection Control	CDC	Regulatory
Transmission-Based Precautions | Infection Control | CDC	CDC	Resource
CDC Environmental Infection Control Guidelines. Air	CDC	Guideline
1910.134 App A - Fit Testing Procedures | Occupational Safety and Health Administration	OSHA	Guideline
1910.132 - Personal Protective Equipment. | Occupational Safety and Health Administration	OSHA	Guideline
Strategies to prevent ventilator-associated pneumonia, ventilator-associated events, and nonventilator hospital-acquired pneumonia in acute-care hospitals	SHEA/IDSA	Guideline
Healthcare-Associated Pneumonia Prevention Guideline | Infection Control	CDC	Guideline
Management of Adults With Hospital-acquired and Ventilator-associated Pneumonia: 2016	IDSA/ATS	Guideline
CDC TB Prevention in Health Care Settings	CDC	Guideline
CDC TB Clinical Guidelines	CDC	Guideline
CDC TB Screening, Testing, and Treatment of U.S. Health Care Personnel	CDC	Guideline
CDC TB Risk Assessment	CDC	Resource

Week 7 References

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11. Healthcare-Associated Pneumonia Prevention Guideline. Centers for Disease and Control and Prevention. April 12, 2024. Accessed January 14, 2025. Healthcare-Associated Pneumonia Prevention Guideline | Infection Control | CDC
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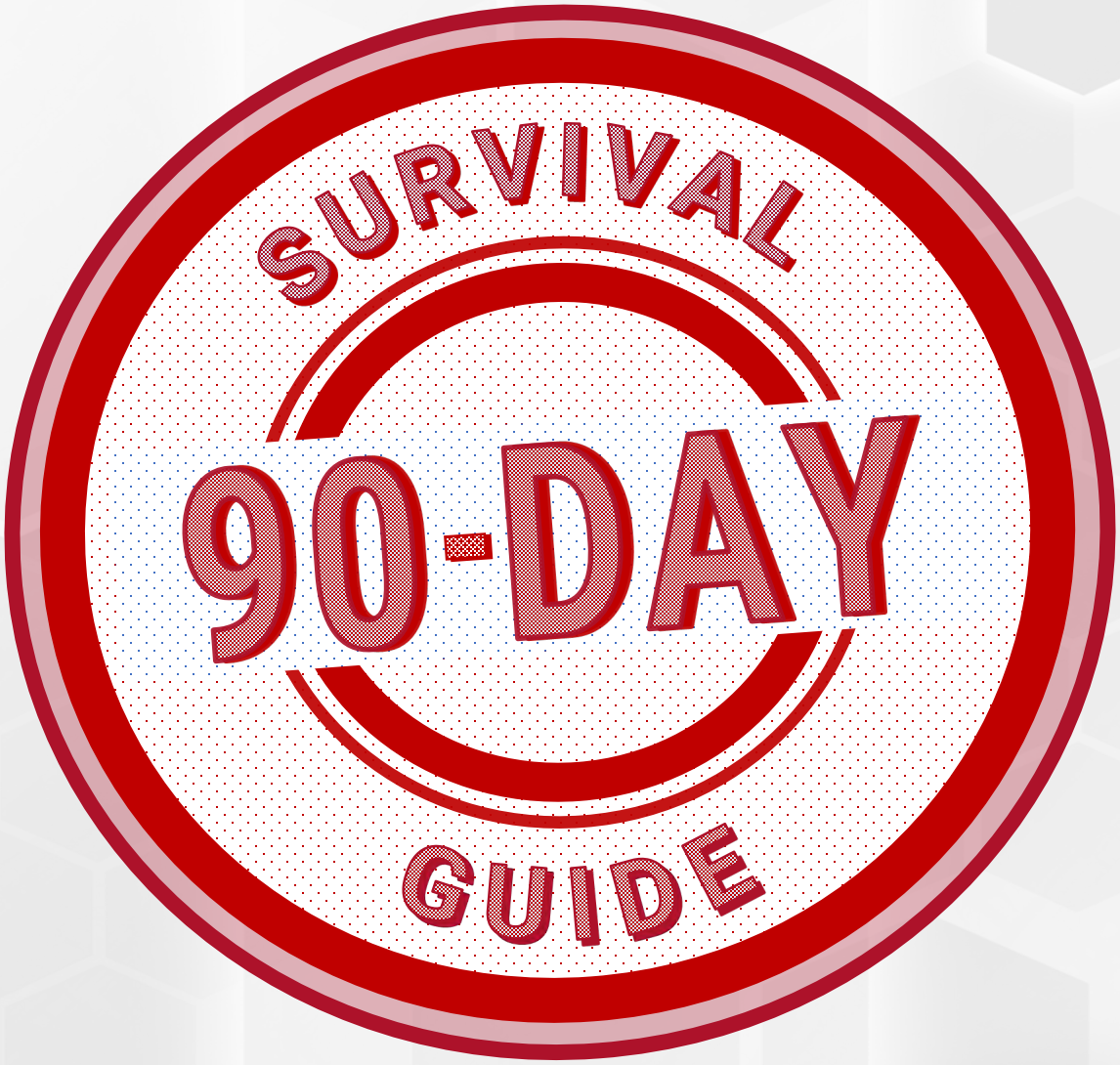


The Infection Preventionist's Orientation Workbook

WEEK EIGHT

Table of Contents

Surgical Site Infections

Surgical Site Infections (SSI) are a common HAI that can occur at the site of a recent surgical procedure. SSIs cause significant morbidity and mortality and are a major contributor to hospital readmissions, with approximately 3% of patients who develop an SSI dying because of the infection.[1, 2] IPC programs are crucial in partnering with surgical services, environmental services, facilities, and device reprocessing personnel to implement strategies to minimize the risks of patients developing SSIs.

SSIs can occur at different layers of the skin involved during surgical procedures and may affect either a primary or a secondary incision

Incisional

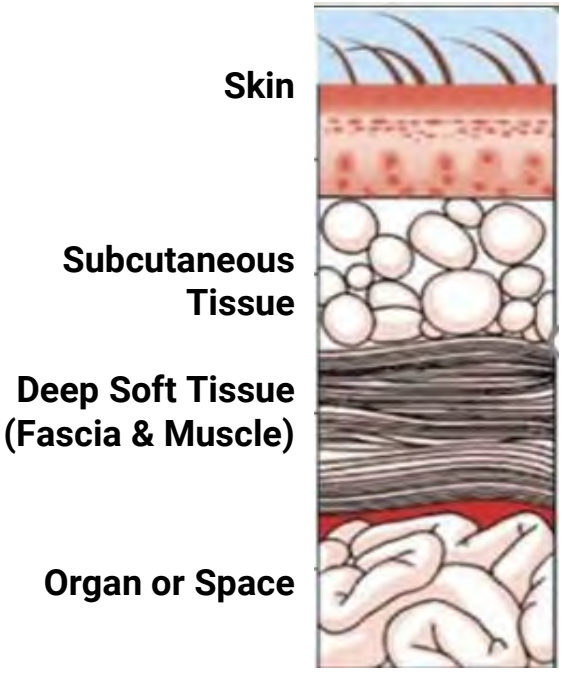
- Superficial: Involve only the skin and subcutaneous tissue
- Deep: involve muscle and facial layer

Organ/Space

- Involve any part of the anatomy that is not part of the incisional opening[3]

Signs & Symptoms of SSI[3,4]

- Fever
- Purulent drainage from site
- Site pain & tenderness
- Site erythema & heat
- Site swelling



Modified from Horan et al

Key Principles of SSI Prevention[1,2]

Prepare the patient for procedure

- Pre-operative bathing
- Proper hair removal (should be done with clippers rather than shaving)
- Surgical skin prep with alcohol and antiseptic solution
- Device Placement *(IV-line access, catheter, etc.)*
- Timing and selection of antimicrobials for the procedure
- Nasal decolonization for certain procedures

Prepare personnel for procedure

- Clean and appropriate surgical attire work by procedure staff (cap, scrubs, shoe covers, beard cover, etc.)
- Proper surgical hand scrub

Prepare the environment for procedure

- Environmental cleaning of OR
- Maintain optimal humidity, temperature and airflow
- Waste Management

Manage processes during the procedure (intraoperative)

- Management of OR traffic
- Maintenance of a sterile field and use of sterile technique
- Inspect instruments prior to use
- Keep instruments moist during procedure
- Antimicrobial administration and redosing as indicated for duration
- Patient warming for normothermia

Manage process post procedure

- Wipe instruments and keep moist after use
- Transport instruments to Sterile Processing immediately
- Implement strategies to optimize wound healing

Consider implementation of additional SSI prevention strategies

- Inspect instruments prior to use
- Giving antimicrobials for the procedure

Common SSI Prevention Principles [1,2]

Interventions to decrease the risk of SSIs occur at every stage of the operative process. Below is a list of some common topics to consider.

Pre-Hospital Optimize patient health	Preoperative Preparation of patient & surgical environment	Intraoperative Optimize environment & IPC measures	Postoperative Recover patient & optimize wound healing
Glycemic control	Glycemic control	Glycemic control	Glycemic control
Smoking cessation	Normothermia	Normothermia	Normothermia
Nasal Decolonization	Nasal Decolonization	Antisepsis	Wound management
Obesity management	Antibiotic timing & Selection	Attire	Education
	Hair removal protocols	Traffic	
		Antibiotic redosing	
		Positive airflow	

IP Role in SSI Prevention

Policy & Procedure

- Based on up-to-date practices and recommendations
- Address:
  - *Preparation of patient*
  - *Preparation of surgical personnel*
  - *Surgical environment*
  - *Pre/Intra/Post operative processes*

Education & Training

- Ensure that training programs adequately prepare healthcare workers on SSI prevention strategies, including patient education regarding infection risks

Surveillance & Reporting

- Collect and analyze SSI data (*see week 1 for more information on SSI surveillance*)
- Perform deep dives with involved teams when SSIs occur
- Monitor data from the surgical environment
- Provide surgeon-specific SSI data

Performance Monitoring & Evaluation

- Audit SSI prevention practices and provide feedback to staff
- Monitor for process measures in the pre, intra, and post operative environments
  - *(e.g., surgical scrub, surgical preparation, environmental cleaning, device transport)*

Communication & Collaboration

- Actively participate or lead the SSI prevention committee
- Provide surgeon specific SSI data for quality improvement
- Collaborate on quality improvement strategies
  - *(e.g., ERAS, Surgical Care Improvement, etc.)*

Product Selection & Evaluation

- Evaluate products for the pre, intra, and post operative periods
- Standardize products throughout the facility to ensure consistency in practices

SSI Questions to Consider

1. **Do you report SSI data to NHSN?**
2. **What procedures are being monitored?**
3. **Does the facility participate in any SSI databases besides NHSN?**
4. **How are SSIs identified?**
5. **Does your facility use automated surveillance software for SSI surveillance?**
6. **What outcome measures do we track for SSI?**
7. **What process measures do we track for SSI?**
8. **How is competency for SSI prevention strategies assessed?**
9. **Are there any active SSI improvement initiatives the program is working on?**
   There may be unit-specific, procedure-specific, or facility-wide initiatives*

Additional questions on the next page →

Notes

SSI Questions to Consider

10. **What frequency is SSI data reported? Who is it reported to?**
11. **Are there ongoing investigations or outbreaks and where is that information located?**
12. **Does the facility have a formal SSI Prevention Committee?**
13. **If yes, is the IP a member and how often do they meet?**
14. **When was the last SSI Gap Analysis performed?**
15. **What has the hospital's SSI trend been?**
16. **Is there a calculated Standardized Infection Ratio (SIR) for the procedures that are in-plan.**
17. **Does the facility have procedure bundles or ERAS protocols in place?**
18. **What is the status of this implementation or evaluation? Has their efficacy and performance been evaluated?**

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Additional Notes

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Device Reprocessing

Cleaning, disinfection, and sterilization of healthcare devices are essential processes needed to prevent HAIs. These practices eliminate or reduce harmful pathogens on medical devices, instruments, and surfaces, thereby minimizing the risk of transmission when those devices are used on patients.[6] Effective knowledge and implementation of device reprocessing procedures ensure that healthcare facilities can minimize infections through rigorous cleaning, disinfection, and sterilization. Proper reprocessing is crucial for both invasive and non-invasive medical devices to maintain patient safety.

Key differences between cleaning, disinfection, & sterilization[5]

Cleaning: Removal of contamination from a surface, e.g., remove bioburden

- Visible (blood, tissue, dust)
- Non-visible (bacteria, virus)

Disinfection: Eliminates many or all pathogenic microorganisms, except bacterial spores, on inanimate objects

Sterilization: The eliminates all forms of microbial life including spores from an inanimate object

Device Reprocessing[6]

Spaulding Classification is a system used to determine the level of disinfection or sterilization required for medical devices and instruments based on their intended use

Category (Spaulding Class)	Definition	Examples	Minimum reprocessing requirements
Non-critical	Objects that touch only intact skin	Blood pressure cuffs, stethoscopes, high-touch patient care items	Low-level disinfection
Semi-critical	Objects that touch mucous membranes or non-intact skin	Endoscopes, laryngoscopes, Respiratory Therapy equipment, Vaginal specula	High-level disinfection (HLD)
Critical	Objects which enter normally sterile tissue or the vascular system	Implants, surgical instruments, needles for IV	Sterilization

IP Role in Device Reprocessing

Policy & Procedure	• Partner with reprocessing personnel and other relevant departments to develop and update device reprocessing policies and procedures for device reprocessing • Ensure policies and procedures address the reprocessing of n*on-critical, semi-critical and critical devices as well as Immediate-Use Steam Sterilization (IUSS)*
Education & Training	• Ensure staff training is sufficient for healthcare workers on device reprocessing procedures and protocols • Ensure teams provide staff education with updated IFUs and as new products come into the facility
Surveillance & Reporting	• Collect and analyze device reprocessing data • Monitor and report incidence and use of IUSS • Monitor for lab and process trends that may indicate lapses in practice • Provide data to relevant committees
Performance Monitoring & Evaluation	• Audit device reprocessing practices and provide feedback to staff • Monitor processes *(e.g., adherence to standards and manufacturer IFUs)* for non-critical, semi-critical, and critical device reprocessing

Communication & Collaboration	• Collaborate with reprocessing personnel and teams
	• Collaborate with device and product vendors
	• Utilize bi-directional communication to ensure:
	  • The IPC program is updated when new products are being introduced to the facility
	  • The IPC program shares important and relevant infection prevention information back with the reprocessing teams

Product Selection & Evaluation	• Partner with the value analysis team and relevant stakeholders to review products, devices, and their reprocessing instructions for implementation at the facility • Attempt product standardization throughout the facility

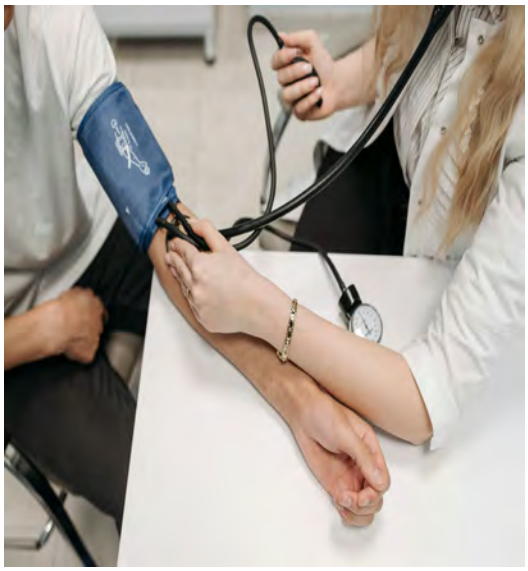
Non-Critical Devices

Non-critical devices are those that contact intact skin but do not penetrate the skin such as blood pressure cuffs, stethoscopes, crutches and exam tables. Reusable non-critical devices must undergo low-level disinfection before reuse.[6]

Types of Disinfectants for Non-Critical Medical Devices:

Low-Level Disinfectants

- Effective against most bacteria, some viruses, and fungi[7]
- Are NOT effective against bacterial spores
- *Examples: quaternary ammonium compounds, some phenolics, and some iodophors*



Intermediate-Level Disinfectants

- Effective against a broader spectrum of organisms, including mycobacteria (intermediate level disinfectants have a tuberculocidal claim)[7]
- *Examples: alcohols, chlorine-based products, and some phenolics*

IP Pro Tip

Why do we care about a "tuberculocidal" claim?

Mycobacteria have the highest intrinsic level of resistance among the vegetative bacteria, viruses, and fungi. Therefore, a germicide with a tuberculocidal claim can inactivate a broad spectrum of pathogens, including much less resistant organisms such the bloodborne pathogens (e.g., hepatitis B virus [HBV], hepatitis C virus [HCV], and HIV).[7]

Key Principles of Cleaning and Disinfection of Non-Critical Medical Devices[6]

Perform frequent cleaning and disinfection of non-critical devices at established intervals

- After each patient use *(point of care)*
- When visibly soiled
- On a regular basis

When performing low-level disinfection, ensure both cleaning and disinfection are performed *(this may require a two-step process)*

- **Step 1**- Cleaning: remove foreign materials and visible soil
- **Step 2**- Disinfection: Apply an EPA-registered low-level disinfectant according to the manufacturer's instructions, ensuring appropriate dwell time

Ensure healthcare workers follow manufacturer's instructions for the device AND chemical

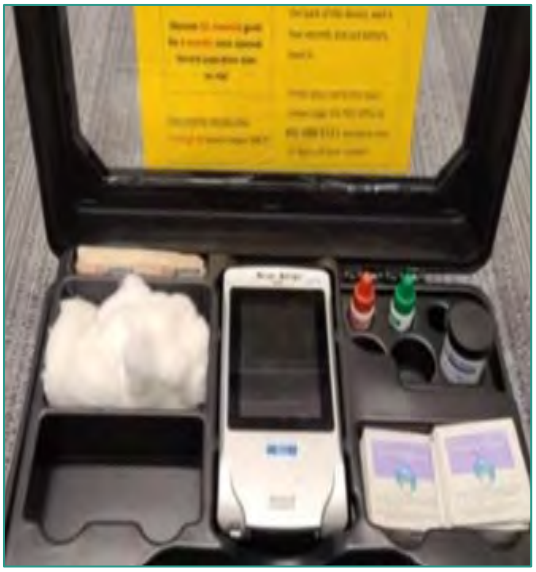
- Adhere to wet-time (also known as contact or kill time) of the disinfectant

Store devices or equipment in a manner that protects them from contamination

Ensure processes are in place to inform staff that a device has been cleaned and disinfected *(e.g., clean tag on a telemetry box)*

IP Pro Tip

In order for disinfectants to inactivate pathogens, they must remain in contact on a surface and remain visibly wet for a certain amount of time in order to achieve the products advertised kill rate.
The EPA defines this concept as dwell time



IP Pro Tip

There are multiple words used interchangeably to describe the concept of "dwell time"

They include:

- *Contact time*
- *Kill time*
- *Wet time*

Non-Critical Devices Questions to Consider

1. **What products are used in the facility for low-level disinfection?**
2. **Are these disinfectants approved by relevant regulatory agencies?** *(e.g., EPA, FDA)*
3. **What organisms are the disinfectants effective against?**
4. **What is the contact time of disinfectants in use at the facility?**
5. **Are the products standardized throughout the facility?**
6. **Are the disinfectants compatible with surfaces and equipment in the facility?**
7. **Is PPE available and used when handling products for low-level disinfection?**
8. **Are routine audits performed on low-level disinfection practices?**
9. **Are different low or intermediate level disinfectants used for certain pathogens?** *(e.g., CDI, Norovirus)*

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Additional Notes

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Semi-Critical Devices

Semi-critical devices are those that contact mucous membranes or non-intact skin like endoscopes and laryngoscopes. At minimum, require high-level disinfection which eliminates all microbial life except spores.[6]

General Steps in HLD Process

Pre-Clean
- Remove visible soil (at point of use)
- Reduce bioburden

Transport
- From point of care to reprocessing area
- Must be transported in an OSHA approved and labeled container

Leak Test
- Wet or dry leak testing
- Must be performed before
- Typically performed on channeled devices

Clean
- Minimum of 2 sinks
- Presoak, solution dilution, temperature, soak time, and rinse

Inspection
- Visual with lighted magnification
- Soil marker tests *(optional)*

Disinfection
- Manual
- Automated

Drying & Storage
- Allow device to thoroughly dry
- Store to protect from contamination and damage

Validation Monitoring
- Culturing protocols
- Audit and feedback

Transport & Patient Use
- When moving clean device from storage into transport container, touch device with clean and gloved hands

Key Principles of Semi-Critical Device Reprocessing[6]

Follow manufacturer's IFU for all devices AND chemicals used in reprocessing

- Adhere to the manufacturer's IFU for all devices and chemicals used in the reprocessing of semi-critical devices
- This ensures proper handling and effective disinfection

Perform pre-cleaning on all devices

- Residual bioburden can interfere with the disinfection process
- Conduct pre-cleaning immediately after use to remove visible soil and reduce bioburden. This step is crucial, as residual bioburden can interfere with the effectiveness of the disinfection process

Consider using automated reprocessing equipment when possible

- Whenever possible, utilize automated reprocessing equipment to enhance efficiency and consistency in the cleaning and disinfection processes

Dry and store semi-critical devices in a manner that protects them from damage and contamination

- After cleaning and disinfection, ensure that semi-critical devices are dried and stored in a manner that protects them from damage and contamination
- Consider using a vented cabinet with HEPA filtration for optimal storage conditions

Perform frequent performance monitoring and validation checks

- Regularly monitor the effectiveness of cleaning and disinfection processes by checking the minimum effective concentration of solutions used
- Conduct validation tests for devices to ensure they meet required disinfection standards

Document and perform device tracing

- Maintain comprehensive records that trace each device, including its reprocessing cycle and the specific solution used, ensuring traceability to the patient

Audit and Feedback

- Implement routine audits of reprocessing practices to ensure compliance with established protocols
- Provide feedback to staff to promote continuous improvement in infection control measures

Semi-Critical Devices Questions to Consider

1. **What types of high-level disinfection does your facility perform?** (*e.g., What chemicals and/or automated reprocessors are used?)*

2. **Where does HLD occur at your facility?**
   - **Centralized vs decentralized**
   - **Clinics**
   - **Other areas**

3. **What data elements collected by the reprocessing department are provided to the IPC program?** (*e.g., Validation testing data, culturing)*

4. **How are clean and dirty areas separated in the reprocessing space?** *Describe the methods used to maintain separation.*

5. **How do you verify pre-cleaning?**

Additional notes on the next page →

Notes

Semi-Critical Devices Questions to Consider

6. **What type of semi-critical disinfectants do you use at your facility?**
7. **Does your facility perform manual or automated HLD? Both?**
8. **Does your facility use automated leak testing or channel flushing devices during the cleaning process?**
9. **What training does the facility provide for staff involved in the reprocessing?**
10. **Have there been any recent reprocessing failures that affected a patient?**

Notes

Additional Notes

Notes

Critical Devices

Critical devices are those that contact sterile tissues or the vascular system like surgical instruments, implants, and needles. All of these devices are either single use or much undergo sterilization to eliminate all microorganisms including spores.

General Steps in the Sterilization Process

Pre-Clean
- Remove visible soil (at point of use)
- Reduce bioburden

Transport
- From point of care to reprocessing area
- Must be transported in an OSHA approved and labeled container

Cleaning
- Automated or Mechanical
- Minimum of 2 sinks
- Presoak, solution dilution, temperature, soak time, and rinse

Inspection
- Visual with lighted magnification
- Soil marker tests

Sterilization
- Ensure parameters are achieved per IFU

Packaging
- Packages must be appropriate to type of sterilization used, devices and intended use

Quality Assurance
- Biological Indicator
- Chemical Indicator
- Visual Inspection

Drying and storage
- Store in a manner to protect from contamination

Transport & Patient Use
- Monitor wrapping integrity
- Event-related sterility

Key Principles of Critical Device Reprocessing[6]

Follow manufacturer's IFU for all devices AND chemicals used in reprocessing

Perform pre-cleaning on all devices

- Residual bioburden can interfere with the disinfection process

Use validated sterilization methods for critical device reprocessing

- *Steam Sterilization*
- *Ethylene Oxide (EtO) for heat and/or moisture sensitive devices*
- *Hydrogen Peroxide Gas Plasma for heat and/or moisture sensitive devices*
- *Other- Dry heat, radiation, ozone, formaldehyde*

Ensure packaging maintains sterility

- Wrapped or rigid containers
- Check wrapper and filter integrity

Conduct sterilization monitoring for each load

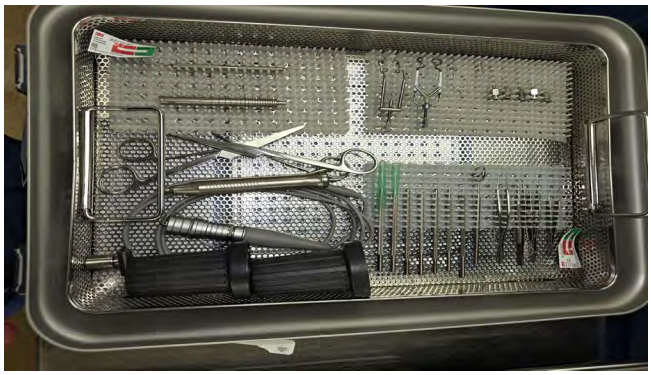
- Biological Indicators**
  - *The requirement for the use of BI's is at a minimum weekly, however best practice is daily or with each load*
  - *A Process Challenging Device (PCD) containing a BI is required for every load that contains an implantable device*
- Chemical Indicators

Maintain proper storage environments

- Protect devices and instruments from contamination and damage

Document and perform device tracing

- Load number, sterilization parameters, biological and chemical indicator results
- Devices should be traceable to the patient



IP Pro Tip

What is the difference between a chemical indicator and a biological indicator?

Biological Indicators: Used to confirm the effectiveness of the sterilization process by using highly resistant microorganisms.

Chemical Indicators: Changes color when exposed to certain conditions, indicating that the process parameters have been met.

Critical Devices Questions to Consider

1. **What types of sterilization does your facility perform?**
2. **Where does sterilization occur at your facility?**
   - **Centralized vs decentralized**
   - **Clinics**
   - **Other**
3. **What data elements collected by the Decontamination/ Sterile Processing Department are provided to the IPC program?** (*e.g., IUSS, BI failures*)
4. **How are decontamination and sterilization areas separated?**
5. **How do you verify pre-cleaning?**
6. **How do you validate washer/ disinfector?**
7. **How do you test your ultrasonic?**

Additional question on the next page →

Notes

Critical Devices Questions to Consider

8. **What types of BIs do you use?**
9. **What frequency are BIs utilized?**
10. **What training does facility provide for reprocessors and reprocessing staff?**
11. **Are there any recent reprocessing failures that reached a patient?**
12. **What preventative maintenance is performed for the sterilizers? How often?**
13. **What device reprocessing standards and guidelines does the facility follow?**
14. **What training does reprocessing staff receive that covers proper reprocessing steps and techniques?**

Notes

Additional Notes

Notes

Week 8 Review

Internal Policies

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ Surgical Site Infection Prevention related policies ❑ Perioperative skin preparation and antisepsis ❑ Surgical attire ❑ Surgical traffic			
❑ Non-critical device reprocessing			
❑ Semi-critical device reprocessing			
❑ Critical Device reprocessing			
❑ Immediate-use Steam Sterilization			
❑ Device Transport (process for transporting clean and dirty devices to various areas)			

Considerations for Week 8

Meet with:

- ❑ **Contact(s) for Device Reprocessing for your facility**
- ❑ **Operating Room and Procedural Nursing Leadership**
  - ❑ Use this link to access Conversation Starter Templates to aid in these conversations: https://innovateipc.org/ipc-support-center/education-and-resources

- ❑ **Consider watching Behind the Mask Webinar:**
  - ❑ Behind the Mask Webinar on SSIs
- ❑ **Consider reviewing** NHSN training
  - ❑ SSI Training

For additional tools and resources visit: https://Innovateipc.org

Week 8 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics

Primary Resources for Week 8

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
CDC Guideline for the Prevention of Surgical Site Infections	CDC	Resource
CDC SSI Basics	CDC	Regulatory
Strategies to Prevention Surgical Site Infections in Acute-care hospitals	SHEA/ IDSA	Resource
Reprocessing of Reusable Medical Devices | FDA Disinfection and Sterilization Guideline | Infection Control | CDC	FDA/CDC	Guideline
STANDARDS FOR INFECTION CONTROL AND REPROCESSING OF FLEXIBLE GASTROINTESTINAL ENDOSCOPES (sgna.org)	SGNA	Guideline
Multisociety guideline on reprocessing flexible GI endoscopes and accessories (giejournal.org)	ASGE	Resource
Essential Elements of a Reprocessing Program for Flexible Endoscopes – Recommendations of the Healthcare Infection Control Practices Advisory Committee (cdc.gov)	HICPAC	Guideline
Multisociety guidance for sterilization and high-level disinfection | Infection Control & Hospital Epidemiology | Cambridge Core	SHEA/IDSA	Guideline

Week 8 References

1. Berrios-Torres, S., Umscheid, C. A., Bratzler, D. W., Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection. JAMA Network. Updated June 17, 2017. Accessed January 14, 2025. Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection, 2017 | Wound Care, Infection, Healing | JAMA Surgery | JAMA Network

2. Calderwood, M.S., Anderson, D. J., Bratzler, D. W., Dellinger, E. P., Garcia-Houchins, S., Maragakis, L. L.,, Nyquist, A. C., Perkins, K. M., Preas, M. A., Saiman, L., Schaffzin, J. K., Schweizer, M., Yokoe, D. S., Kaye, K. S., Strategies to Prevent surgical site infections in acute-care hospitals. May 4, 2022. Accessed January 14, 2025. Strategies to prevent surgical site infections in acute-care hospitals: 2022 Update | Infection Control & Hospital Epidemiology | Cambridge Core

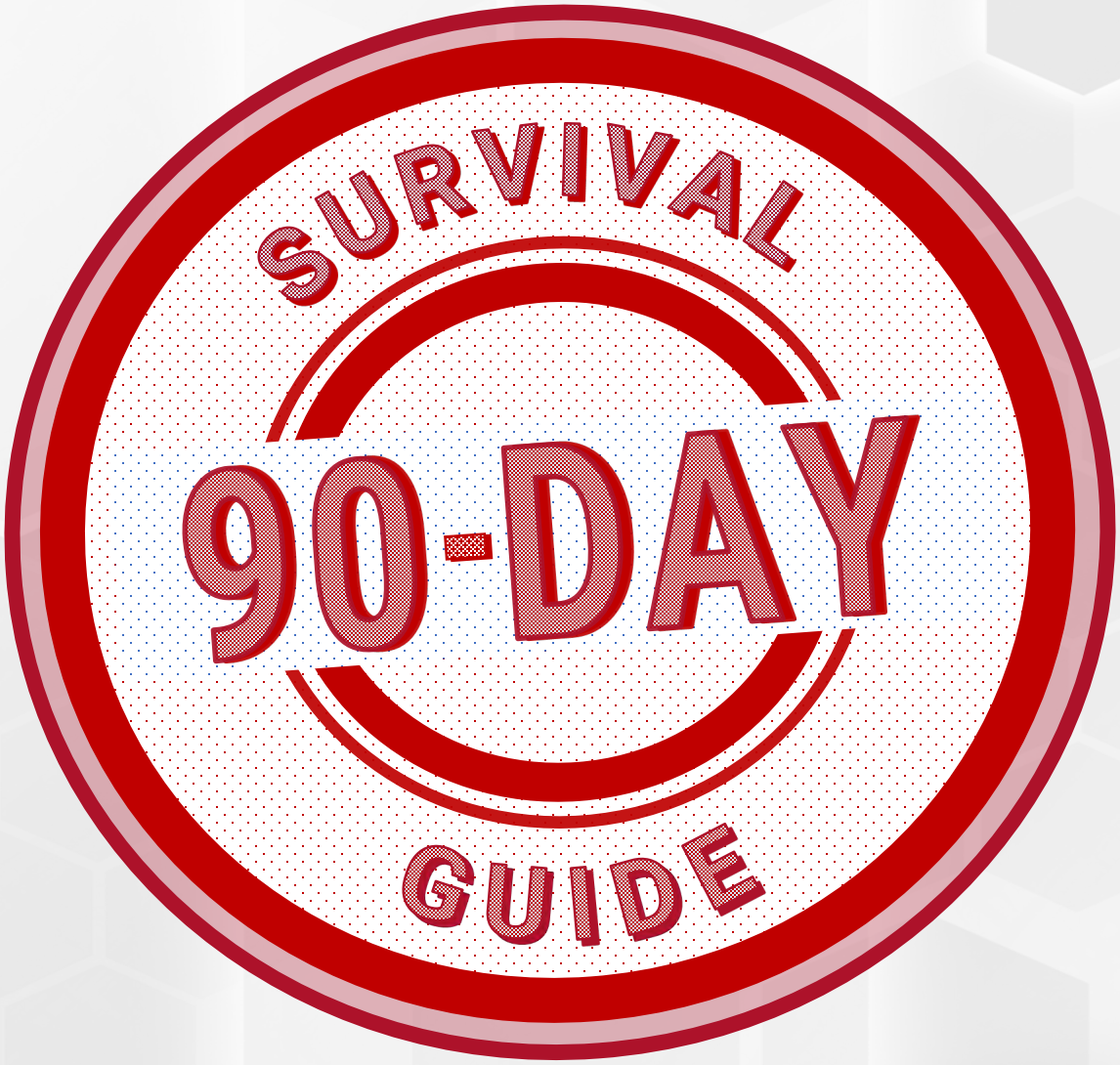
3. Surgical Site Infection. Centers for Disease and Control and Prevention. January 2025. Accessed January 14, 2025. Surgical Site Infection

4. Fry, D. E. 2018 Surgical Site Infection. APIC Text. May 20, 2018. Accessed January 14, 2025. 38. Surgical Site Infection | Prevention Measures for Healthcare-Associated Infections | Table of Contents | APIC

5. Horan, T. C., Gaynes, R. P., Martone, W. J., Jarvis, W. R., Emori, T. G., CDC definitions of nosocomial surgical site infections, 1992: a modification of CDC definitions of surgical wound infections. October 1992. Accessed January 14, 2025. CDC definitions of nosocomial surgical site infections, 1992: a modification of CDC definitions of surgical wound infections - PubMed

6. Rutala, W. A., Weber, D. J., Disinfection and Sterilization Guideline. Centers for Disease and Control and Prevention. Updated June 2024. Accessed January 14, 2025. Disinfection and Sterilization Guideline | Infection Control | CDC

7. Figure 1. Decreasing order of resistance of microorganisms to disinfection and sterilization and the level of disinfection or sterilization. Centers for Disease and Control and Prevention. December 19, 2023. Accessed January 14, 2025. Figure 1. Decreasing order of resistance of microorganisms to disinfection and sterilization and the level of disinfection or sterilization | Infection Control | CDC



The Infection Preventionist's Orientation Workbook

WEEK NINE

Table of Contents

Introduction to Environment of Care

The Environment of Care (EOC) refers to the healthcare environment and the immediate areas in which patients are cared for. The healthcare environment is easily contaminated, and opportunities exist for many reservoirs and pathways of transmission to thrive. IPC teams are very involved in monitoring the environment of care and partnering with teams to implement strategies to reduce transmission and protect patients, staff, and visitors of the healthcare facility.[1]

Environmental Services

Environmental Services (EVS) refers to the team responsible cleaning and disinfecting the healthcare environment. Colonized or infected individuals can contaminate environmental surfaces and noncritical equipment which act as reservoirs. Microorganisms from these reservoirs can be transferred to susceptible individuals in the healthcare environment. EVS and healthcare workers must take diligent and systematic efforts to clean the healthcare environment to minimize the risk of transmission. IPC teams are instrumental in partnering with EVS to ensure the EVS program is functioning at its highest level. [1,2,3]

How germs spread in the healthcare environment[1,2]

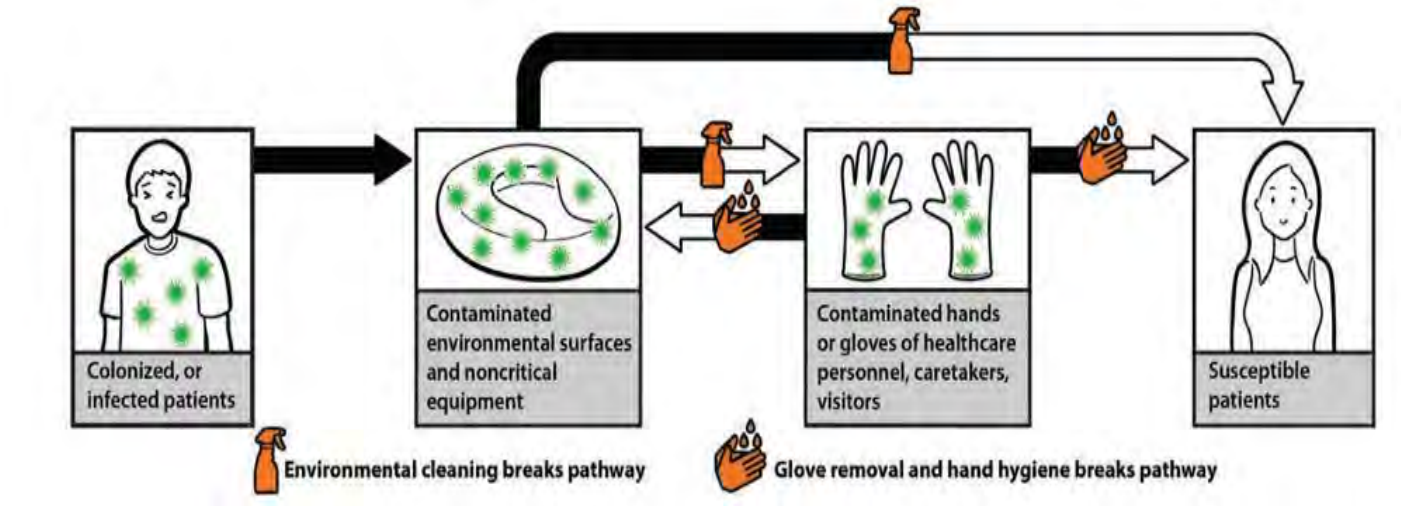
Environmental Reservoirs

- Wet Surfaces
- Dry Surfaces
- Dirt/ Dust
- Medical Equipment

Pathways (*Mode of Transmission*)

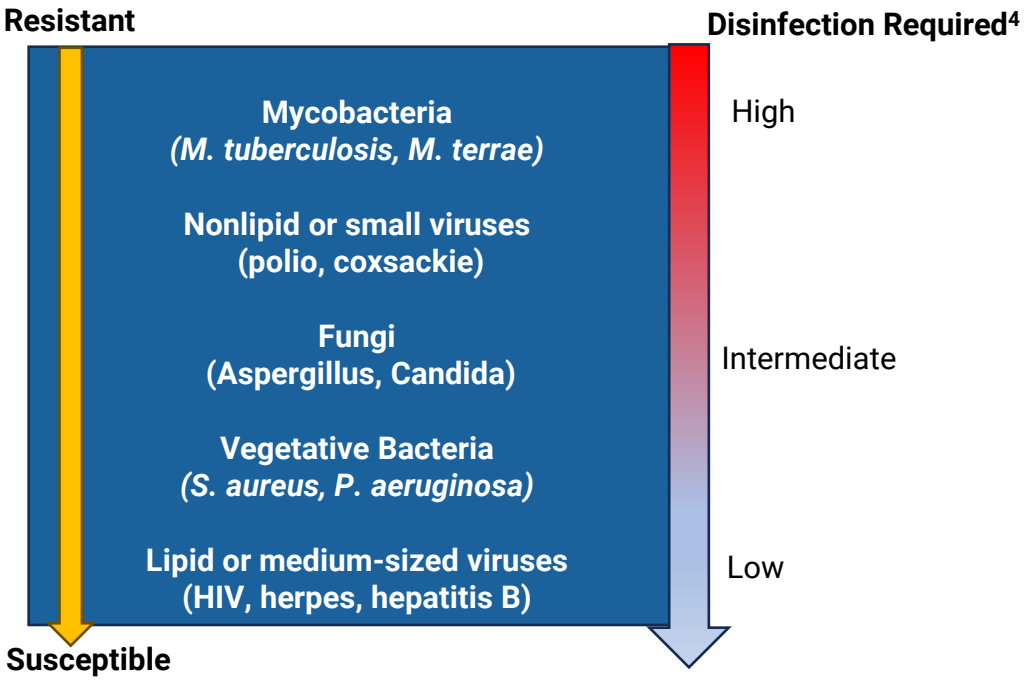
Interventions

- Hand Hygiene
- Use of PPE
- Cleaning & Disinfection



Chemical Effectiveness

The activity of germicides against microorganisms depends on many factors including the intrinsic qualities of the organism, the chemical used, and the external reservoir where the organism is.[3] Awareness of these factors helps us to understand appropriate use of disinfectants during cleaning. Environmental surfaces carry the least risk of disease transmission and can be safely decontaminated using less rigorous methods than those used on medical instruments and devices.[1]



IP PRO TIP:

IPs must understand chemical effectiveness and tuberculocidal claims to ensure proper cleaning and disinfection within their facilities.

When evaluating a product for use at the facility, the IP must ensure the product includes a tuberculocidal claim.

Commonly Used Chemicals [5,6]

Characteristics	Quaternary Ammonium (Quats)	Phenol (Phenolics)	Hypochlorite (bleach)	Accelerated Hydrogen Peroxide & Peracetic acid
Bactericidal	Yes	Yes	Yes	Yes
Virucidal	Yes Enveloped viruses (like HBV)	Yes	Yes	Yes
Mycobactericidal	No	Yes	Yes	Yes
Sporicidal *(e.g., C.diff)*	No	No	Yes	Yes

Key Principles of Environmental Services [1,2,3,5]

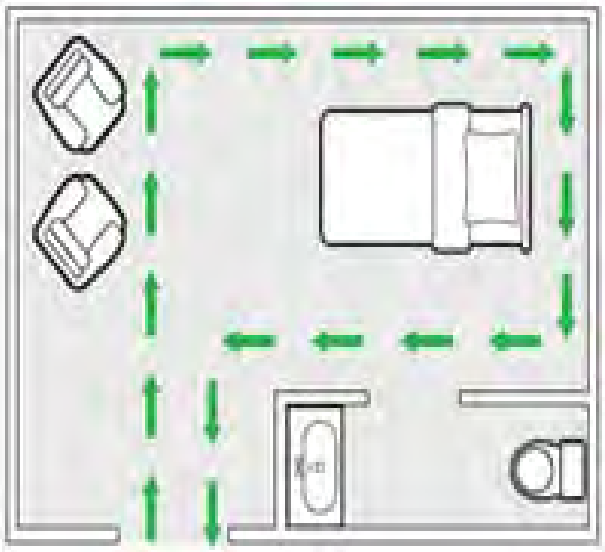
Establish cleaning categories and protocols

- Identify environmental cleaning categories based on the specific needs of the facility
- Develop and implement protocols tailored to these categories
- Identify products and chemicals for use

Determine cleaning frequency

- Assess the probability of contamination in different areas
- Consider the vulnerability of the patient population and their risk of infection
- Account for potential exposure to pathogens in determining cleaning schedules

Minimal contact surfaces	High-Touch Surfaces
• Ceilings • Floors • Walls • Windows	• Bedrails • Call light • IV poles • Sink and door handles • Bedside table



Adopt methodical cleaning approaches

- Use systematic techniques to ensure all surfaces are thoroughly cleaned and disinfected
- Clean from cleaner to dirtier areas to minimize cross-contamination
- Work in one direction *(e.g., clockwise)* and clean from high to low surfaces
- Change cleaning cloths frequently, including when they are visibly soiled, no longer damp, or after use in isolation rooms
- Clean walls, blinds, and window curtains when they are visibly contaminated, dusty, or soiled

IP Role in Environmental Services

Policy & Procedure

- Partner with EVS leadership on policy development to address chemical use, protocols, and procedures for the facility
- Ensure policy adequately addresses clear EVS cleaning roles vs other healthcare personnel *(e.g., nursing)*

Education & Training

- Ensure staff training is sufficient for healthcare workers on environmental cleaning and disinfection
- See appendix for examples of educational materials

Performance Monitoring & Evaluation

- Conduct regular audits of environmental cleaning practices among EVS staff and other healthcare personnel *(e.g., nursing units and departments)*
- Provide actionable feedback to staff to reinforce best practices and address gaps

Communication & Collaboration

- Collaborate with EVS and departments to ensure adequate environmental cleaning *(e.g., cleaning schedules, products, techniques, tools)*
- Collect data and reports from EVS related to cleaning quality
- IP to serve as a consultant to the EVS department
  - *Monitoring techniques*
  - *Chemical choice*

Product Selection & Evaluation

- Evaluate products for standard and specialty *(e.g., isolation)* cleaning & disinfection
- Standardize product throughout the facility

Environmental Services Questions to Consider

1. **What products are used for cleaning and disinfection?**
   - *High touch surfaces*
   - *Non-critical devices*
   - *Floors*
   - *Other:*
2. **Who approves the list of cleaning & disinfecting agents?**
3. **Area there any outlying chemicals being used in the facility? Is there is a way to standardize in the facility?**
4. **Which areas is EVS responsible for cleaning and which areas do clinical staff do part of the cleaning?**
5. **What is the process for cleaning and disinfecting shared equipment?**
6. **Does the facility utilize a tagging system for clean vs dirty?**
7. **Are EVS services in-house or contracted?**

Additional questions on the next page →

Notes

Environmental Services Questions to Consider

8. **Where is the schedule for cleaning frequency?**
9. **What high-touch items have been designated for frequent cleaning?**
10. **How is cleaning and disinfection monitored at the facility?**
11. **How is this data reported?**
12. **Where can you locate the Manufacturer's Instructions for Use?**
13. **How are staff competencies assessed at time of hire, annually, as needed?**
14. **In areas cleaned by clinical workers** (*e.g., nurses, care techs, providers)* **how does training and competency of the cleaning process occur?**

Notes

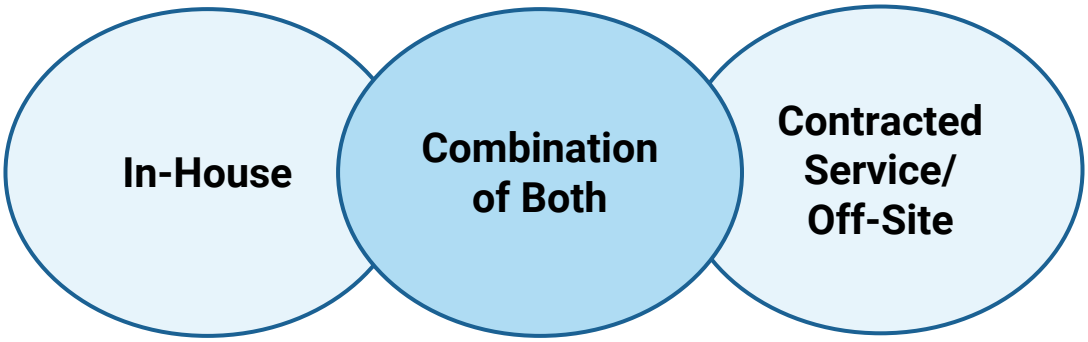
Additional Notes

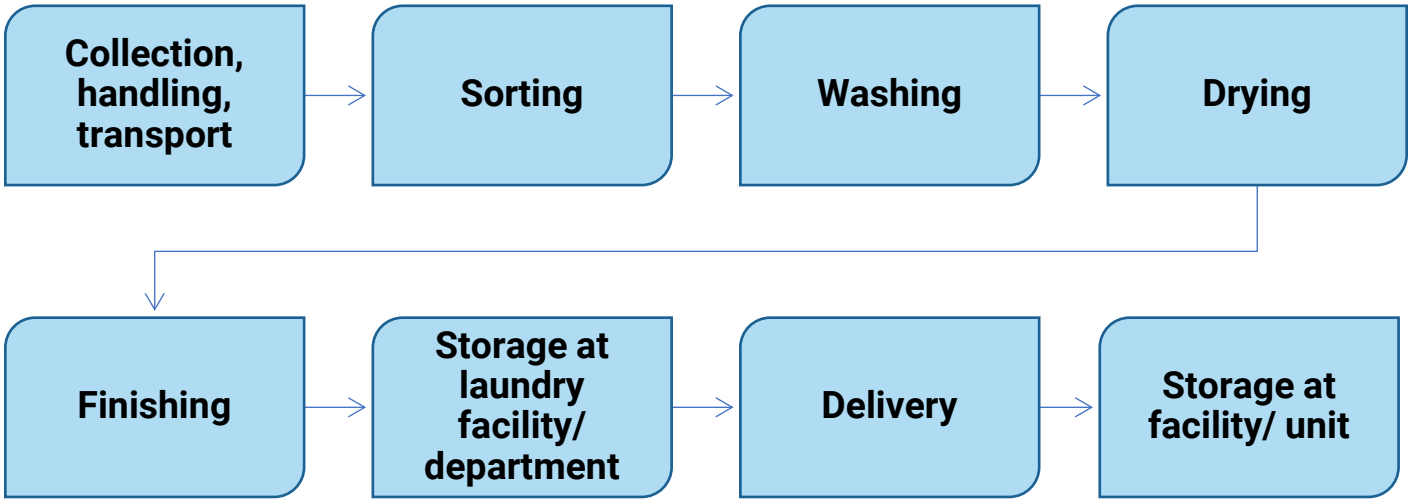
Notes

Laundry Services

Healthcare linen and laundry are textiles (bedsheets, pillowcases, towels, and patient/ staff clothing) that are generated in healthcare settings. Microbes on linens act as reservoirs and can pose a risk to patients and staff. IPC programs play an important role in ensuring processes are in place to safely manage linen at every stage of the linen process (from soiled linen generation to clean storage).[1] IPs also work to identify and mitigate the risk of lapses in the handling and reprocessing of textiles. Providing hygienically clean textiles is essential to reduce the risk of infection and ensure patient safety.

How Is Laundry Is Performed At My Facility?[1, 10]





Key Principles of Healthcare Laundry[1,9,10]

Manage soiled linen in a manner to minimize the risk of exposure

- Place soiled linen in hampers with fluid impermeable bags at point of use
- Remove any physical materials *(sharps, personal objects, trash)* from linen prior to placing in hamper
- Hampers for soiled linens in public access areas must be covered
- Laundry chutes for soiled linens, if present, should be maintained under negative air pressure to prevent the spread of microorganisms from floor to floor

Implement processes for safe transport of soiled linen

- Ensure proper transport procedures to move soiled linen to laundry areas
- Provide oversight for in-house or contracted laundry services

Ensure oversight of in house or contracted laundry services

- Refer to CDC guidelines and adhere to any state regulations or accrediting standards
    - Patient laundry should only be done in areas that meet the requirements of laundry facilities.

Protect clean linen during transport to facility and distribution to units

- Keep clean linen cart covered during transport
- Avoid extended delays at the receiving area

Protect clean linen from contamination

- Keep linen stored in controlled area or under direct observation
- Linen should remain covered and protected from the environment
- Implement a first in first out rotation

Protect clean linen while in patient room

- Keep linen away from splash zone
- Change regularly or when visibly soiled or after use

Ensure textiles are used for intended and appropriate purpose

- Textiles used in healthcare settings are disinfected during laundering and generally rendered free of vegetative pathogens (hygienically clean) but are not sterile

IP Role in Healthcare Laundry[9]

Policy & Procedure

- Partner with laundry services leadership on policy development to address the process of cleaning linen for the facility
- Ensure policy adequately addresses the process from point of dirty laundry generation to clean storage of laundry as well as other areas where healthcare laundry is generated *(e.g., surgical attire)*

Education & Training

- Ensure staff training is sufficient for healthcare workers on management and processes for healthcare laundry

Performance Monitoring & Evaluation

- Audit processes and evaluate for cleanliness for dirty laundry generation, transport, cleaning, receiving, and storage
- If healthcare laundry is performed at a third-party vendor, periodically visit to ensure appropriate processes are met
- Provide feedback to staff

Collaboration & Communication

- Collaborate with healthcare laundry staff to ensure compliance with laundry procedures
- Collect data and reports from healthcare laundry staff

Laundry Services Questions to Consider

1. **How is healthcare laundry performed at the facility, in-house vs off site?**
2. **Does the hospital utilize any healthcare laundry for staff?** (*e.g., surgical attire)*
3. **Does the facility monitor for sharps or other product that arrive to the healthcare laundry facility?**
4. **What is the process for containing soiled laundry?**
5. **How is soiled laundry transported?**
6. **What is the process for managing clean laundry?**

Additional notes on the next page →

Notes

Laundry Services Questions to Consider

7. **How is clean laundry stored at the facility?**
8. **When was the last visit to the healthcare laundry department?** (*or facility if using an offsite or third-party vendor)*
9. **How is clean laundry protected from contamination on units/departments?**
10. **If laundry is performed in house, are parameters verified and documented per the standards?**
11. **Do you have recent reports you can review?**

Notes

Additional Notes

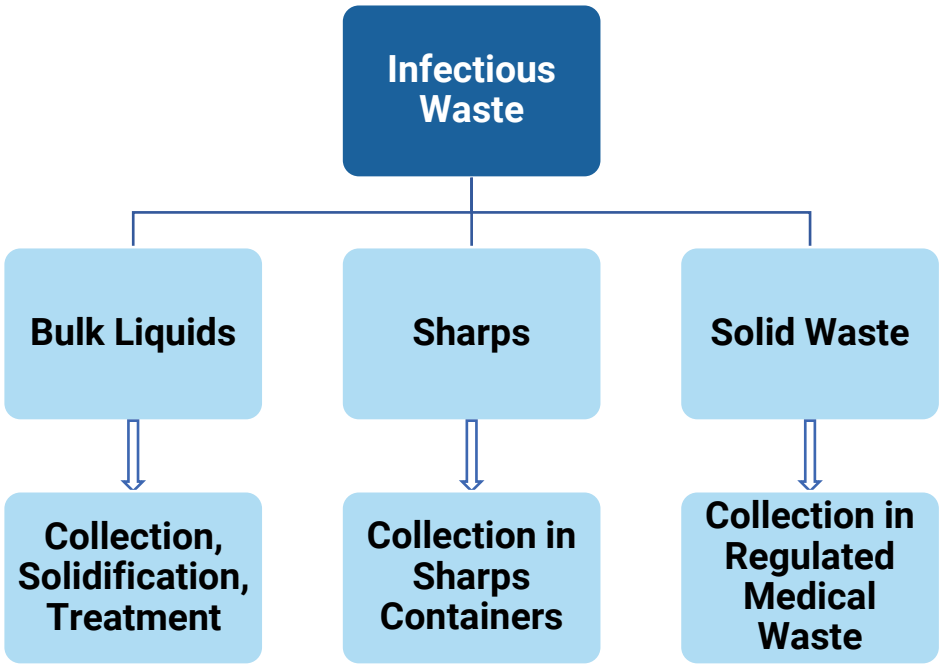
Notes

Waste Management

Healthcare facilities generate substantial amounts of waste. Improper handing of medical waste, such as sharps and other biohazardous materials can lead to disease transmission and facilities must follow strict regulations for waste disposal to prevent transmission. Effective waste management, including safe disposal practices of all waste types to minimizes the risk to healthcare workers, patients and the public. There are many types of waste produced in healthcare facilities such as regulated medical waste (RMW), non-infectious waste, hazardous chemical waste, and pharmaceutical waste in addition to others.[1]

Regulated Medical Waste[1]

- Waste generated in healthcare settings that may pose a risk of infection or harm to public health, healthcare workers, and the environment
- Some waste require specific handling, treatment, and disposal
- It includes materials that are contaminated with blood, body fluids, or other potentially infectious substances (OPIM)
    - **Sharps** *(e.g., needles, syringes, scalpels)*
    - **Blood-soaked materials** *(e.g., gauze, bandages)*
    - **Pathological waste** *(e.g., tissues, organs)*
    - **Microbiological waste** *(e.g., cultures)*



Waste Management Process [1, 11]

Designation
- Sort and discard waste into appropriate containers

Collection/ Segregation
- Begins at point of origin
- Ensure proper segregation to minimize excessive costs of RMW disposal

Packaging
- Package sharps, liquids and waste appropriately
- Label infectious waste with universal biohazard label in a red bag or container
- Handle with appropriate PPE

Storage
- Storage areas should have restricted access and labeled with biohazard symbol
- Determine storage specifications for your facility (storage time)

Transport
- Ensure internal and external transport systems protect handlers
- Utilize a waste manifest document to track the waste

Treatment
- There are four overall types of waste management: landfill, incineration, recycling, and composting

Disposal
- Treated medical waste is usually disposed of in a special area of the landfill

Contingency Planning
- Develop a plan to address unforeseen events (*e.g., HCID like Ebola)*

Staff Training & Education
- Train all healthcare workers involved in the generation handling, transport and disposal of medical waste

Key Principles of Waste Management[1,11]

Understand what is considered RMW

- Small amounts present minimal risk and are not considered regulated medical waste
- Blood-saturated materials and bulk liquids are considered regulated medical waste
- Bulk blood should be solidified if being transported on- or off-site

Appropriately segregate waste

- RMW should be discarded at point of use.
- RMW must be disposed of in an appropriate, approved, biohazardous labeled container/bag
- Other Waste:
  - Hazardous *(e.g., Chemo)* waste must be disposed of in labeled and approved container/bag
  - General waste can go into general trash bins

What is the difference between Category A and B Infectious Waste?

Waste is categorized by federal agencies to classify risk.

The Department of Transportation defines:

Category A Waste- material contaminated with a substance that is capable of causing fatal disease

Category B Waste- medical waste that is not in a form generally capable of causing fatal disease [12]

Appropriately dispose of sharps

- Needles, scalpels and sharps should be disposed of immediately after use in an appropriate rigid, puncture-resistant, closable and leakproof container for immediate disposal
- Sharps must be disposed of in labeled and approved sharps container

Perform appropriate waste handling, storage, and disposal

- Personal Protective Equipment when handling RMW
- Ensure processes are in place for minimal handling of waste (location of disposal bins)
- Transport in leak proof containers
- Waste stored in designated, secured areas

Appropriately respond to spills

- Process for blood spills
- Process for hazardous waste spills

Waste Management

IP Role in Waste Management

Policy & Procedure

- Partner with waste management and hazmat team on the waste management plan for the facility
- Ensure policy adequately addresses handling of biohazardous waste from point of generation to removal or disposal at the facility

Education & Training

- Provide comprehensive training for healthcare workers on proper waste management practices
- Include handling procedures for biohazardous, regulated medical, and hazardous waste in staff education

Performance Monitoring & Evaluation

- Audit processes and evaluate for waste handling procedures
- Perform EOC rounds in soiled hold areas to ensure compliance with processes and standards
- Provide feedback to staff

Communication & Collaboration

- Collaborate with waste management and hazmat teams on process evaluation and improvement
- Provide input on commercial waste management contracts and processes for the facility

Product Selection & Evaluation

- Assist in selecting safe and effective solutions for waste handling, such as receptacles and sharps containers
- Evaluate products to ensure they meet regulatory standards and facility requirements

Waste Management Questions to Consider

1. **Does the facility use a contracted service to handle waste?**
2. **facility have a regulated medical waste team?**
3. **Does the facility have a written waste management plan?**
4. **What type of waste is handled at the facility?**
5. **Does the facility have a process to manage Category A** *(highly infectious*) **waste? Onsite treatment?**
6. **What is the facility's process for handling biohazardous waste?**
7. **Are sharps containers located at point of use?**
8. **Are other hazardous waste containers located at point of use throughout the facility?**
9. **How is waste labeled at the facility? (***Biohazardous, Chemical, Chemo, etc.)*

Notes

Additional Notes

Notes

Week 9 Review

Internal Policies

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ Environmental cleaning related policies and procedures ❑ Approve cleaners and disinfectants for the facility ❑ Cleaning roles and responsibilities			
❑ Healthcare laundry and textiles related policies and procedures ❑ Washer/ Dryer			
❑ Waste Management Plan and related policies and procedures ❑ Contract (Service Agreement) with Waste Management Service			

Considerations for Week 9

Meet with:

- ❑ **EVS contact for the IPC Program**
- ❑ **Facilities if you haven't already**
  - ❑ Use this link to access Conversation Starter Templates to aid in this conversation: https://innovateipc.org/ipc-support-center/education-and-resources

- ❑ **Consider reviewing the Environment of Care rounding tool to round in your facility**
  - ❑ EOC Fillable Rounding Tool

- ❑ **Consider watching Behind the Mask Webinar**
  - ❑ Fundamentals in Low Level Disinfection and Environmental Cleaning

For additional tools and resources visit: https://Innovateipc.org

Week 9 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics.

Primary Resources for Week 9

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
Guidelines for Environmental Infection Control in Health-Care Facilities: Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC)	CDC/ HICPAC	Guideline
Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008	CDC	Guideline
Selected EPA-Registered Disinfectants | US EPA	EPA	Regulatory
Environmental Evaluation Working Group	CDC	Resource
Training: EVS and the Battle Against Infection | Infection Control | CDC	CDC	Resource
Healthcare Laundry Accreditation Council	HLAC	Standard
Laundry and Bedding | Infection Control | CDC SLIDE 12	CDC	Guideline
49 CFR § 173.197 - Regulated medical waste. - Content Details - CFR-2023-title49-vol2-sec173-197	US DOT	Regulatory
Transporting-Infectious-Substances-Safely-PHH50-0186-0622.pdf	US DOT, CDC. OSHA, USDA, FEMA, EPA	Regulatory
1910.1030 - Bloodborne pathogens. | Occupational Safety and Health Administration	OSHA	Regulatory

Week 9 References

1. Guidelines for Environmental Infection Control in Health-Care Facilities. Centers for Disease and Control and Prevention. Updated July 2019. Accessed January 14, 2025. Guidelines for Environmental Infection Control in Health-Care Facilities

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4. Figure 1. Decreasing order of resistance of microorganisms to disinfection and sterilization and the level of disinfection or sterilization. Centers for Disease and Control and Prevention. December 19, 2023. Accessed January 14, 2025. Figure 1. Decreasing order of resistance of microorganisms to disinfection and sterilization and the level of disinfection or sterilization | Infection Control | CDC

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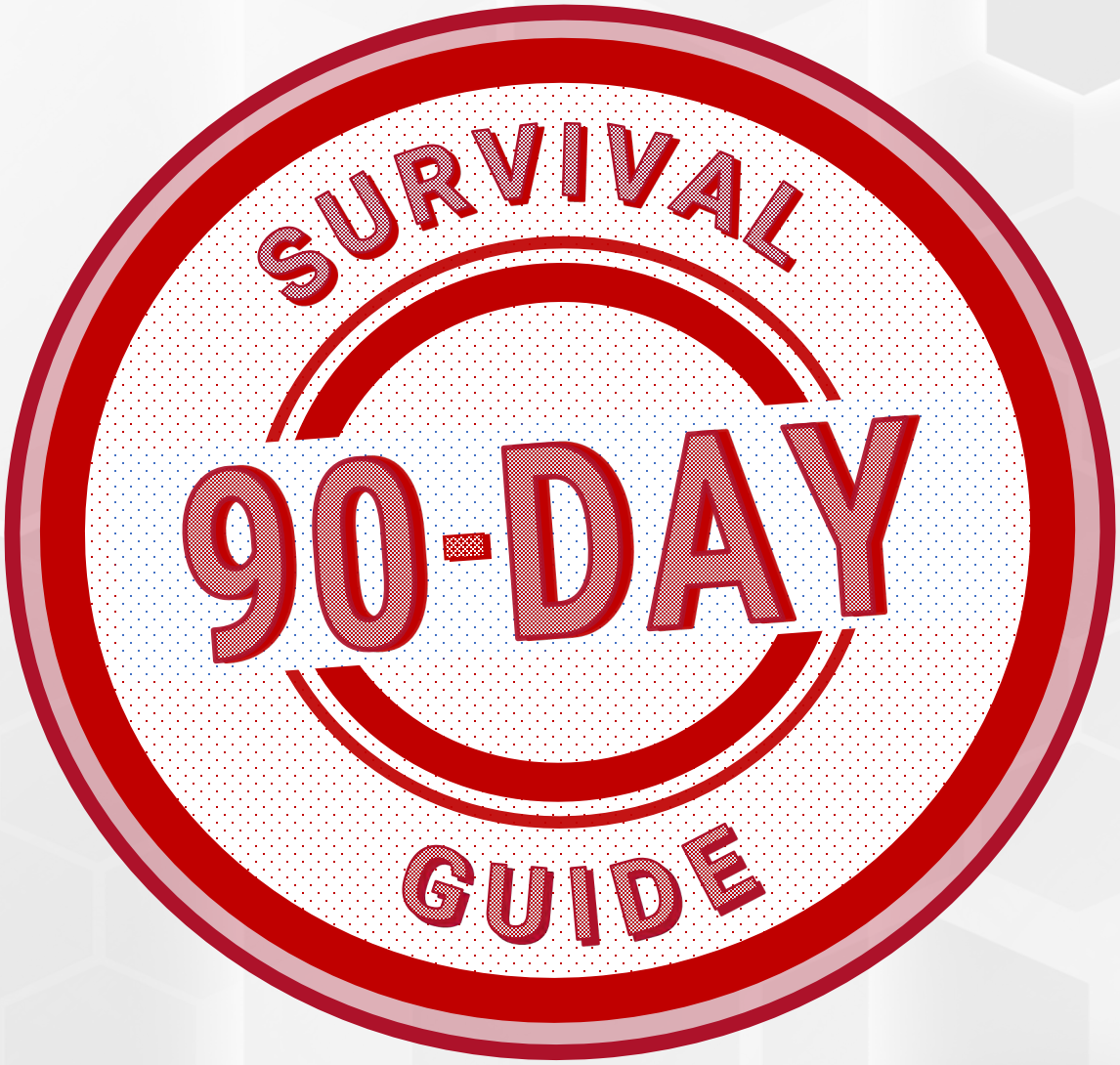

The Infection Preventionist's Orientation Workbook

WEEK TEN

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Heating, Ventilation, and Air Conditioning

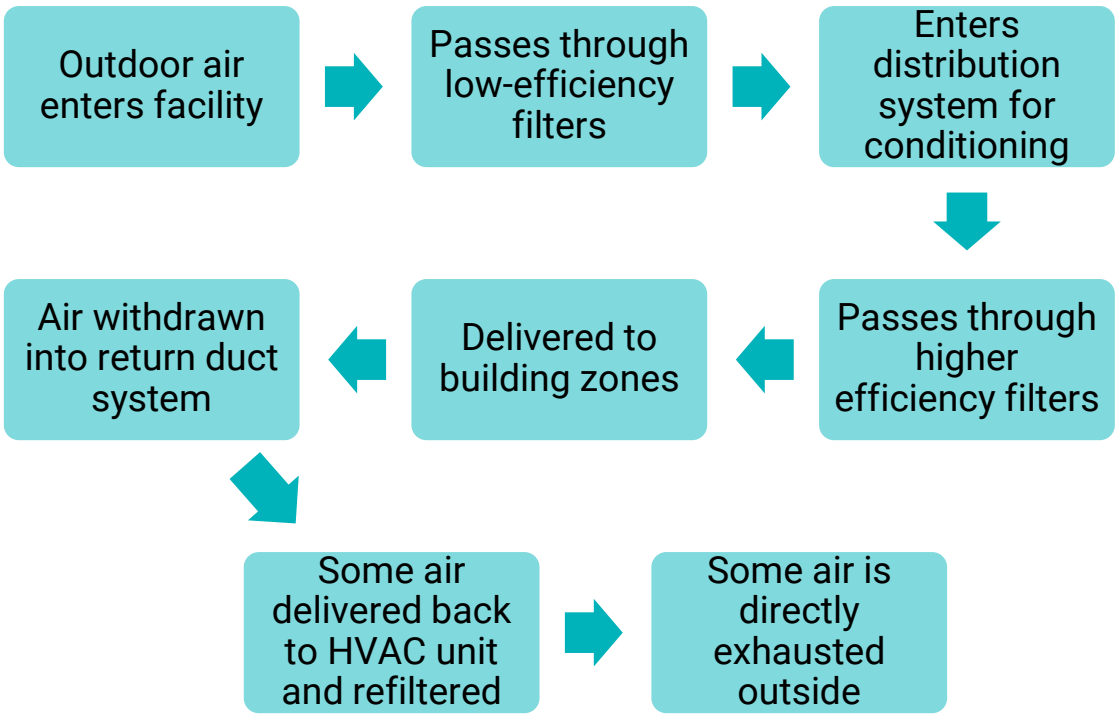
Heating, Ventilation, and Air Conditioning (HVAC) systems play a crucial role in maintaining a safe healthcare environment. These systems help control the spread of airborne pathogens such as *Mycobacterium tuberculosis*, measles virus, and *Aspergillus spp*. by ensuring proper airflow, pressurization, and filtration. Additionally, HVAC systems regulate temperature and humidity levels, which are essential for patient safety, staff comfort, and infection prevention throughout the facility.[1,2,4]

How do HVAC systems regulate airflow? [5]

HVAC Systems are designed to regulate airflow by:

- Heating or cooling of spaces
- Adjusting relative humidity of air
- Establishing directional airflow or pressurization relationships between spaces
- Filtering and diluting recirculated air
- Removing contaminated air from enclosed spaces

How Air Moves Through HVAC[5]



The Role of HVAC Systems in Infection Control [4,5]

Ventilation

- Ventilation is the movement of air within a space
- Air Changes per Hour Rates (ACH)- The number of times air is replaced in a room per hour (ACH)

Filtration

- Particulate removal from air is key to achieving good indoor air quality and is done through various filtration methods
- In healthcare, indoor air is filtered twice: first with a low-medium filter, then with a higher efficiency or HEPA filter
- HEPA filters remove 99.97% of airborne contaminants including bacteria and viruses and are essential in high-risk areas *(ORs, isolation rooms, construction areas)*

Temperature

- Temperature promotes comfort and supports infection prevention *(e.g., product storage, SSI prevention)*
- Maintain 68-75°F (20-24°C), varying by space function and ventilation standards *(e.g., ORs, cleanrooms, storage, endoscopy)*

Humidity

- Humidity is the amount of water vapor present in the air. Higher humidity means the air contains more moisture, while lower humidity indicates drier air
- Maintain 30%-60% humidity for sterile storage, comfort, fire safety, and preventing moisture and microbial growth

Pressurization

- Refers to a pressure differential to the next adjacent air space *(e.g., room, anteroom, hallway)*
  - **Positive Pressure**: Air flows out to keep contaminants out *(e.g., ORs, protective environments)*
  - **Negative Pressure**: Air flows in to contain contaminants *(e.g., airborne diseases, decontamination areas)*
  - **Neutral Pressure**: Balanced airflow

Maintenance and Testing of HVAC systems

- HVAC systems require regular preventative maintenance
  - *Duct cleaning, check airflow*
- Regular function testing should also be performed to ensure the unit is operating as expected

Key Principles of HVAC [1,3, 5]

Ensure necessary ventilation requirements are met per regulation and professional recommendations

- Laboratory
- Airborne Isolation Rooms
- Bone Marrow Transplant Units
- Compounding Pharmacy
- Sterile Processing
- Operating & Procedure Rooms

Confirm parameters are met for specialty rooms *(e.g., AIIR and protective environments like Bone Marrow Transplant rooms*) to have additional features for management of the incoming and outgoing air

- AIIR Rooms must exhaust directly outside
- Protective Environment have HEPA filtration for incoming air

Ensure processes are in place to care for patients requiring Airborne isolation

- Have standardize processes for patient placement for those with or under suspicion of having an airborne pathogen
- Ensure the use of appropriate airborne PPE when these rooms are occupied
- When patient is discharged or airborne isolation is continued, room should be including to allow for including air changes to occur before reopening or allowing staff in without PPE

Establish management processes if AII Rooms are not available

- Utilizing portable HEPA units
- Consider patient placement and scheduling to minimize the potential risk of transmission (*e.g., end of day, end of hallway*)
- Determine length of time for room closures

Partner in HVAC downtime management

- Ensure protocols are in place for HVAC system downtime and safe return to service
- Be aware of potential risks during HVAC downtime, including Increased risk of airborne transmission (possibility of fungal growth when the system is restarted)

IP Role in HVAC [1,5]

Policy & Procedure

- Partner with relevant departments and teams to develop policies and procedures related to the HVAC systems
- Partner on the development of downtime and return to service procedures for the HVAC system

Education & Training

- Partner on providing education and training for healthcare staff on HVAC procedures and parameters to monitor

Surveillance & Reporting

- Determine what departments and areas require monitoring
  - *(e.g., sterile processing, AIIR, BMT)*
- Perform surveillance and monitor for airborne disease and potential transmission through HVAC systems in the facility
- Perform investigations when airborne disease occurs within the facility or when outbreaks are suspected
- Request for facilities to report data and preventative maintenance at committee meetings

Performance Monitoring & Evaluation

- Partner with facilities and departments *(Procedural Areas, Nursing units, Sterile Processing, Pharmacy, etc.)* to ensure HVAC systems are being monitored, maintained, and compliant with standards
- Perform rounds of the HVAC systems within the facility

Collaboration & Communication

- Collaborate with facilities and other relevant departments to monitor HVAC systems and receive reports and data on testing and preventative maintenance
- Partner with facilities and other relevant departments when downtime and return to service procedures are in place

HVAC Questions to Consider

1. **What are the air changes of specialty rooms and areas within the facility?**
2. **How are they monitored?**
3. **Does the facility monitor humidity and temperature?**
4. **Are specialty areas monitored daily and are the results logged? *(e.g., Sterile Processing, Operating Rooms)***
5. **Does the facility have protocols related to filter maintenance? How often is maintenance performed?**
6. **What filtration methods used in my facility?**
7. **Are there specialty areas using other filtration methods? *(e.g., Pharmacy, Sterile Processing, Decontamination, Operating Rooms, Oncology Units, AIIR)***
8. **Does the facility have policies are procedures for the maintenance of the facility's HVAC system?**
9. **Where are the AIIRs located in my facility?**

Additional questions on the next page →

Notes

HVAC Questions to Consider

10. **Does the facility perform air sampling or particle monitoring of any areas?**
11. **Does the facility have return to service protocols after downtime?**
12. **Does the facility have downtime procedures when the HVAC is down for maintenance or unexpected shutdowns?**
13. **How are pressure differentials monitored? *(e.g., daily checks for occupied AIIR, automated alarm, central monitoring, tissue test, manometer)***
11. **Are there any active HVAC-related disease outbreaks at the facility?**
12. **Is the area outside of the patient room appropriately set up to allow for PPE donning and doffing and hand hygiene?**
13. **Do the AIIRs have an anteroom?**
14. **How many ACH do AIIR have?**
15. **Do AIIRs require special set up prior to a patient being placed in that room? If so, how long does an AIIR take to stand up?**
16. **How are AIIRs monitored in the facility?**
17. **Do any ambulatory clinics have dedicated AIIRs? If not, what are the necessary ACH if they have a patient with an airborne infection?**

Notes

Additional Notes

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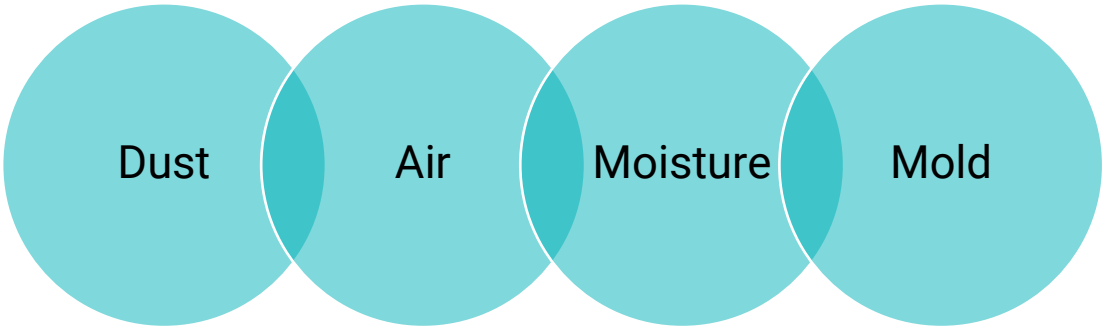
Construction and Renovation

Construction, renovation, and repair activities are common occurrences in the healthcare environment. These activities pose a risk for disease transmission because the projects disturb pathogens in the environment. Common pathogens include *Aspergillosis spp*., molds, and other contaminants. IPC programs play an important role in recommending transmission mitigation efforts for construction and renovation projects by conducting a project-specific *Infection Control Risk Assessment (ICRA).*[1, 7]



Performing an ICRA prior to construction and renovation allows for multiple teams to collaborate and finalize plans prior to the project start. By using a standardized tool and matrix to overview project risk, the team can classify and identify mitigation efforts for the project.

Approximately 5,000 secondary infections occur annually from construction, renovation and maintenance (CRM) activities. [7]

Patient Risk Group	Construction Project Type			
	TYPE A	TYPE B	TYPE C	TYPE D
LOW Risk Group	I	II	II	III*
MEDIUM Risk Group	I	II	III*	IV
HIGH Risk Group	I	III	IV	V
HIGHEST Risk Group	III	IV	V	V

ASHE ICRA 2.0 Toolkit. https://www.ashe.org/icra2

How to Perform an ICRA[7]

Identify Construction Activity

Demolition, painting, patch holes in wall, build a wall, etc.

Identify Patient Risk Groups

Who will be impacted by the construction? *(e.g., patients, clinical staff, front office)*	Which locations are close to the construction site	Consider risk to surrounding areas *(e.g., ICU, SPD)*

Outline Precautions & Mitigation Activities Based On:

Construction project type	Patient risk group

Identify Infection Prevention Precautions By Class

Containment barriers, isolation of ventilation systems, negative pressure, dust containment, HEPA filters, etc.

Completed ICRA Posted at Project Site

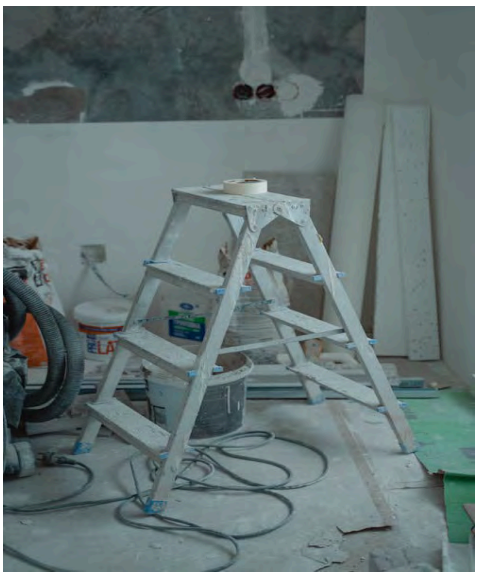
ASHE ICRA 2.0™ Toolkit | ASHE

For more information on how to conduct and ICRA, review the *Fundamentals of Construction and HVAC Webinar* linked at the end of this chapter.

Key Components of IPC Construction & Renovation [1, 7]

Complete a risk assessment for all construction and renovation projects in or near the healthcare facility

- IPs should utilize a standardized ICRA tool to evaluate disruption and risk related to dust, air, moisture and mold
- Specific mitigation measures are outlined for each class to prevent construction-related infections



Include representatives from all involved teams BEFORE the project begins

- *Unit leadership, safety, facilities management, infection prevention, etc.*

Round in and around construction areas while the project is ongoing

- Monitor for adherence to mitigation strategies *(e.g., negative-air poly wall, no dust exiting the area)*

Perform surveillance and monitor for potential construction related transmission within the facility

- *(e.g., Aspergillosis)*

Partner with the teams for new builds and projects

- Offer evidence-based infection control guidance to the project design team

Utilize the latest FGI guidelines

- Some facilities may use “grandfathered” versions based on when the construction project and building was completed

IP Role in Construction & Renovation [1, 7, 12]

Policy & Procedure

- Partner with relevant departments and teams to develop a standard risk assessment for the facility based on the latest guidelines and evidence-based practice
- Develop, review and update policies and procedures for construction and renovation within the facility

Education & Training

- Ensure staff and contractor training is sufficient for infection prevention practices during construction and renovation
- Partner with contractor and education teams to address gaps in training and education

Surveillance & Reporting

- Perform surveillance and monitor for construction related disease transmission in the facility
  - (*e.g., fungal, dust related organisms*)

Performance Monitoring & Evaluation

- Frequently audit and monitor the environment through construction rounds when construction and renovation projects occur
- Provide feedback to internal staff in the area and construction personnel/ project managers

Collaboration & Communication

- Collaborate with relevant teams and departments when construction and renovation projects occur
- Complete an Infection Control Risk Assessment (ICRA) for all applicable projects
- Participate in project design for upcoming construction to ensure principles of infection prevention are included

Construction and Renovation Questions to Consider

1. **Is an ICRA performed before all construction and renovation projects?**
2. **If no, how is it determined if an ICRA will be performed?**
3. **How are ICRA rounds performed during active construction and renovation?**
4. **What is the process if non-compliance is identified?**
5. **Is the IPC program consulted before construction and renovation projects occur?**
6. **Is the IP consistently a member of construction and renovation project meetings?**

Additional notes on the next page →

Notes

Construction and Renovation Questions to Consider

7. **Does the facility have a multidisciplinary team for construction and renovation projects?**
8. **Are there any active HVAC related disease outbreaks at the facility?**
9. **Is there a list of all current projects in the facility?**
10. **Are there any active construction related disease outbreaks at the facility?**
11. **Do contracted workers undergo any infection prevention education prior to working at the facility?**

Notes

Additional Notes

Notes

Water Management

Water systems and moist environments in healthcare settings can serve as reservoirs for waterborne microorganisms. Understanding the conditions that promote the growth and spread of these pathogens is essential for effective infection prevention and control.

IPs must maintain a thorough awareness of organisms that can cause waterborne illness. IPC programs, in collaboration with the facilities management department, must have a clear understanding of the facility's water supply and waste system design to establish effective monitoring and mitigation strategies against waterborne pathogens.[10, 15]

- Legionella is the most common focus for water management programs, although there are numerous other water-associated infectious agents.
- Exposure to Legionella can cause Legionnaires' disease which is a type of pneumonia.[10]
- Exposure to Legionella occurs when people inhale contaminated water from building water systems that are not adequately maintained. [15]

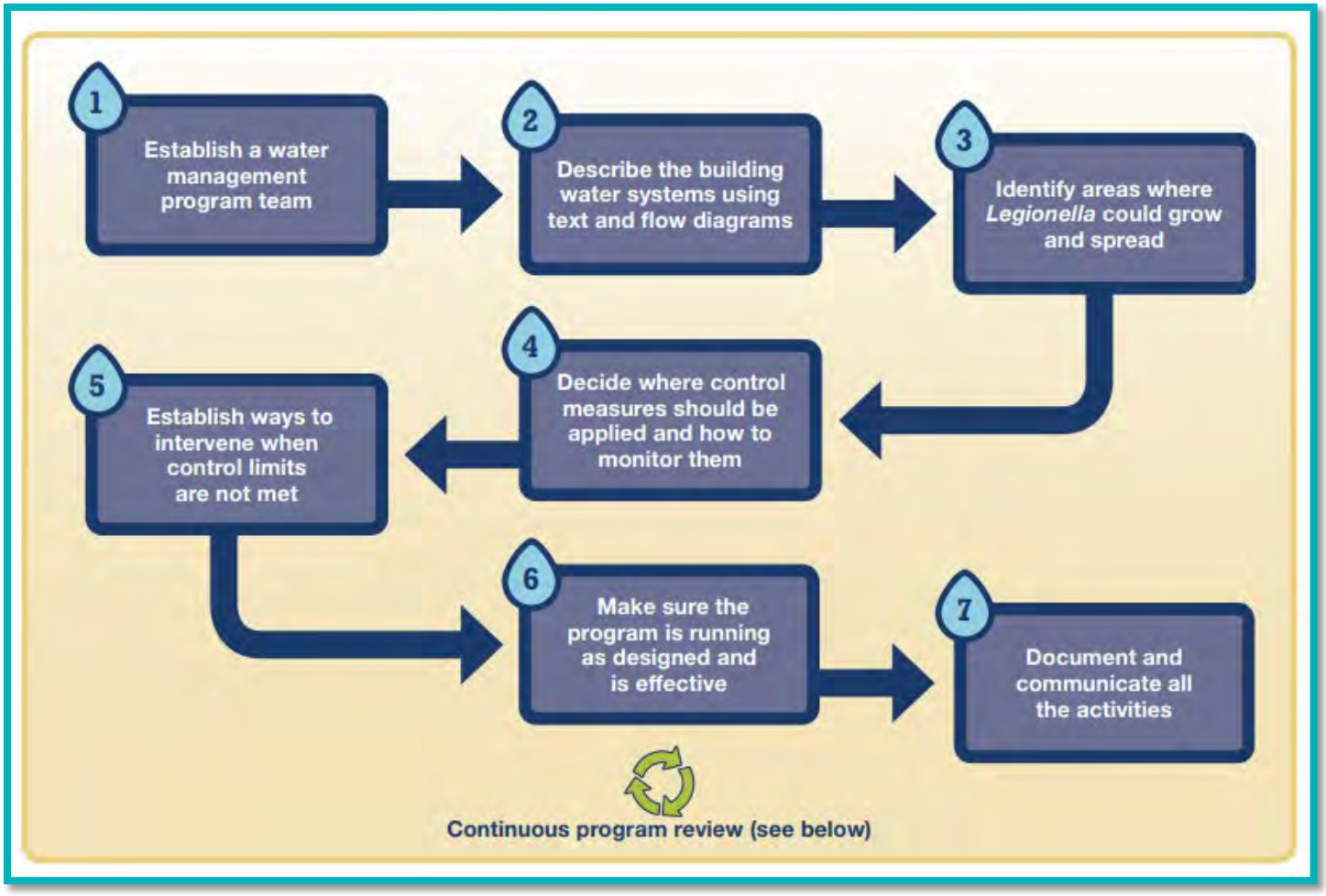
The Water Management Program is created to

- ✓ Identify areas in your facility where Legionella and other waterborne pathogens (e.g., NTM, protozoa) might be found
- ✓ Develop a plan to reduce the risk
- ✓ Utilize this toolkit to develop or assess your facility's Water Management Program
  Legionella Toolkit-Version 1.1-June 24, 2021 (cdc.gov)

Components of a Water Management Program

Identify potential hazards for each step in the process [10]

1. Identify potential hazards at each step in the process
2. Develop a monitoring plan (Control measures)
3. Determine corrective actions to take if needed (Control limits)
4. Collect water samples and review microbiology reports (Routine monitoring)
5. Implement Intervention (Corrective Action)



CDC Legionella Toolkit

Key Principles of Water Management [3,10,13,14,15]

Partner with facilities to identify potential risk points for Legionella and other waterborne pathogen growth within their water systems

Develop or enhance water system downtime procedures and return-to-service protocols

- Hand washing
- Patient Bathing
- Waste Management
- Potable water for consumption
- Cleaning & Disinfection

Partner with facilities for leaking, flooding, and mold concerns

Monitor devices throughout the facility and in departments that handle water, these may also be a point of concern for IPC programs (see examples below)

At Risk Departments

- Dialysis
- Sterile Processing
- Endoscopy
- Dental
- Out of Service/ Closed Departments
- Dietary
- Surgery
- Neonatal Intensive Care Units
- Clinical Laboratories
- Respiratory Therapy
- Environmental Services

At Risk Devices

- Heater-Cooler Machines
- Decorative Water Fountains and Displays
- Sinks
- Ice Machines/ Water Stations
- Eyewash Station
- Baths/ Whirlpools/ Birth Tubs
- Automated Endoscope Reprocessors
- Department Water Lines
- Hemodialysis Machines
- Nebulizer Machines
- Reverse Osmosis (RO) Water systems

Pro IP Tip:

Waterborne pathogens, such as Legionella, NTM, *Pseudomonas spp.*, and other protozoa, pose significant direct and indirect transmission risks in healthcare facilities [3, 10]

IP Role in Water Management [1,3,10]

Policy & Procedure

- Partner with relevant teams to develop and update the Water Management Plan and related procedures
- Partner on the development of downtime and return to service procedures for the facility's water systems
- Partner on annual Water Infection Control Risk Assessment (WICRA) as part of the water management team

Education & Training

- Partner with education teams to design and deliver training programs for healthcare staff on water management, preventive measures, and monitoring parameters

Surveillance & Reporting

- Perform surveillance and monitor for waterborne disease and potential transmission through water sources in the facility
- Perform investigations when waterborne disease occurs within the facility or when outbreaks may be suspected
- Ensure water testing is completed as written in the Water Management Plan (e.g., *Legionella*)

Performance Monitoring & Evaluation

- Perform rounds and monitor water systems and water reservoirs throughout the facility
- Request for facilities to report data and preventative maintenance of water reservoirs at committee meetings

Collaboration & Communication

- Collaborate with facilities and other relevant departments to monitor water systems and receive reports on testing and preventative maintenance
- Partner with facilities and other relevant departments when downtime and return to service procedures are in place
- Collaborate with facilities management on related moisture issues in the facility
  - (e.g., *mold, flooding, mold remediation)*

Water Management Questions to Consider

1. **Does my facility have a written Water Management Plan? When was it last updated?**
2. **Does the facility have a Water Management Team? Is the IPC Program a member?**
3. **Does the facility have protocols related to water system maintenance? How often is this performed?**
4. **Does the facility have downtime procedures when water systems are down for maintenance or unexpected shutdowns?**
5. **Does the facility have return to service protocols after downtime?**
6. **Does the facility perform water sampling in the facility?**
7. **When was the last water sampling performed?**

Additional questions on the next page →

Notes

Water Management Questions to Consider

8. **What is being tested for?**
9. **Are there any active waterborne disease outbreaks at the facility?**
10. **Are there any decorative water features at the facility? If yes, how are they monitored and managed?**
11. **Are any devices *(e.g., humidifiers)* prohibited at the facility?**
12. **What is the process to mitigate the water system if a waterborne pathogen is identified? *(e.g., Legionella, NTM)***
13. **How is water quality monitored in specialty areas?**
    - **Dialysis**
    - **Sterile Processing**
    - **Compounding Pharmacy**
    - **Rehab Units (Water Basins)**
    - **Burn Units**
    - **Other:**

Notes

Additional Notes

Notes

Week 10 Review

Internal Policies

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ HVAC related policies and procedures ❑ Airflow Validation ❑ Utilities Management Plan ❑ HVAC Downtime/ Emergency Operations ❑ Departmental Temperature and Humidity			
❑ Construction and renovation related policies and procedures ❑ Dust Containment			
❑ Water Management Plan			
❑ Water related policies and procedures ❑ Water intrusion ❑ Mold mitigation ❑ Building water and waste schematics			

Considerations for Week 10

- ❑ **Schedule a meeting with Facilities Management Department**
  - ❑ Use this link to access Conversation Starter Templates to aid in this conversation: https://innovateipc.org/ipc-support-center/education-and-resources

- ❑ **Consider watching Behind the Mask Webinar:** Webinars | innovateIPC.org
  - ❑ Fundamentals of Water and Waste Management
  - ❑ Fundamentals in Construction & HVAC related to Infection Prevention

For additional tools and resources visit: https://Innovateipc.org

Week 10 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics

Primary Resources for Week 10

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
Environmental Infection Control Guidelines | Infection Control | CDC Focus on sections relevant for this week including Air, Water, and associated appendixes.	CDC	Guideline
ANSI/ASHRAE/ASHE Standard 170-2017, Ventilation of Health Care Facilities	ANSI/ ASHRE	Standard
Home - Facility Guidelines Institute Editions - Facility Guidelines Institute	FGI	Guidelines
Ventilation - Standards | OSHA.gov | Occupational Safety and Health Administration	OSHA	Regulatory
Infection Prevention and Control Training Collaborative	ASHE/ CDC	Resource
ASHE ICRA 2.0™ Toolkit | ASHE	ASHE	Resource
Chapter 8. HHS Facility Design and Construction | HHS.gov	HHS	Guideline
Developing a Water Management Program to Reduce Legionella Growth & Spread in Buildings	CDC	Resource

Week 10 References

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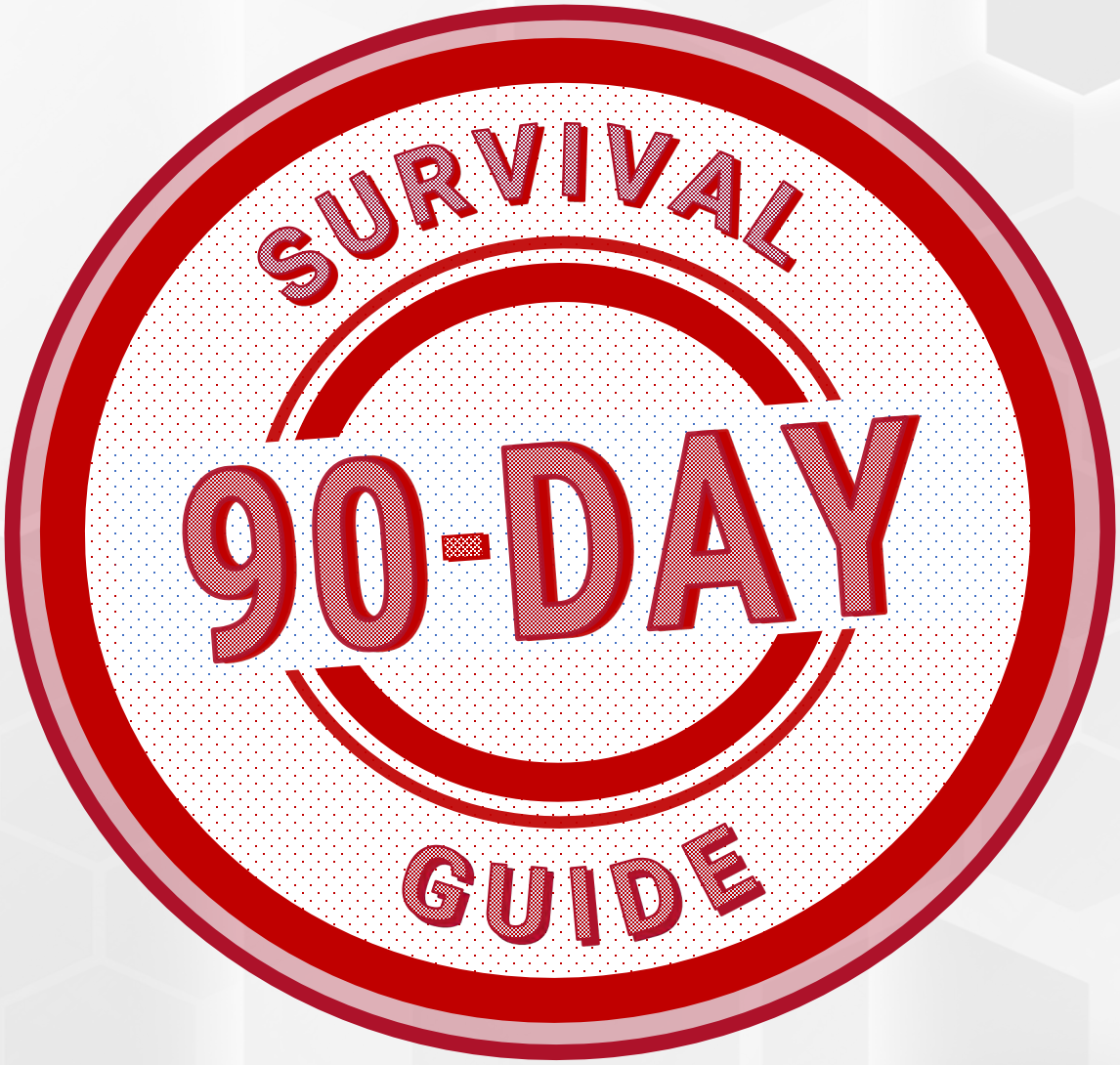

The Infection Preventionist's Orientation Workbook

WEEK ELEVEN

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Collaborative Programs

Collaboration across departments the organization is key to building strong relationships and enhancing patient safety.[1, 7] This chapter outlines the IP's role with some collaborative departments but is not a comprehensive guide for partnering with these departments. For specific guidance on department program management, please refer to your organization's policies and relevant resources.

Key Principles for Working with Collaborative Programs

- **Learn and understand their scope of practice**
  - This may include reviewing policies and procedures as it relates to infection prevention
  - Review where the IP fits (when necessary)
    - IPs must be mindful of scope creep, as their work impacts every part of the facility. Staying focused on IP roles ensures they address the right priorities without overextending their role.
- **Partner on data sharing**
  - Share and receive relevant data at period intervals
  - Provide agenda time at ICC or QAPI meetings for the departments' reports
- **Collaborate on quality improvement initiatives**

We will be reviewing 4 key collaborative programs this week→

- **Occupational Health**
- **Antimicrobial Stewardship**
- **Quality Improvement**
- **HAI/AR Programs**

Occupational Health

The Occupational Health (or Employee Health) program operates hand-in-hand with the IPC Program to protect both healthcare workers and patients from communicable diseases and infections. In many institutions, IPs may also be tasked with managing the Occupational Health Program.

Key IPC Principles of Occupational Health [1, 4]

The Occupational Health program encompasses many elements related to employee health and safety. This guide will focus solely on Occupational Health as it relates to infection prevention practice, highlighting key IPC responsibilities, collaboration and best practices for protecting healthcare personnel from infectious risks.

Management of healthcare worker vaccinations and assessment of immunity

- Healthcare workers should be up-to-date on vaccinations (as recommended by ACIP and CDC) to protect staff and patients from vaccine preventable diseases
- The facility must have processes in place for healthcare workers who decline recommended vaccinations
  - *e.g., declination forms, furlough for exposure, modified patient assignments/ departments*
- Assesses immunity to Hepatitis B for those at higher risk of BBP exposure
- Manage post-exposure vaccination and prophylaxis per facility policy

Development and implementation of employee illness and return to work protocols

- Develop policies for ill calls and sick leave
- Return to work protocols are created to provide clear guidelines for when healthcare workers can safely return to work after illness or exposure, ensuring they are no longer infectious or pose risk to patients or other healthcare workers
  - Protocols vary by: Diagnosis, Vaccination status, Symptoms, Available accommodations, Treatment, and Post exposure prophylaxis

Partner with Occupational Health to perform surveillance for:

- Identification of healthcare worker outbreaks
- Sharps injuries
- Occupational exposures.

The IPC program and Occupational Health typically partner on:

- TB control program efforts (Week 7)
- Respiratory Protection (Week 7)
- BBP Program (Week 2)
- Outbreak Investigations (Week 6)
- Sharps Safety Programs (Week 4)
- And others as deemed by the facility

Occupational Health and Exposures

IPC teams often collaborate with occupational health in exposure investigations. In many cases, there is not a strict definition of what constitutes and exposure. Exposures are often based on specific pathogens and the environments in which they are encountered.

Infection Prevention teams, along with occupational health, infectious disease experts, public health officials, and facility leadership work together to determine exposure criteria for each unique situation. Definitions are typically defined on a case-by-case basis, influenced by factors such as the pathogen of concern and the risk level of the affected population.

Elements of Exposure Investigations

1. Identify

- Determine:
  - Organism of concern
  - Index patient
  - Route of transmission

2. Define

- Exposure definition based on :
  - Details surrounding patient exposure (e.g., route, timeline, PPE used)
  - Facility policy
  - Public Health guidance
  - Expert recommendations

3. Investigate

- Initiate an exposure event/contact investigation
- Partner with Employee Health to:
  - Identify & notify potentially affected employees
  - Follow up & evaluate
  - Provide prophylaxis if needed

Key IPC Principles of Occupational Health [1, 4]

Common Exposure Definitions

		High-Risk Areas	Exposure Risk
Airborne diseases *(e.g., Measles, TB, Varicella)*	**Airborne Transmission**	Emergency departments, TB isolation rooms, aerosol generating procedures	Healthcare workers in close proximity to infected patients, especially in crowded areas or ventilation-poor spaces
Respiratory Viruses *(e.g., Influenza, COVID-19, RSV)*	**Droplet Transmission**	Areas with unmasked, symptomatic patients. *(e.g., Emergency department, inpatient units, outpatient clinics)*	Close contact with symptomatic patients, particularly during aerosol-generating procedures like intubation or suctioning
Bloodborne Pathogens (e.g., HIV, Hepatitis B & C)	**Direct contact through mucous membranes or non-intact skin**	Labs, any place needles or sharps are used	Needle sticks, accidental cuts, or exposure to blood during procedures, or handling contaminated items like syringes
Special Pathogens *(e.g., Ebola, Lassa fever)*	**Transmission pathway based on organism**	Areas where patients enter facility with unknown illness (e.g., *isolation rooms, biocontainment units)*	Direct patient contact or handling of contaminated items without appropriate PPE
Parasites (e.g., Scabies, Lice)	**Contact Transmission**	Any area where patient care may occur	Direct contact with infested individuals or items
GI pathogen Outbreaks *(e.g., norovirus)*	**Contact transmission**	Any area where patient care may occur	Contact with contaminated surfaces, feces, or handling inadequately cleaned patient equipment in an area with an active outbreak
Meningococcal Disease (e.g., Neisseria meningitidis)	**Droplet Transmission**	Emergency departments, urgent care, ICU High-density patient areas	Close contact with patients or respiratory droplets in areas where meningococcal cases are suspected or confirmed

IP Role in Occupational Health [1, 4]

Policy & Procedure	• Partner with Occupational health to develop, review and update policies and procedures related infection prevention practice, staff vaccination, ill calls, and disease exposures, and return to work procedures for healthcare workers
Education & Training	• Partner on providing education and training for healthcare staff on injury prevention strategies and infection prevention procedures to minimize risk of exposure
Surveillance & Reporting	• Perform surveillance and monitor for incidence of healthcare worker sharps injuries and bloodborne pathogen exposures • Identify when healthcare worker exposure may have occurred. (e.g., *unprotected exposure to Varicella prior to airborne isolation being implemented*) • Partner with Occupational Health to review and monitor illness trends for outbreak surveillance
Performance Monitoring & Evaluation	• Round and monitor for process measures that minimize risk of injury and exposure • Provide data and feedback to staff on risks and trends
Communication & Collaboration	• Collaborate with Occupational health to monitor injury reports, exposures, and employee illness trends at the facility • Partner with employee safety committee (or similar structure at facility) to ensure procedures are in place to promote staff safety and injury prevention
Product Selection & Evaluation	• Partner on identifying the safest devices and products to decrease risk of healthcare provider injury and exposure • Provide input on PPE and other infection prevention products in use at the facility

Occupational Health Questions to Consider

1. **Does the Occupational Health scope include all paid & unpaid HCW or only employed?**
2. **How is the annual Flu/COVID vaccination program carried out?**
3. **What vaccines is the Occupational Health program able to provide to staff?**
4. **What are the required vaccinations for the facility?**
5. **Is there a list of employees who are not immune to targeted pathogens in case of exposure? *(e.g. Measles)***
6. **Is there medical oversight of the Occupational Health program?**
7. **Who has the authority to remove personnel from duty?**
8. **Where is the employee illness and return to work policy located?**
9. **Do we do qualitative or quantitative fit-testing?**

Additional questions on the next page →

Notes

Occupational Health Questions to Consider

10. **Is fit testing for the respiratory protection plan conducted in-house or outsourced?**
11. **Is there assistance to ensure those HCP with LTBI are offered treatment if financial assistance is a barrier?**
12. **Who/when is the annual sharps evaluation performed?**
13. **What training and auditing for safe injection practices is being done for Occupational Health any HCP how assist Occupational Health?**
14. **Is there vaccine hesitancy among HCWs in the facility (clinical and non-clinical)? How are vaccine declinations handled?**
15. **What pre-employment testing is done?**
16. **How are after-hours exposures handled?**
17. **How are post-exposure meds dispensed?**
18. **What is the process for post-exposure for employees?**

Notes

Additional Notes

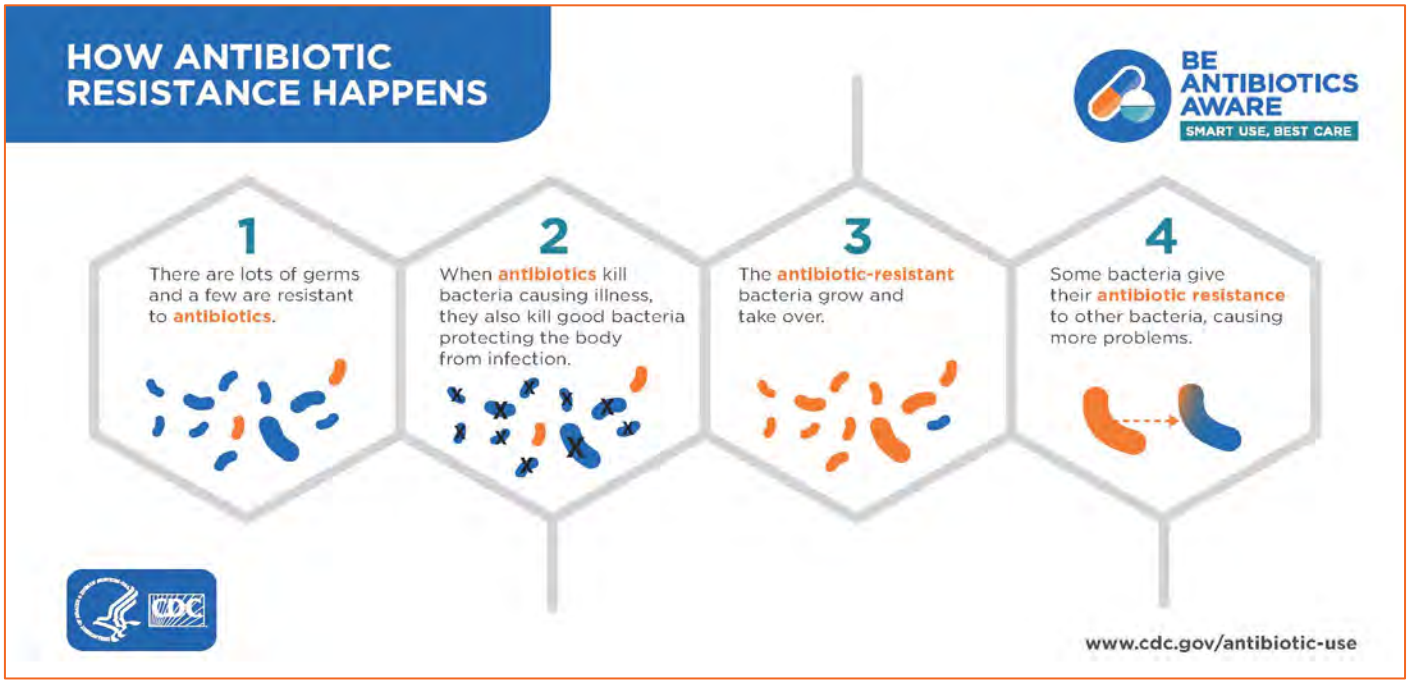
Notes

Antimicrobial Stewardship [1,5]

The use of antibiotics is vital to effectively treat infections and save lives. However, the unnecessary use of antibiotics can lead to antibiotic resistance. Antibiotic or Antimicrobial stewardship programs focus on assessing and optimizing how clinicians prescribe antibiotics to protect patients from unnecessary antibiotic use. These programs help to improve antibiotic prescribing which reduces patient harm and improves clinical outcomes. These programs also receive significant attention from public health agencies and regulatory bodies, requiring facilities to invest time and effort to ensure compliance and patient safety.

Primary Uses for Antibiotics

1. ***Prophylaxis:*** used to prevent an infection (*e.g., before surgery*)
2. ***Empirical Use:*** broader spectrum antibiotics given while awaiting culture and sensitivity results
3. ***Pathogen-directed therapy:*** narrow spectrum antibiotics given once the pathogen has been identified



Antimicrobial Stewardship [1,6]

The IPC program should be aware of the scope and practices of the Antimicrobial Stewardship Program but is typically not managing the program.

Leadership commitment

- Dedicating necessary human, financial and information technology resources

Accountability

- Designate leader or co-leaders, such as a physician and pharmacist, who are accountable for program management and outcomes

Pharmacy expertise

- Appoint a pharmacist, ideally as the co-leader of the stewardship program, to lead implementation efforts to improve antibiotic use

Action

- Implement at least one intervention, like pre-authorization or facility-specific recommendations

Tracking

- Monitoring antibiotic prescribing and resistance patterns

Reporting

- Regularly report information on antibiotic use and resistance to prescribers, pharmacists, nurses, and hospital leadership

Education

- Educate prescribers, pharmacists, and nurses about adverse reactions from antibiotics, antibiotic resistance and optimal prescribing

IP Role in Antimicrobial Stewardship [1,5,6]

Policy & Procedure

- Partner with Antimicrobial Stewardship team and relevant departments to review and provide feedback on antimicrobial use policies and procedures at the facility
- Ensure policies address:
  - *Appropriate antimicrobial use*
  - *Resistance prevention strategies*
  - *IP measure integration*

Education & Training

- Partner on providing education and training for healthcare staff on appropriate antimicrobial use at the facility

Surveillance & Reporting

- Many facilities report Antimicrobial Use & Resistance (AUR) through NHSN, the IP may partner with the stewardship team and pharmacy to facilitate AUR reporting

Performance Monitoring & Evaluation

- Partner with lab to collect data for the incidence of drug-resistant organisms in the facility
- Review and share Antibiograms as they are released by the stewardship team to inform clinical decision making

Collaboration & Communication

- Collaborate with the stewardship team to promote appropriate antimicrobial use at the facility
- Lead efforts and prevention strategies surrounding HAIs, which may lead to a decreased need for antimicrobials
- Support the advancement of diagnostic methods that reduce overuse of antibiotics,
  - *e.g., rapid sensitivity and reflex culturing*

Antimicrobial Stewardship Questions to Consider

1. **Does the facility have an active Antimicrobial Stewardship Program (ASP)?**
2. **Are prescribers required to document an indication for antimicrobial use?**
3. **How is education provided to prescribers?**
4. **Are "alerts" in the electronic medical record utilized?**
5. **What metrics are used for ASP reports?**
6. **What types of rapid diagnostics are in use in your hospital? Which specimen types are they used for?**
7. **Who is responsible for reporting AUR data to NHSN? (*This should not solely be the IP.)***
8. **Is the IP a member of the ASP committee?**
9. **Which committee, department, or individual(s) is/are leading the ASP program in your hospital?**

Additional questions on the next page →

Notes

Antimicrobial Stewardship Questions to Consider

10. **Does the facility have an active Antimicrobial Stewardship Program (ASP)?**
11. **Does the stewardship team develop and provide an antibiogram for the facility? How often is it published?**
12. **Does the stewardship program provide education to clinicians and other relevant staff on improving antimicrobial use?**
13. **Does the facility monitor and track antimicrobial consumption?**
14. **Does the facility have a formal process for clinicians to review appropriateness of antimicrobials 48-72 hours after initiation?**
15. **Does the facility utilize treatment recommendations for common clinical conditions (e.g., community-acquired pneumonia, soft tissue infections)?**
16. **Do stewardship personnel review courses of therapy for specific antibiotic agents and communicate with prescribers?**
17. **Does the facility have a specific list of antimicrobial agents that must be approved by the ASP prior to dispensing at the facility?**

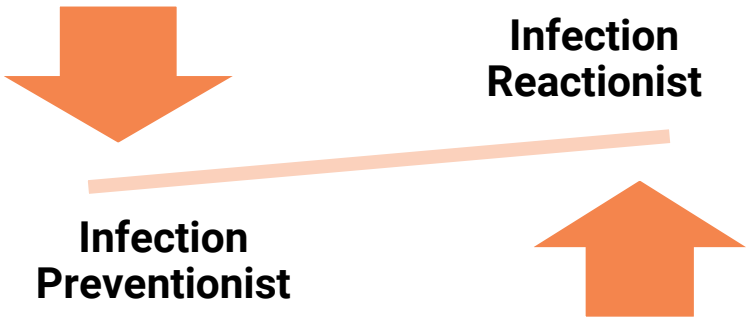
Notes

Additional Notes

Notes

Quality Improvement [7,8,9]

IPs play a key role in quality improvement (QI) initiatives within healthcare settings. QI is a continuous process that aims to improve patient outcomes, enhance overall safety, and optimize healthcare processes. IPs can partner in this process by providing ongoing monitoring, evaluation and adaptation of infection prevention practices. QI helps IPs to use systematic processes to more effectively identify opportunities and improve practice.



Key IPC Principles of Quality Improvement

Perform various methods of data collection and analysis

- Quality measures
  - ***Process measures-*** actions performed by HCPs that may impact an outcome *(e.g., Hand Hygiene, EVS cleaning, PPE compliance)*
  - ***Outcome measures-*** the result of care *(e.g., HAI rates, SIRs)*
- Identification and implementation of performance improvement initiatives Multidisciplinary collaboration of stakeholders

Application of evidence-based practice

- IPs should apply evidence-based practices to strategies aimed at preventing infections using the latest research and guidelines

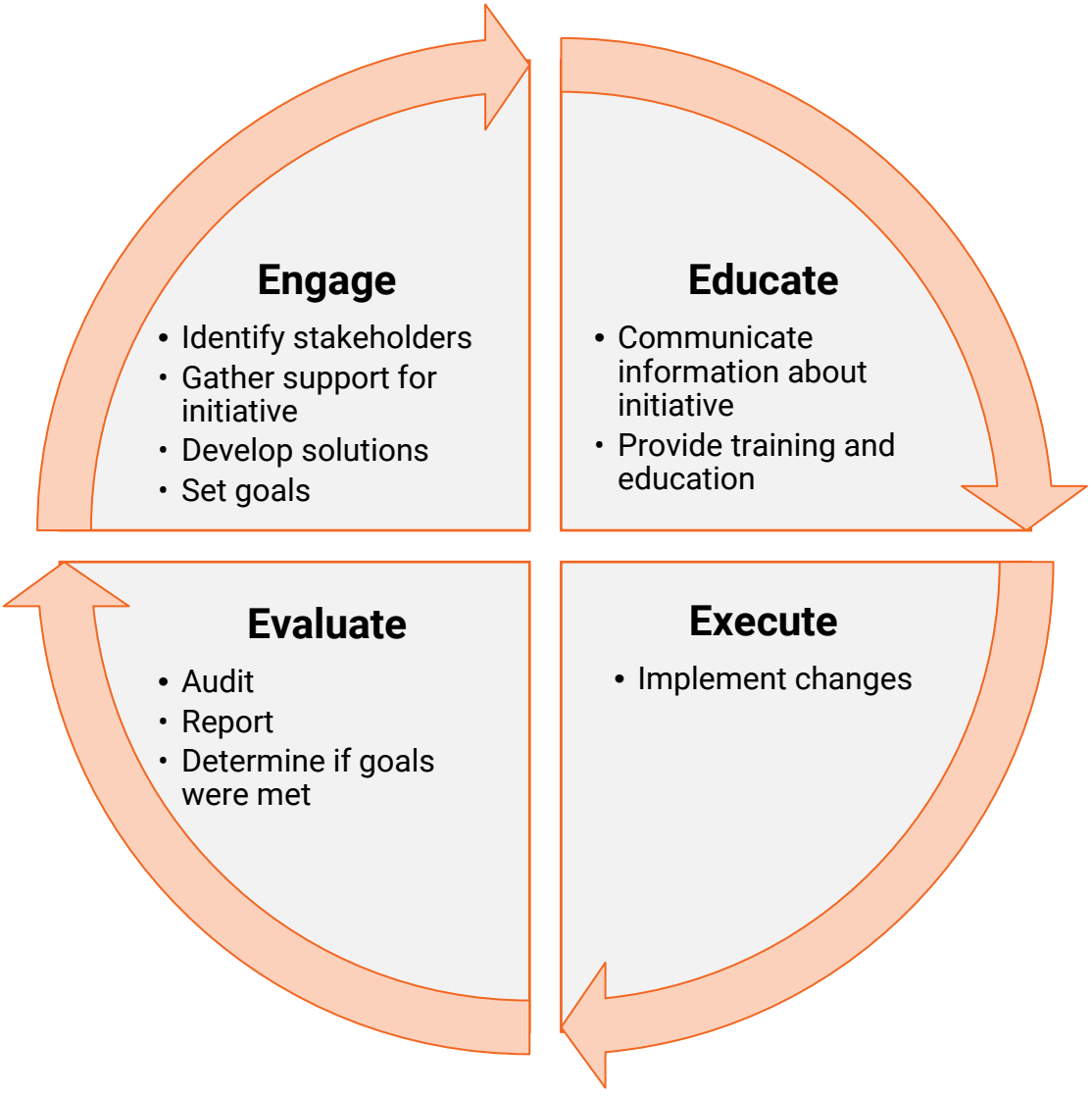
Ensure compliance of established protocols and regulatory requirements

Quality Improvement

IPC and QI teams collaborate to prioritize IPC improvement initiatives by considering:

1. Regulatory requirements (local, state, national and accrediting bodies)
2. Institutional priorities
   - Services offered and population served
   - Identified gaps and opportunities
3. Patient safety goals

Improvement Initiatives will be unique for each facility, but each improvement initiative should follow a similar process utilizing data, gap analyses, risk assessments and taking into account organizational goals.



IP Role in Quality Improvement [7,8]

Policy & Procedure

- Partner with Quality Improvement teams and relevant departments to review and provide feedback on policies and procedures

Education & Training

- Utilize findings from quality improvement initiatives to facility training and education
- Provide feedback for any education and training initiatives related to infection prevention
- Partner with education teams to address gaps in training and education

Surveillance & Reporting

- Perform surveillance and share IPC data with QAPI

Performance Monitoring & Evaluation

- Partner with quality to utilize evidence-based tools to facilitate auditing in the facility
- Partner with quality on conducting HAI deep dives and root cause analyses when necessary

Communication & Collaboration

- Collaborate with QAPI on infection prevention quality improvement initiatives
  - *Gap Analysis, Root Cause Analysis, SWOT Analysis, etc.*
- Participate in relevant quality meetings
- Ensure QI initiative findings related to infection prevention are communicated with facility leadership, unit leaders and frontline staff

Quality Improvement Questions to Consider

1. How is the quality department organized for the facility?
2. Does quality partner on gap analysis for the IPC program? When was the last one performed?
3. Does quality help to facilitate staff education and training?
4. Generally, what process measures are utilized by quality?
5. Generally, what outcome measures are utilized by quality?
6. Who decides if a Root Cause Analysis is conducted?
7. Does quality partner with the IPC program and units to review specific HAI cases (often called deep dives)?
8. Are there any active IPC quality improvement projects or initiatives?
9. Is there a specific QAPI meeting? Does IPC data and concerns go to the QAPI committee?

Notes

Additional Notes

Notes

HAI/AR Programs and Coordinators [10]

HAI/AR (Antimicrobial Resistance) Program Coordinators at the state level are responsible for coordinating efforts to combat HAIs and antimicrobial resistance within their state. Partnering with HAI/AR programs helps to strengthen IPC efforts, ensures effective strategies for prevention and control of infectious diseases in communities, and are an excellent resource for IPs.

Partnering with HAI/AR Programs helps with:

- Information sharing & coordination
- Access to resources & expertise
- Standardization & Consistency
- Policy development & advocacy
- Surveillance & outbreak response
- Improvements for programs within the state
- Assistance with HAIs, MDROs, & other IPC concerns
- Assistance with reporting
- Education & training opportunities
- Additional opportunities led by the program

- ❑ Determine who your HAI/AR Program Coordinator is for your state (*Consider referencing your state health department's website)*
- ❑ Explore the role of an HAI/AR program coordinator
- ❑ Consider sending an email or communication to introduce yourself and set up a meet and greet
- ❑ Learn relevant points of contact within the state HAI/AR program
- ❑ Exchange Contact Information

Name: _____ Contact Information_____

Name: _____ Contact Information_____

Name: _____ Contact Information_____

Name: _____ Contact Information_____

Week 11 Review

Internal Policies

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ Facility Sick Leave Policy (including Mandatory Leave)			
❑ Work Restrictions			
❑ Facility Disease Exposure Protocol(s) and Post-Exposure Prophylaxis			
❑ Staff Vaccination and Evidence of Immunity			
❑ Antimicrobial Stewardship and related policies and procedures ❑ Facility Antibiogram(s)			
❑ Quality related policies and procedures ❑ Root Cause Analysis Process			

Considerations for Week 11

Schedule a Meet and Greet with:

- ❑ **Antimicrobial Stewardship**
- ❑ **Occupational Health**
- ❑ **Public Health**
  - ❑ Use this link to access Conversation Starter Templates to aid in these conversations: https://innovateipc.org/ipc-support-center/education-and-resources

For additional tools and resources visit: https://Innovateipc.org

Week 11 Resources

The resources listed on this page are key references that IPs should be familiar with. As you advance in your IPC practice, you will discover additional resources relevant to these topics

Primary Resources for Week 11

RESOURCE (LINK)	SOURCE	RESOURCE TYPE
Infection Control in Healthcare Personnel: Infrastructure and Routine Practices | Infection Control | CDC	CDC	Guideline
Vaccine-Specific Recommendations | ACIP Recommendations | CDC	ACIP	Guideline
Healthcare Personnel Vaccination Recommendations	Immunize.org	Guideline
Occupational Health in the Healthcare Setting	AOHP	Resource
Core Elements of Antibiotic Stewardship | Antibiotic Prescribing and Use | CDC	CDC	Guideline
Implementing an Antibiotic Stewardship Program	IDSA	Guideline
CMS State Operations Manual*	CMS	Regulatory
CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings | Infection Control | CDC	CDC	Guideline
Healthcare Respiratory Protection | Healthcare Workers | CDC	CDC	Resource

** The CMS State Operations Manual will vary depending on your facility type. Acute care is linked above, reference the CMS website for additional SOMs for other facility types.*

Week 11 References

1. Infection Control in Healthcare Personnel: Infrastructure and Routine. Centers for Disease and Control and Prevention. April 12, 2024. Accessed January 14, 2025. Infection Control in Healthcare Personnel: Infrastructure and Routine Practices | Infection Control | CDC

2. Vaccine-Specific Recommendations. Centers for Disease and Control and Prevention. January 7, 2025. Accessed January 14, 2005. Vaccine-Specific Recommendations | ACIP Recommendations | CDC

3. Healthcare Personnel Vaccination Recommendations. Immunize.org. Accessed January 14, 2025. Healthcare Personnel Vaccination Recommendations

4. Occupational Health in the Healthcare Setting 16th Edition. Association of Occupational Health Professionals in Healthcare. Accessed January 14, 2025. Occupational Health in the Healthcare Setting

5. Core Elements of Antibiotic Stewardship. Centers for Disease and Control and Prevention. April 12, 2024. Accessed January 14, 2025. Core Elements of Antibiotic Stewardship | Antibiotic Prescribing and Use | CDC

6. Tamar F. Barlam, Sara E. Cosgrove, Lilian M. Abbo, Conan MacDougall, Audrey N. Schuetz, Edward J. Septimus, Arjun Srinivasan, Timothy H. Dellit, Yngve T. Falck-Ytter, Neil O. Fishman, Cindy W. Hamilton, Timothy C. Jenkins, Pamela A. Lipsett, Preeti N. Malani, Larissa S. May, Gregory J. Moran, Melinda M. Neuhauser, Jason G. Newland, Christopher A. Ohl, Matthew H. Samore, Susan K. Seo, Kavita K. Trivedi, Implementing an Antibiotic Stewardship Program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America, Clinical Infectious Diseases, Volume 62, Issue 10, 15 May 2016, Pages e51–e77. Accessed January 14, 2025. https://doi.org/10.1093/cid/ciw118

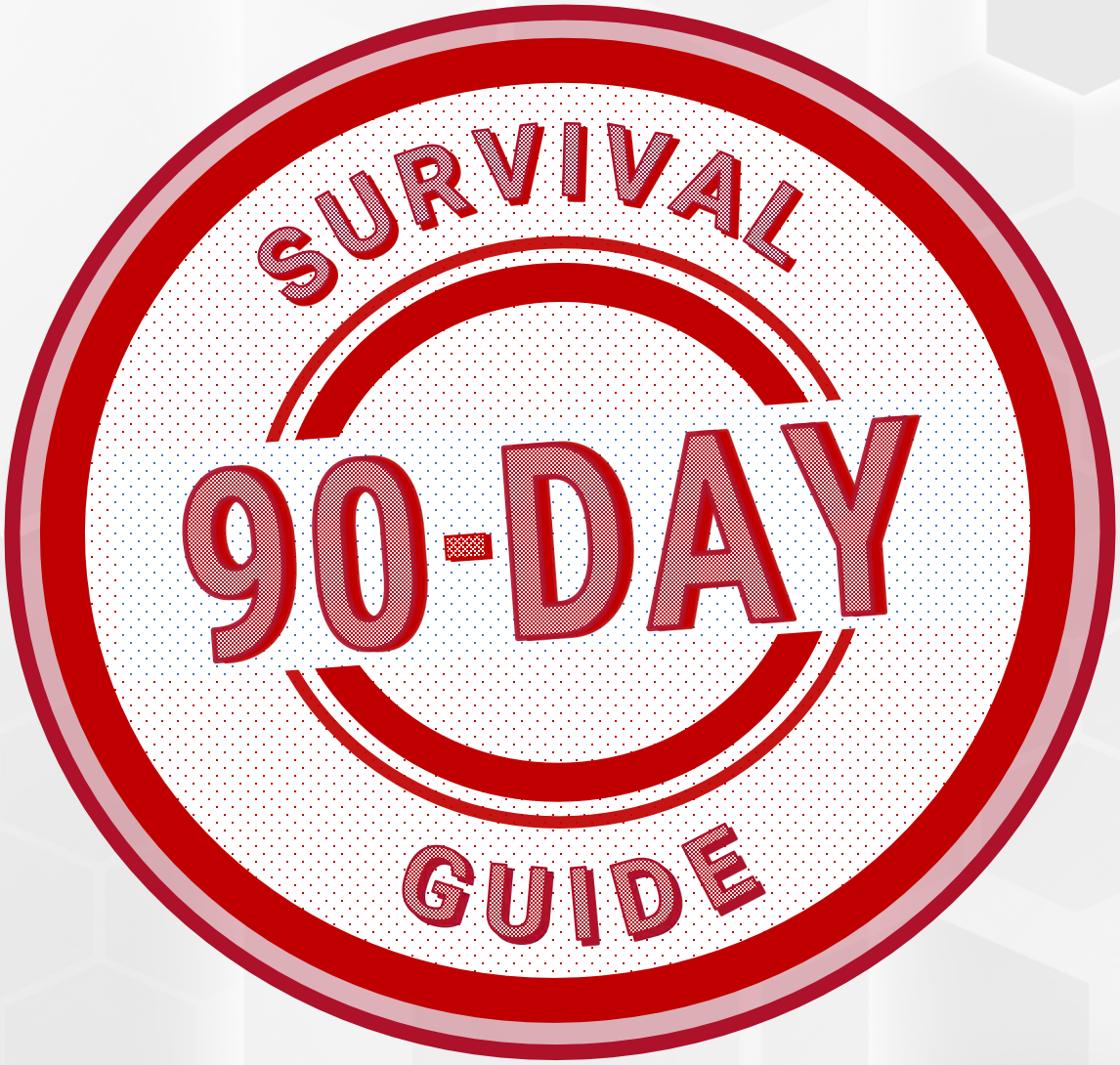
7. CMS State Operations Manual. Centers for Medicare and Medicaid Services. Updated April 19, 2024. Accessed January 14, 2025. SOM Appendix A

8. CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings. Centers for Disease and Control and Prevention. April 12, 2024. Accessed January 14, 2025. CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings | Infection Control | CDC

9. Types of Health Care Quality Measures. Agency for Healthcare Research and Quality. Updated July 2015. Accessed January 14, 2025. Types of Health Care Quality Measures | Agency for Healthcare Research and Quality

10. Health Department HAI/AR Programs. Centers for Disease and Control and Prevention. August 2, 2024. Accessed January 14, 2025. Health Department HAI/AR Programs | HAIs | CDC

11. Infographic-how-AR-happens. Centers for Disease and Control and Prevention. Accessed January 14, 2025.



The Infection Preventionist's Orientation Workbook

WEEK TWELVE

Table of Contents

Infection Prevention Policy Development

Policies and procedures are formalized documents intended to provide guidance for staff on practices or actions within the facility (*see week 1 for further details about policies and procedures)*. IPC programs are responsible for the development and management of written, evidence-based IPC policies and procedures but should also provide input on departmental policies and procedures as they relate to IPC practice.

Policy	Procedure
☐ **High-level, broad, general, concise**	☐ **Specific, detailed**
☐ **Outlines organizations intent on a topic**	☐ **Specify how a task or process is carried out**
☐ **Provides a framework that can adapt to changes**	☐ **Step by step instructions to follow when completing a task**
☐ **Guides decision making**	☐ **Less flexible**
☐ **Ensures coordinated compliance with applicable laws and regulations**	☐ **Standardize processes for consistency**

Policy Sections May Include:

- ✓ Policy Description
- ✓ Purpose
- ✓ Policy Details
- ✓ Education & Training
- ✓ Audit
- ✓ Documentation
- ✓ Responsibility
- ✓ Approvals and Sign off

Need help getting your policies organized?

- Click this link to access our policy templates
- Click this link to access a webinar that reviews IPC policy requirements

Infection Prevention Policy Development
Questions to Consider

1. **What policies are currently missing from your organization?**
2. **Are there any policies that are outdated or in need of updating?**
3. **Are there any current policies that are no longer relevant?**
4. **What is the process for updating policies and procedures?**
5. **How does the IPC department partner with other departments for IPC related policies?**
6. **What processes are in place to be notified when new nationally recognized guidelines are updated?**

Notes

Additional Notes

Notes

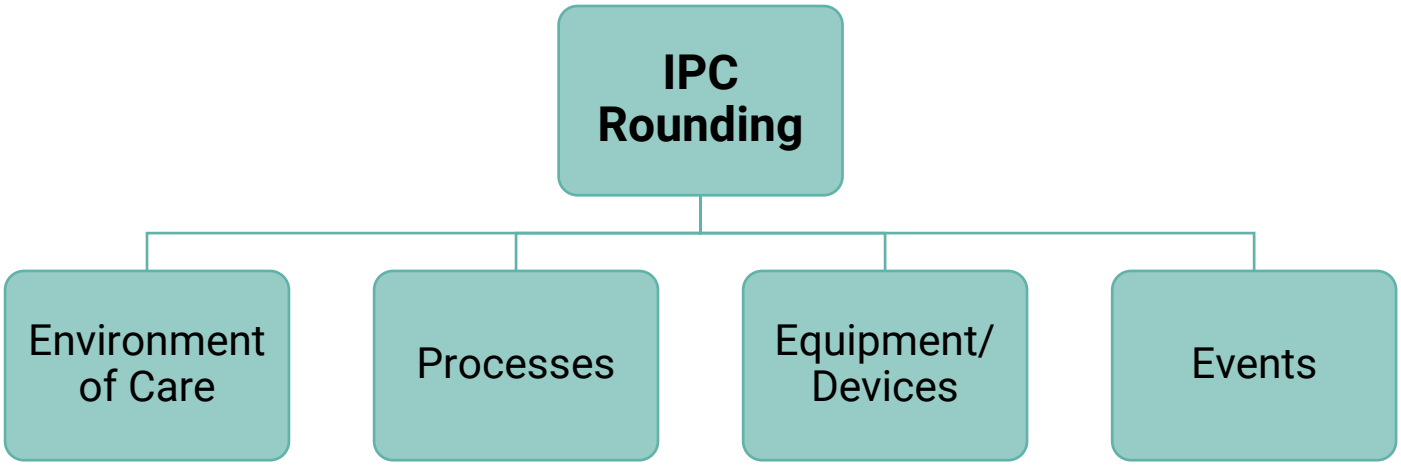
Infection Prevention Rounding

Infection prevention rounding is a key component of performance monitoring that enables IPs and healthcare workers to observe and assess IPC practices, processes, and the environments in which they occur. Effective rounding helps monitor adherence to established guidelines, policies, procedures, and protocols. By conducting regular rounds, IPs can identify areas for improvement, provide immediate feedback, and reinforce best practices among healthcare staff. Many tools and resources exist to help IPs round, these tools can be individualized to meet the needs of your facility.

Goals of rounding are to:

- ✓ Improve outcomes & safety
- ✓ Validate or improve compliance
- ✓ Identify problems & risk
- ✓ Understand processes
- ✓ Facilitate collaboration & communication
- ✓ Educate & reinforce appropriate IPC practices

During rounds, IPs should monitor for IPC-related practices within the spaces they are evaluating



Infection Prevention Rounding

Types of Rounds

Daily Rounding

- Quick, targeted rounds on specific practices or areas

Process Rounding

- Injection Safety, Hand Hygiene, Instrument Transport, PPE, EVS Cleaning & Disinfection

Device Rounding

- Central Lines, Urinary Catheters, Ventilators

Specialty Areas

- Sterile Processing, Operating Rooms, Procedure Areas, Dialysis

Event Rounding

- Outbreaks, Construction Projects, New Device or product introduced to the facility

Environmental/ Environment of Care Rounds

- EOC opportunities such as ceiling tiles, dust, supply storage, wall chips, general cleanliness, etc.

Infection Prevention Rounding Questions to Consider

1. **Is there a process if continued lapses in infection prevention practice are identified?**
2. **How is the data from rounds being collected? Is that data being analyzed to identify themes and trends?**
3. **Where is rounding data reported?**
4. **Are there any active performance improvement initiatives that may benefit from rounding data?**

Notes

Healthcare Worker Education and Training [1,2]

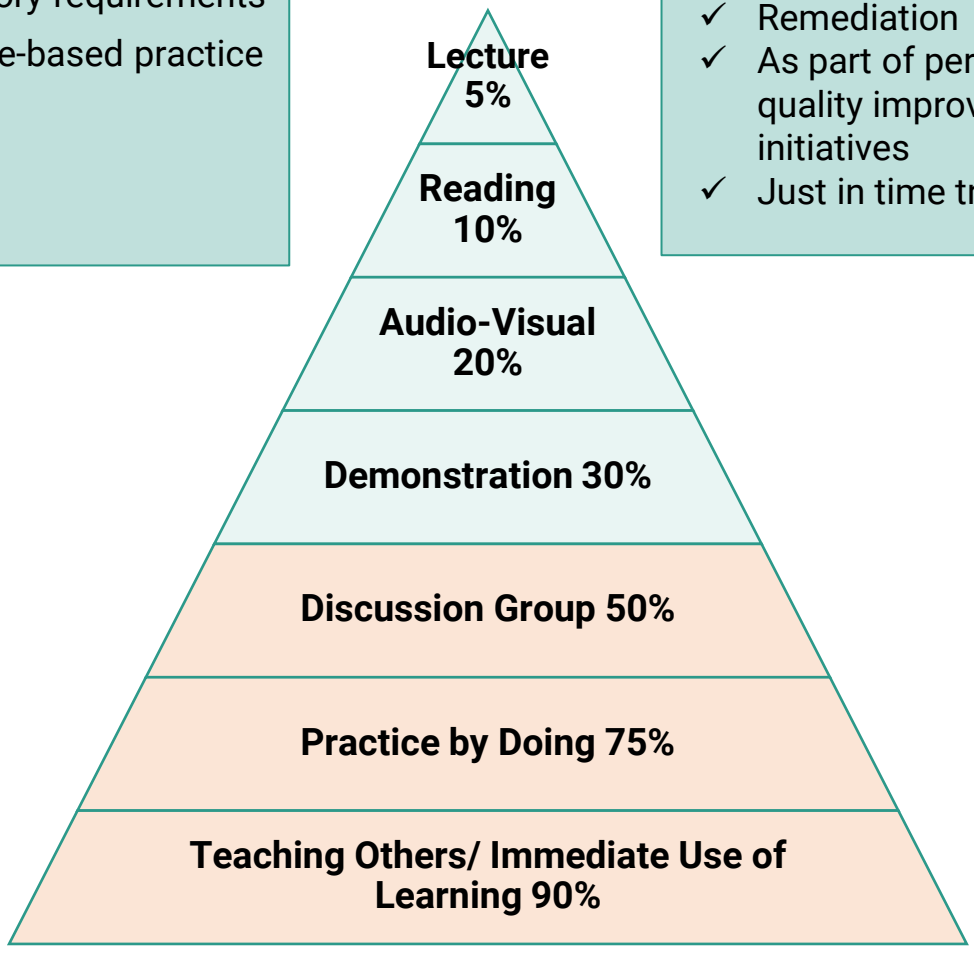
The IPC program must have oversight into healthcare worker education as it relates to IPC practices. Education and training should be job specific and address infection prevention concerns for the area in which they work. Healthcare education is heavily regulated, and education and quality metrics are closely tied together, as benchmarks for evaluating performance.

HCW education should align with:

- ✓ Facility policy & procedures
- ✓ Regulatory requirements
- ✓ Evidence-based practice

HCW Education should occur:

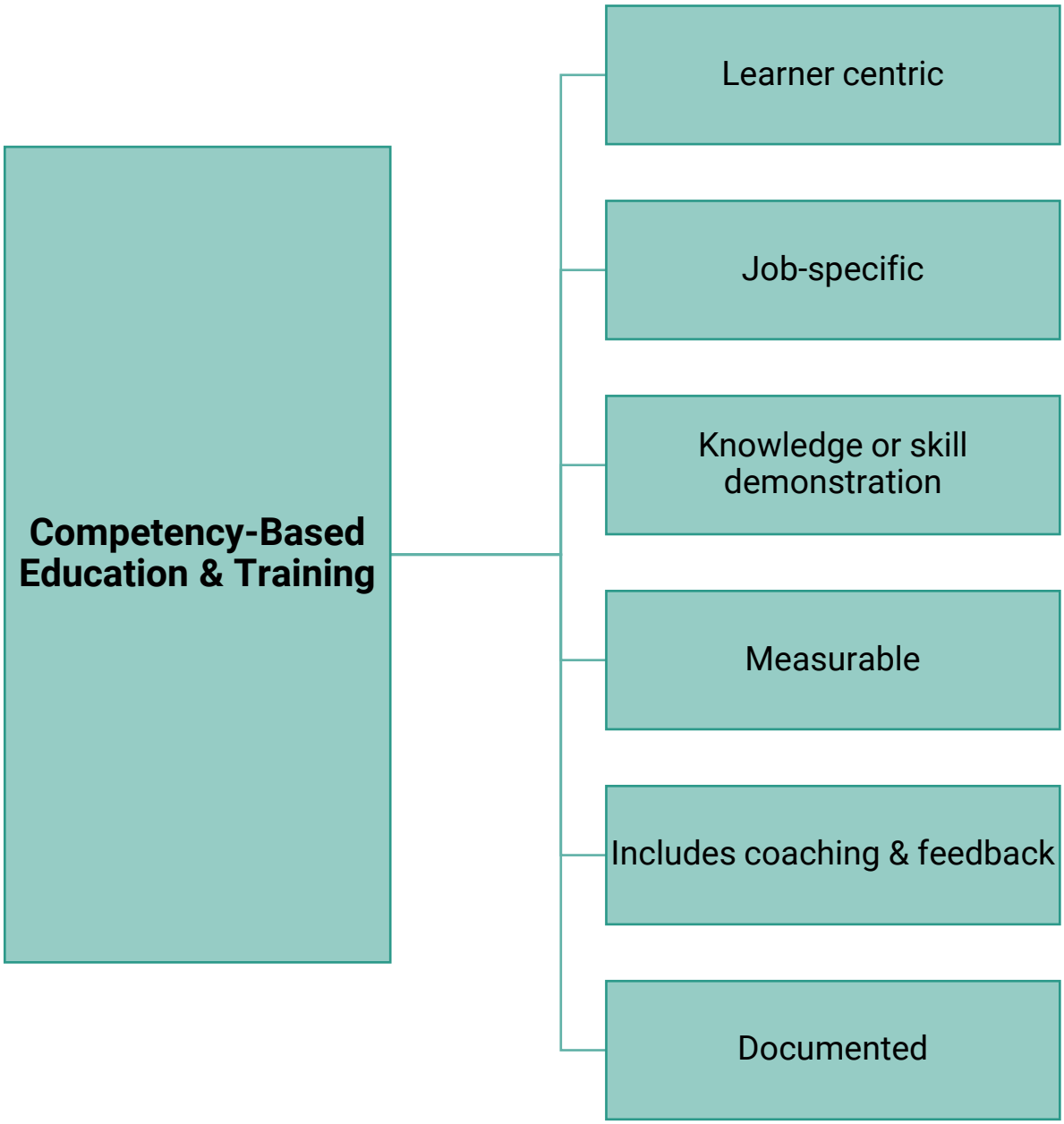
- ✓ Upon Hire
- ✓ Annually (as a refresher)
- ✓ With new equipment/protocols
- ✓ Remediation
- ✓ As part of performance/ quality improvement initiatives
- ✓ Just in time training



Adapted from Education Corner[1]

Healthcare Worker Education and Training [2]

Competency-based training focuses on the development and application of skills and knowledge. Ensuring competency as an outcome of education or training is frequently required by accrediting and regulatory agencies. Competency requires the participant to develop knowledge, attitude, and skills. Outcomes can be measured using competency assessment, quizzes/tests, and comparing benchmarks after training to those before training.



Healthcare Worker Education & Training
Questions to Consider

1. **Are policies and procedures easily accessible?**
2. **How is competency-based training assessed at your facility?**
3. **Are there any active education and training campaigns?**
4. **If an IP identifies a training need in a department, what are the resources for providing training?**
5. **How are annual education priorities established?**
6. **How does your hospital accomplish the onboarding of new staff?** *(E.g., a new employee education lecture session, mentoring/preceptorship)*
7. **Does your hospital use a computer-based training system? If so, are you able to add/edit content?**

Notes

Additional Notes

Notes

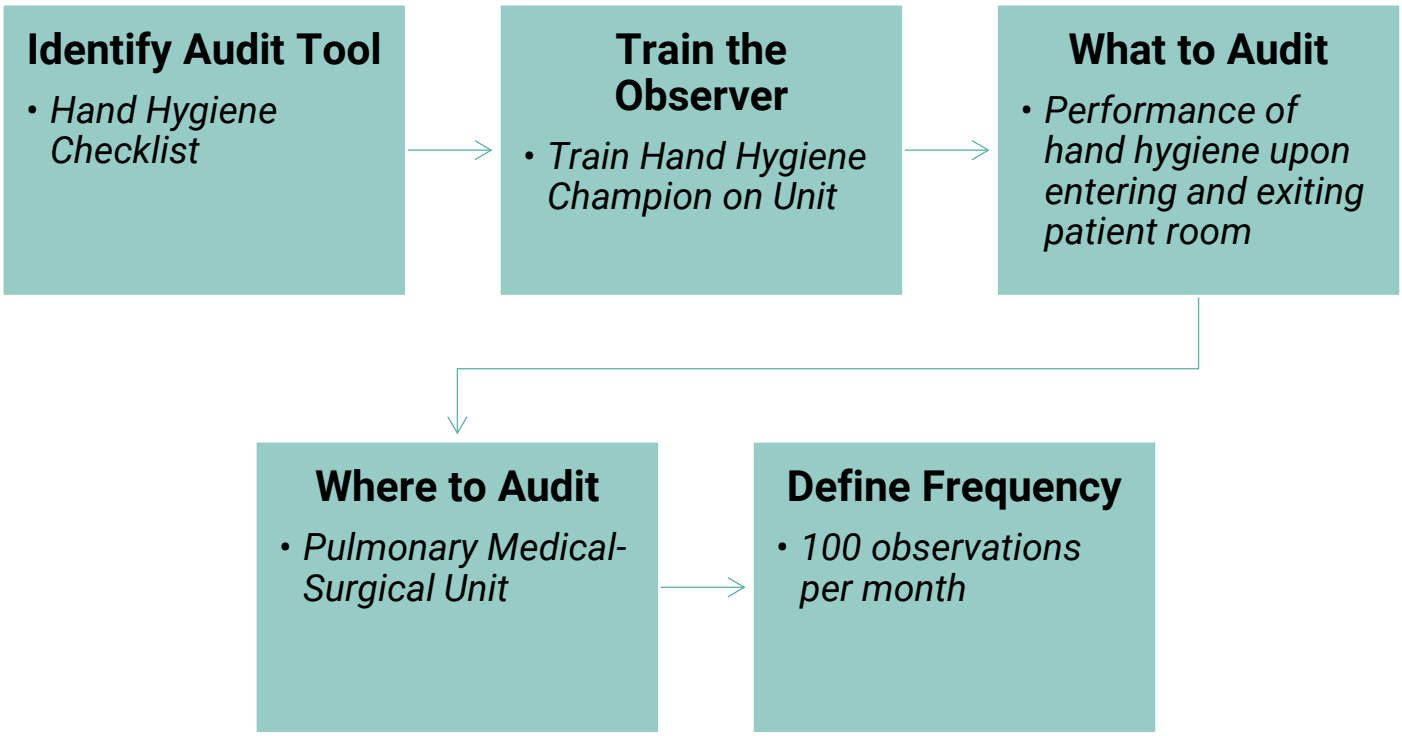
Audit and Feedback [2]

Auditing is the process of measuring adherence to processes or procedures. In infection prevention, audits are helpful tools to identify areas of opportunity and to give healthcare workers feedback on practice and performance. Auditing is not intended to be punitive, but rather to identify gaps in processes, education, or workflows. Feedback to healthcare workers should be specific, actionable, and provided in a respectful, constructive manner. Results and data from audits inform quality improvement and education initiatives for the facility.

Common Audit Methods

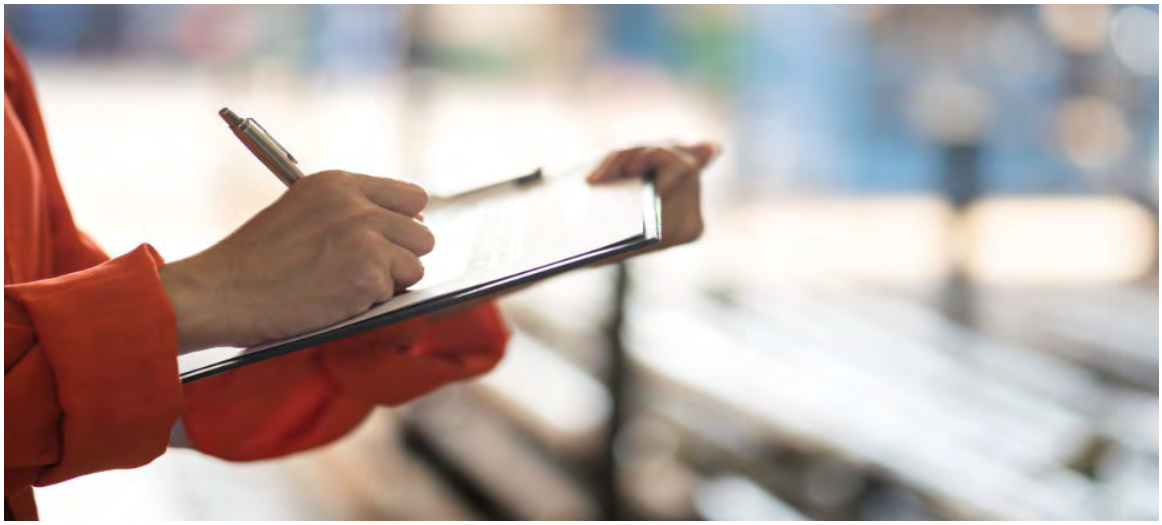
- Direct Observation
- Chart review
- Indirect Methods
  - *e.g., hand hygiene product consumption*
- Questionnaires
- Surveys
- Technology
  - *e.g., Real-time hand hygiene monitors*

IPC Audit Process and Examples



Audit & Feedback

Audits are narrower rounding with some key differences. Audits provide an official review of specific practices and procedures and are typically focused on a narrower scope than rounding. Audits are conducted using formal tools or checklists and objectively evaluate specific practices or skills.



Audit

An official examination of practices and procedures

- Formal, systematic process
- Periodic
- Objective and comprehensive to the skill or practice it is monitoring

Rounding

Real-time assessment with a wider scope and regular visits

- Proactive
- Allows for continuity between audits *(e.g., device rounds while informally monitoring the environment)*
- Allows for relationship building & visible IPC presence in area

Both

- Monitor for practice gaps and compliance
- Collect & utilize data
- Inform practice and improvement initiatives

Audit & Feedback Questions to Consider

1. **How are the gaps identified in audits addressed in the facility?** *(e.g., education or quality initiatives)*
2. **How is feedback provided to healthcare workers?**
3. **How is the data utilized and maintained?**
4. **How is the observer trained?**
5. **How often are audits performed?**
6. **What data collection methods are used?**
7. **Which IPC practices are routinely audited?** *(e.g., PPE, Hand Hygiene, point of use cleaning, safe injection, environmental cleaning etc.)*

Notes

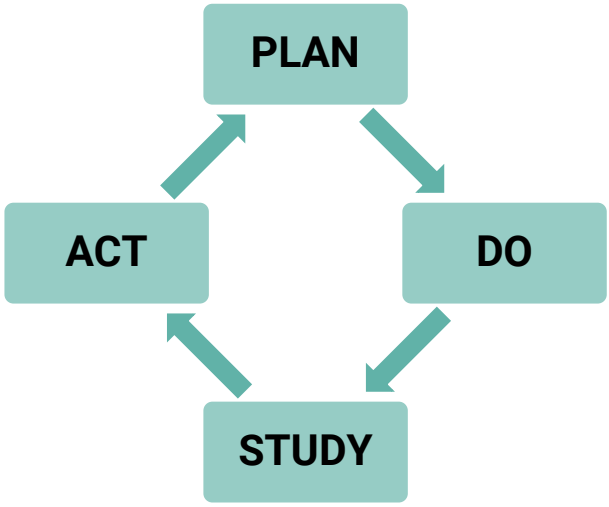
Additional Notes

Notes

Using Surveillance Data [3,4]

As we reviewed in Week 5, surveillance is the method of measuring outcomes and related processes of care, analyzing the data, and providing information to the healthcare team to assist in improving those outcomes.

Statistical analysis of surveillance data is a crucial step in preparing to communicate findings effectively. Utilizing and sharing data from surveillance is essential for the success of IPC programs. By widely sharing and communicating the results of surveillance—both process and outcome data—we enable all colleagues to work towards common goals for improving patient care and overall safety through effective infection prevention practices.



How to Use Surveillance Data [4]

Surveillance Data

- Use standardized metrics and analysis
- Provide benchmarks

Summary reports

- Infection Control Committee, Quality Committee
- Leadership, Quality and to appropriate departments, units
- Standardized report format

Improvement Opportunities

- Summarize work in progress
- Assists in identifying educational needs

Using Surveillance Data Questions to Consider

1. **How is the data communicated throughout the facility and externally?**
2. **How has the IPC program monitored data over time?**
3. **Is there any data that is collected that is not analyzed, communicated, or utilized for quality improvement? What is being done with it?**
4. **How is data analysis currently being performed in the IPC program?**
5. **How does that IPC program utilize the data that is being collected?**
6. **Generally, what data is being collected by the IPC program?**

Notes

Additional Notes

Notes

Congratulations!

You've completed the 90-Day Survival Guide!

This achievement marks the foundation of your journey in infection prevention. You've now gained essential knowledge to excel in your role and make a meaningful impact. IPC programs are complex, yet vital, to the safety and well-being of our communities, patients, and staff. Your work as an IP plays a crucial role in these efforts.

We understand that the scope of infection prevention can feel overwhelming, we hope that this guide has been able to support and empower you so that you're able to confidently champion IPC principles that foster a safer environment. Your commitment and dedication will make a difference, one prevention strategy at a time.

Week 12 Review

Internal Policies

POLICY TO REVIEW	LAST UPDATED	NEXT UPDATE	COMMENTS
❑ Policies related to education and training requirements			

Considerations for Week 12

- ❑ **Meet with Nursing and staff educators**
  - ❑ Use this link to access Conversation Starter Templates to aid in this conversation: https://innovateipc.org/ipc-support-center/education-and-resources
- ❑ **Identify and review currently used rounding tools and checklists**
- ❑ **Identify and review annual education plan related to infection prevention practices**

For additional tools and resources visit: https://Innovateipc.org

Week 12 References

1. Becton, L. Understanding the Learning Pyramid. Updated January 4, 2025. Accessed January 14, 2025. Understanding the Learning Pyramid - Education Corner

2. CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings. Centers for Disease and Control and Prevention. April 12, 2024. Accessed January 14, 2025. CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings | Infection Control | CDC

3. Agency for Healthcare Research and Quality. Health Literacy Universal Precautions Toolkit, 3rd Edition. Plan-do-study-act worksheet, directions, and examples. Accessed January 8, 2025. https://www.ahrq.gov/health-literacy/improve/precautions/tool2b.html

4. Roush, S. W. Chapter 20: Analysis of Surveillance Data. Centers for Disease and Control and Prevention. November 17, 2017. Accessed January 14, 2025. Chapter 20: Analysis of Surveillance Data | Manual for the Surveillance of Vaccine-Preventable Diseases |CDC