Infection Control

COVID-19

3.10.21

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Infection Control (IC-HHI) COVID-19

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About Kris

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President and CEO

Owns and operates
Harmony Healthcare International (HHI) a Nationally recognized, premier Healthcare Consulting firm specializing in C.A.R.E.S.
There are no nonfinancial disclosures to share.

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Agenda

- Introduction
- Infection Preventionist
- Infection Control Core Elements

1. Minimize Exposure
2. Adhere to Precautions
3. Manage Visitor Access and Movement within Facility
4. Implement Engineering Controls
5. Monitor and Manage Ill and Exposed Staff
6. Train and Educate Staff
7. Implement Environmental Infection Control
8. Establish Reporting within Facility to Public Health

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Learning Objectives

1. Identify the **8 elements** of Infection Control
2. State what is meant by **proactive infection control**
3. Identify the difference between **Standard, Contract and Airborne Precautions**

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Infection Control
Core Elements

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Introduction

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Infection Control
Core Elements Introduction

- Best practice is Infection Prevention
- All disease processes are easier to prevent than to manage control of the disease
- This is true of heart disease, diabetes and obesity

Infection Control Core Elements
Introduction Skilling Isolation and Quarantine

- According to the CDC, isolation is for people who are ill, while quarantine applies to people who have been in the presence of a disease but have not necessarily become sick themselves. Per the CDC,

"Isolation separates sick people with a contagious disease from people who are not sick."

- Isolation is for patients with symptoms and or positive tests
- Quarantine is for patients exposed but exhibits no symptoms

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Infection Control Core Elements Introduction Skilling Isolation

- **Isolation** (Z29.0) and **COVID-19** (UO7.1)
- **Coding isolation** for a patient with an active infectious disease places them into an ES1 nursing category under both Medicare Part A and certain Medicaid Case Mix states

Infection Control Core Elements
Introduction Skilling Isolation

To properly code isolation on the MDS, the patient requires:

- Isolation for a minimum of one day
- MD Orders for isolation
- Active Infectious disease ICD-10 coded:
  - On the UB-04 and
  - On the MDS (Section O. and I.)
- All treatments rendered in the patient's room with documentation to support said services are provided at bedside
  - Isolation cannot be coded if the patient is being "co-horted", meaning rooming with another patient

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Infection Control Core Elements
Introduction Daily Skilled Documentation

- **Skilled (Medicare Part A) Observation and Assessment** is Indicated when there is a reasonable probability or possibility for complications or the potential for further acute episodes
- This references conditions where there is a **"reasonable probability or possibility"** for:
  - Complications
  - Potential for further acute episodes
  - Need to identify and evaluate the need for modification of treatment
  - Evaluation of initiation of additional medical procedures

Infection Control Core Elements
Introduction Daily Skilled Documentation

- Daily observations and assessments include but are not limited to, fever, dehydration, septicemia, pneumonia, nutritional risk, weight loss, blood sugar control, impaired cognition, mood, and behavior conditions
- Example of Daily Skilled Documentation
  - "This patient requires daily skilled nursing observation and assessment of signs and symptoms related to exacerbation of COVID-19, pneumonia, and related medical conditions."
- Skilled observation is required until the treatment regimen is essentially stabilized, and the patient is no longer at risk for medical complications

Infection Control Core Elements
Introduction Quarantine and Skilled Care

- Although a quarantined patient may not have symptoms, the mere fact the patient was **potentially exposed to COVID-19** warrants daily skilled nursing to observe and assess for signs and symptoms of COVID-19
- **Observation and Assessment** references conditions where there is a "reasonable probability or possibility" for the nurse to:
  - Evaluate the patient's condition i.e., observe and assess for fever, body aches, loss of appetite,
  - Identify acute episodes, and
  - Identify the need for treatment (modifications)
  - Initiate treatment changes

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Infection Control Core Elements
Introduction Quarantine and Skilled Care

- In addition, the nurse may provide observation and assessment of signs and symptoms related to:
  - Dehydration,
  - Septicemia,
  - Pneumonia,
  - Nutritional risk,
  - Weight loss,
  - Blood sugar control,
  - Impaired cognition and
  - Mood and behavior conditions

Infection Control Core Elements
Introduction Quarantine and Skilled Care

- Nurses need to document the defined assessment **on a daily basis**
- This may include neurological, respiratory, cardiac, circulatory, pain/sensation, nutritional, gastrointestinal, genitourinary, musculoskeletal, and skin assessments
- In these situations, the Nurse may write:
  - **"This patient requires daily skilled nursing observation and assessment of signs and symptoms related to COVID-19."**
- Skilled observation is required until the **treatment regimen is essentially stabilized**

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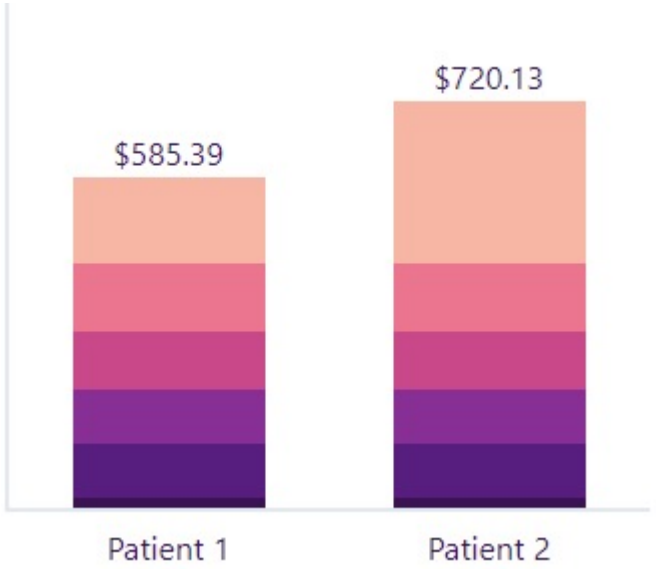
Infection Control Core Elements
Introduction Reimbursement Medicare Part A Skilled Care

- The difference in reimbursement for accurately coding **isolation** for a patient with **active infectious disease** in rural Vermont

Patient 1	Patient 2
Avg Daily Rate	Avg Daily Rate
$585.39	$720.13
30 days	30 days
PT/OT: TK	PT/OT: TK
SLP: SA	SLP: SA
Nursing: CBC2	Nursing: ES1
NTA: ND	NTA: ND
HIPPS: KAND1	HIPPS: KACD1
Vermont	Vermont
Duplicate / Delete	Duplicate / Delete

$ Impact Isolation COVID-19 (VT) =

$720.13 - $585.39 =
$134.74 per day
x 100 days =
$13,474



*Courtesy of Hopforce PDPM Calculator: https://pdpm-calc.com/

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Infection Control Core Elements
Introduction Reimbursement Medicare Part A Skilled Care

- The difference in reimbursement for accurately coding **isolation** for a patient with **active infectious disease** in urban New York

Patient 1	
Avg Daily Rate	$700.60
30 days	
PT/OT	TK
SLP	SA
Nursing	CBC2
NTA	ND
HIPPS	KAND1
New York County, New York	

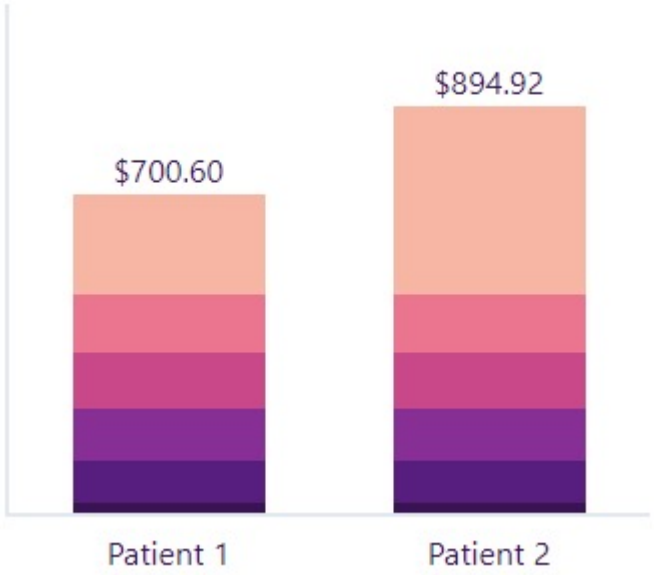
Duplicate Delete

Patient 2	
Avg Daily Rate	$894.92
30 days	
PT/OT	TK
SLP	SA
Nursing	ES1
NTA	ND
HIPPS	KACD1
New York County, New York	

Duplicate Delete

$ Impact Isolation COVID-19 (NY) =

$894.92 - $700.60 =
$194.32 per day
x 100 days =
$19,432



*Courtesy of Hopforce PDPM Calculator: https://pdpm-calc.com/

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Infection Control Core Elements
Introduction Reimbursement Medicaid Case Mix – D.C.

- In D.C., the coding of isolation also impacts the **Medicaid Case Mix** Index
  An **ES1** Level for Isolation yields 2.22 CMI
- Conservatively, the **CMI Impact Isolation**

  COVID-19 = ES1 versus CB2 = 2.22 - .95 = 1.27
- When identifying patients who are isolated and quarantined, it is imperative to assess **if the condition warrants skilled care**
- Currently, each state uses its own **Medicaid reimbursement** system
- Multiple states are collecting data in preparation for **applying the PDPM model**

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Infection Control Core Elements
Introduction PDPM Conversion MDS Collection OBRA Assessments

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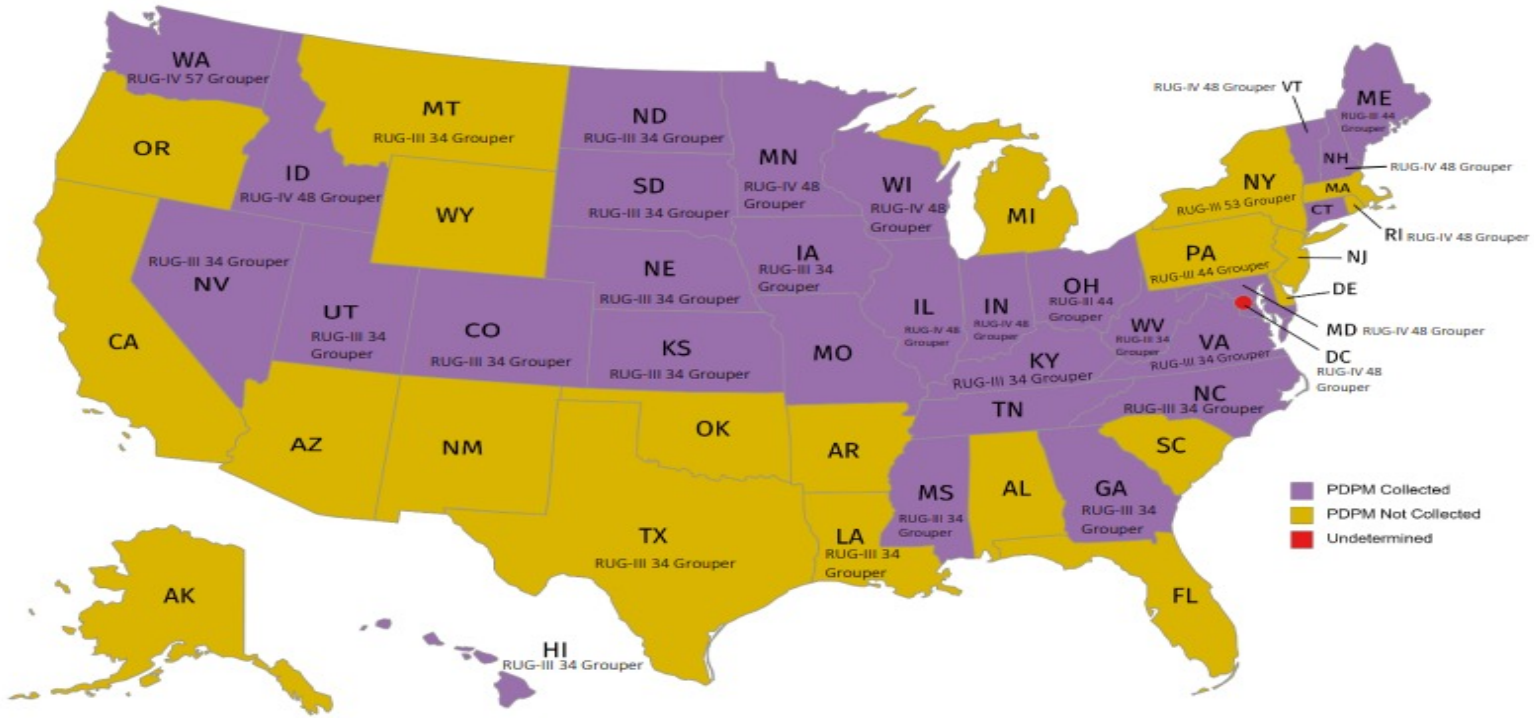
PDPM Conversion
MDS Collection OBRA Assessments
Effective 11.1.2020



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Infection Control Core Elements
Introduction ICD-10 Active Infectious Disease

- The ICD-10-CM Diagnosis Code is U07.1, Virus Identified
  - U07.1 is a billable/specific ICD-10-CM code that can be used to indicate a diagnosis for reimbursement purposes
  - ICD-10-CM U07.1 is a new 2021 ICD-10-CM code that became effective on October 1, 2020
  - This is the American ICD-10-CM version of U07.1 - other international versions of ICD-10 U07.1 may differ

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Infection Control Core Elements
Introduction ICD-10 Active Infectious Disease

- ICD-10-CM U07.1 is grouped within Diagnostic Related Group(s) (MS-DRG v38.0):
  - 177 Respiratory infections and inflammations with mcc
  - 178 Respiratory infections and inflammations with cc
  - 179 Respiratory infections and inflammations without cc/mcc
  - 791 Prematurity with major problems
  - 793 Full term neonate with major problems
  - 974 HIV with major related condition with mcc
  - 975 HIV with major related condition with cc
  - 976 HIV with major related condition without cc/mcc

Infection Control Core Elements
Introduction ICD-10 Active Infectious Disease

- The ICD-10-CM Diagnosis Code is U07.2, Virus NOT Identified
  - Clinically-epidemiologically diagnosed
  - Probable COVID-19
  - Suspected COVID-19
- https://www.who.int/classifications/icd/icd10updates/en/
- 9.29.2020 ICD-10 Update COVID-19
- A set of additional categories has been agreed to be able to document or flag conditions that occur in the context of COVID-19
- Both, 3 character and 4-character codes have been defined to respond to the different levels of coding depth that is in place in different countries

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Infection Control Core Elements
Introduction ICD-10 Active Infectious Disease

Personal history of COVID-19

- **U08.9 Personal history of COVID-19, unspecified**
- This optional code is used to record an earlier episode of COVID-19, confirmed or probable that influences the person's health status, and the person no longer suffers from COVID-19. This code should not be used for primary mortality tabulation

Post COVID-19 condition

- **U09.9 Post COVID-19 condition, unspecified**
- This optional code serves to allow the establishment of a link with COVID-19 This code is not to be used in cases that still are presenting COVID-19

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Infection Control Core Elements
Introduction ICD-10 Active Infectious Disease

Multisystem inflammatory syndrome associated with COVID-19

- **U10.9 Multisystem inflammatory syndrome associated with COVID-19, unspecified** (Temporarily associated with COVID-19)
- Cytokine storm
- Kawasaki-like syndrome
- Pediatric Inflammatory Multisystem Syndrome (PIMS)
- Multisystem Inflammatory Syndrome in Children (MIS-C)
- **Excludes**
  - Mucocutaneous lymph node syndrome {Kawasaki} (M30.3)

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Infection Control Core Elements Introduction HHI Recommendations

- Educate staff on Skilled Coverage Criteria
- Educate staff on ICD-10 Coding
- Educate staff on Isolation versus Quarantine
- Perform ongoing and retroactive Medical Record Reviews
- All patients should be reviewed immediately
- It may not be possible to retroactively correcting any errors

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Infection Control Core Elements
Introduction Infection Control

- Per the NSVH, the demographics of the age and mortality show that 78.23 % of deaths thus far are 65 years old or older!
  - 65-74 years old 22.02%
  - 75-84 years old 27.92%
  - 85 and older years old 28.29%

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Infection Control Core Elements
Introduction Infection Control

The 4 top causes of infection today:

- Visitation
- New Admissions
- Employee
- Resident Outside Appointments

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Infection Control Core Elements
Introduction Infection Control

The biggest obstacles today:

- PPE (Change gowns in between patients, even if not infected)
- COVID-19 Testing (Need widespread testing immediately)
- Staff Shortages (Much more labor intensive, it takes more staff, during outbreak and pandemic. Nursing Homes had shortages before pandemic.)
- Training ("Nursing Homes not designed to deal with level of crisis."- Dr. Avula, NY Times 4.17.20)

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Infection Control Core Elements
Introduction Infection Control

- Coronavirus is a member of larger "family of viruses" called Coronaviruses (which includes the common cold)
- The name is derived from the shape of the virus at the molecular level, it looks like a "crown" with projections. Those spikes on the virus allow it to stick to human cells and proceed to take over the normal cellular structure and then replicate itself
- This family of viruses has been around over 50 years
- COVID-19 (SARS-CoV-2) is the 7th coronavirus known to effect humans

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Infection Control Core Elements
Introduction Infection Control

COVID-19 Deaths and % Deaths by Age Reference: National Vital Statistics System (NVSS)		
Age	COVID-19 Deaths	COVID-19 % Deaths
Under 1 year	0	0.00%
1 - 4 years	1	0.02%
5 - 14 years	0	0.00%
15 - 24 years	4	0.10%
25 - 34 years	38	0.93%
35 - 44 years	102	2.51%
45 - 54 years	236	5.81%
55 - 64 years	504	12.40%
65 - 74 years	895	22.02%
75 - 84 years	1,135	27.92%
85 years plus	1,150	28.29%
Total	4,065	100.00%

As of 4.8.20, per the CDC, the U.S. has 399,752 cases of COVID-19 totaling 12,827 deaths and a 3.2% mortality

The key takeaway here is that our nation's seniors (those age 65 and older) are the most at risk to this disease. Furthermore, the residents of nursing homes have the greatest risk due to their comorbidities and pre-existing medical conditions

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Infection Control Core Elements
Introduction Impact of Infections in Nursing Homes

- There are approximately 15,600 Centers for Medicare & Medicaid Services (CMS)- certified nursing homes in United States
  - Provide care to more than 3 million Americans each year
- Between 1 and 3 million serious infections occur in nursing homes annually
  - Contribute to hospitalization, morbidity, mortality, and increased healthcare expenditures

Infection Control Core Elements
Introduction Susceptibility of Nursing Home Residents to Infection

- Age
  - With advancing age, the immune system's ability to protect against infections may begin to decline. For instance, the protective effect generated by a vaccine on the immune system might decrease
- Invasive Devices
  - The presence of invasive medical devices, such as urinary catheters or central venous catheters, provide a site for pathogens to enter the body
- Functional Impairment
  - Functional impairment can impede the ability to perform basic hygiene activities, such as bathing and oral care
- Communal Living and Group Activities
  - Communal, or shared, residence and group activities increase opportunities for the transmission of pathogens, such as influenza and norovirus

Infection Control Core Elements
Introduction Susceptibility of Nursing Home Residents to Infection

- Medications
  - Certain medications may increase susceptibility to infection. For example, steroids can affect the function of white blood cells, which are cells in the body that respond to infection
- Comorbid Conditions and Chronic Diseases
  - Comorbid conditions and chronic diseases can predispose residents to site-specific infections. For example, Chronic Obstructive Pulmonary Disease (COPD), can cause changes in lung function that might predispose a resident to pneumonia

Infection Control Core Elements
Introduction IPC Program Purpose

- To provide a safe, sanitary, and comfortable environment and to help prevent the development and transmission of communicable diseases and infections

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Infection Control Core Elements
Introduction IPC Program

- The IPC program establishes a facility-wide system to
  - Prevent
  - Identify
  - Investigate
  - Report
  - Control
- Communicable diseases and infections among residents, staff, and visitors

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Infection Control Core Elements
Introduction Core Activities

- IPC Program Activities
- Developing and Implementing Policies and Procedures
  - Developing and implementing written policies and procedures to instruct staff on the importance of IPC practices and when and how to perform them
- Establishing Antibiotic Stewardship Program
  - Establishing a program to optimize the treatment of infections and reduce adverse events when prescribing antibiotics
- Conducting an Annual Review
  - Conducting an annual review of IPC program policies, procedures, and activities and updating them, as necessary, based on the facility's IPC risk assessment

Infection Control Core Elements
Introduction Core Activities

- IPC Program Activities
- Investigating and Reporting Communicable Diseases
  - Implementing a system for investigating and reporting incidents of communicable disease to identify, prevent, and control infection outbreaks.
- Performing Infection Surveillance
  - Implementing a system for infection surveillance to identify and prevent the spread of infections
- Identifying, Recording, and Correcting IPC Incidents
  - Creating a system for recording incidents identified by the IPC program and the corrective actions taken by the facility within the Quality Assurance Performance Improvement (QAPI) program

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Infection Control Core Elements
Introduction IPC Program Policies vs. Procedures

- IPC program policies and procedures provide instruction on how to prevent the spread of pathogens and development of healthcare-associated infections
- An IPC **policy** defines and provides evidence and rationale for a required IPC practice, including guidance about practice implementation
- An IPC **procedure** outlines the specific steps or actions for performing an IPC practice

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Infection Control Core Elements
Introduction Identifying Guidelines, National Standards, and Resources

- Policies and procedures should incorporate current standards of practice based on nationally recognized, evidence-based guidelines
- Centers for Disease Control and Prevention (CDC) guidelines provide recommendations on IPC practices for healthcare facilities
  - Recommendations are ranked based on strength and quality of evidence
- https://www.cdc.gov/infectioncontrol/
- https://www.cdc.gov/infectioncontrol/guidelines/index.html

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Infection Control Core Elements
Introduction Develop Policies and Procedures Template

- Every policy and procedure document should have the same basic structure
- Every policy and procedure document should have an appropriate title, the date of last revision or review, the date that the policy or procedure takes effect, and the name and signature of the individual or committee responsible for review and approval

- Ask Harmony Healthcare International (HHI) for Hand Hygiene Template

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Infection Control Core Elements
Introduction Develop Policies and Procedures Definition

- Define the Infection Prevention and Control (IPC) Practice
- The Centers for Disease Control and Prevention (CDC) defines hand hygiene as “cleaning your hands by using either handwashing (washing hands with soap and water), antiseptic hand wash, antiseptic hand rub (i.e., alcohol-based hand sanitizer including foam or gel), or surgical hand antisepsis.”
- In this facility, hand hygiene is performed by using either alcohol-based hand rub (ABHR) or washing hands with soap and water

Infection Control Core Elements Introduction Develop Policies and Procedures Purpose and Rationale

- Purpose (provides background to explain the rationale for the policy/procedure)
- Hand hygiene is a simple and effective method for preventing the spread of pathogens, such as bacteria and viruses, which cause infections. Pathogens can contaminate the hands of a staff person during direct contact with residents or contact with contaminated equipment and environmental surfaces within close proximity of the resident. Failure to clean contaminated hands can result in the spread of these pathogens to residents, staff (including the person whose hands were contaminated) and environmental surfaces
- To protect our residents, visitors, and staff, our facility promotes hand hygiene practices during all care activities and when working in all locations within the facility

Infection Control Core Elements
Introduction Develop Policies and Procedures Responsibility

- Responsibility (defines who is responsible for following this policy/procedure)
- All staff in the facility are responsible for following hand hygiene policies and procedures, including, but not limited to, Registered Nurses (RN), Nurse Practitioners (NP), Licensed Practical Nurses (LPN), Certified Nursing Assistants (CNA), Physicians (MD/DO), Physician Assistants (PA), Respiratory Therapists (RT), Rehabilitation Therapists (e.g., Physical or Occupational Therapy), External Consultants (e.g., Pharmacy Services, Laboratory Services, Wound Care Services, Podiatrists), Case Management, Environmental Services, Dietary Services, Paramedics, students and volunteers

Infection Control Core Elements
Introduction Develop Policies and Procedures Policy Content Considerations

- Policy Content Considerations
- Define the methods for performing hand hygiene (handwashing and ABHR)
- Specify indications for performing hand hygiene
  - Specify situations when a certain hand hygiene method is preferred (e.g., handwashing if hands are visibly soiled)
- Guidance about glove use (may also be addressed in other policies)
- Guidance about fingernail length, use of artificial nails and extenders, hand care, and use of lotions
- Maintaining adequate hand hygiene supplies in all facility locations, including who is responsible and appropriate practices (e.g., proper installation and location of dispensers, frequency of checking supply levels, not topping off product containers)

Infection Control Core Elements Introduction Develop Policies and Procedures Procedure Content Considerations

- Procedure Content Considerations (outline the steps/supplies to perform the practice)
- Hand hygiene using ABHR:
- Apply on hands the amount of product recommended by the manufacturer
- Rub hands together, covering all surfaces of hands and fingers
- Continue rubbing until hands feel dry, should take approximately 15 to 20 seconds.
- Handwashing using soap and water:
- Wet hands first with water
- Apply to hands the amount of product recommended by the manufacturer
- Rub hands together vigorously for at least 15 seconds, covering all surfaces of the hands and fingers
- Rinse hands with water and use disposable towels to dry. Avoid using hot water to prevent drying of skin
- Use towel to turn off the faucet

Infection Control Core Elements Introduction Develop Policies and Procedures Guidelines, Standards, and Resources

- Guidelines, Standards, and Resources for Policy/Procedure Development
- Hand hygiene policies and procedures should be developed using evidence-based guidelines or national standards, such as resources from CDC and/or the World Health Organization. The following resources could be used for developing hand hygiene policy and procedures for your facility:
- 2002 CDC Guideline for Hand Hygiene in Healthcare Settings: https://www.cdc.gov/handhygiene/providers/guideline.html
- 2009 WHO Guidelines on Hand Hygiene in Health Care: http://www.who.int/gpsc/5may/tools/9789241597906/en/

Infection Control Core Elements
Introduction Use of Commercial IPC Policy and Procedure Templates

- Commercial or corporate policy and procedure templates may serve as a starting point for your development process
  - Templates should be tailored to ensure they reflect the care practices and services in your facility
- All policies and procedures should incorporate input from front-line staff

Infection Control Core Elements
Introduction Policies and Procedures Process for Implementation

- Successful implementation of IPC policies and procedures includes
  - Review and approval
  - Ensuring accessibility to staff
  - Providing education and training, including competency assessment
  - Conducting performance monitoring and providing feedback

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Infection Control Core Elements
Introduction IPC Program Policies and Procedures Review

- Initial review and approval by facility leadership, such as the Quality Assessment and Assurance (QAA) Committee
- Conduct an annual review that is informed by the IPC risk assessment
- Revise and update when there are changes in IPC practice recommendations or facility services

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Infection Control Core Elements
Introduction IPC Program Policies and Procedures Accessibility

- Staff must have access to current policies and procedures
  - Copies on nursing units
  - Facility intranet or online learning portal
- Utilize posters and signs when possible to serve as reminders and “cues to action.”

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Infection Control Core Elements
Introduction IPC Program Policies and Procedures: Education and Training

- Education and training provided on hire, at least annually, and whenever policies and procedures are revised
- Training should be job-specific and appropriate to the staff's learning style, background, and knowledge
- Assessment of competency to verify knowledge, skills and understanding
  - Ideally incorporate both knowledge-based testing and direct observation

Infection Control Core Elements
Introduction IPC Program Policies and Procedures: Performance Monitoring

- Monitor staff adherence to IPC practices
  - Identifies knowledge gaps
  - Opportunities for practice improvement
  - Supplies or resources needed
- Provide training for performance monitoring personnel on:
  - Expectations for correct practices
  - How to observe resident care activities
  - Using data collection tools

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Infection Control Core Elements Introduction IPC Program Policies and Procedures: Feedback

- Provide feedback to staff and leadership about adherence to IPC practices:
  - Reinforces importance of IPC activities
  - Maintains staff awareness of policies and procedures
- Performance monitoring data can be:
  - Aggregated and summarized facility-wide
  - Broken down by unit, shift, or provider type
  - Individualized and shared during on-one-one meetings or at the time of observation

Infection Control Core Elements
Introduction Facility IPC Risk Assessment

- An IPC risk assessment evaluates the resident population and services provided to identify potential infection hazards
- The purpose of the IPC risk assessment is to
  - Set IPC program priorities and goals
  - Review and update policies, procedures, and activities
  - Determine IPC resources needed to prevent pathogen transmission and development of infections

Infection Control Core Elements
Introduction Assessing Infection Hazards and Risks

- The risks for developing an infection and transmitting pathogens are based on the following
- Infections occurring in the community
- Resident population serves
- Care and services provided
- Adherence to IPC policies and procedures

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Infection Control Core Elements
Introduction Facility IPC Risk Assessment Template

- This template is provided for illustrative purposes. The content may not cover all potential infection hazards and should be modified to meet the unique needs of your facility.

- See Risk Assessment Attachment

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Infection Control Core Elements
Introduction Facility IPC Risk Assessment
Infection Events Tab

INFECTION EVENT	PROBABILITY OF OCCURRENCE				LEVEL OF HARM FROM EVENT				IMPACT ON CARE				READINESS TO PREVENT			RISK LEVEL
	(How likely is this to occur?)				(What would be the most likely?)				(Will new treatment/care be needed for r				(Are processes/resources in pla			(Scores ≥ 8 are considered hig
Score	High	Med.	Low	None	Serious Harm	Moderate Harm	Temp. Harm	None	High	Med.	Low	None	Poor	Fair	Good	
	3	2	1	0	3	2	1	0	3	2	1	0	3	2	1	
Facility-onset Infections(s)																
Device- or care-related																
Catheter-associated urinary tract infection (CAUTI)																
Central line-associated bloodstream infection (CLABSI)																
Tracheostomy-associated respiratory infection																
Percutaneous-gastrostomy insertion site infection																
Wound infection																
Other (specify):																
Resident-related																
Symptomatic urinary tract infection (SUTI)																
Pneumonia																
Cellulitis/soft tissue																
Clostridioides difficile infection																
Tuberculosis*																
Other (specify):																
Outbreak-related																
Influenza*																

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Infection Control Core Elements
Introduction Facility IPC Risk Assessment
Infection Practice Failure Tab

IPC PRACTICE FAILURES	PROBABILITY OF OCCURRENCE				IMPACT ON RESIDENT/STAFF SAFETY				CAPACITY TO DETECT			READINESS TO PREVENT			RISK LEVEL
	(How likely is this to occur?)				(Will this failure directly impact safety?)				(Are processes in place to identi			(Are policies, procedures, and re			(Scores ≥ 8 are co
Score	High	Med.	Low	None	High	Med.	Low	None	Poor	Fair	Good	Poor	Fair	Good	
	3	2	1	0	3	2	1	0	3	2	1	3	2	1	
Care activity															
Lack of accessible alcohol-based hand rub															
Lack of accessible personal protective equipment (PPE)															
Inappropriate selection and use of PPE															
Inadequate staff adherence to hand hygiene															
Inadequate staff adherence to glove and gown use when resident in Contact Precautions															
Inadequate staff adherence to facemask use when resident in Droplet Precautions															
Other (specify):_____															
Other (specify):_____															
Occupational health															

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Infection Control Core Elements
Introduction Scoring the Facility IPC Risk Assessment

- Calculating a score helps your program assess risks and vulnerabilities and prioritize IPC program activities
- Higher scores = higher risk
- Each facility may have different scores for the same event or failure
- Engage members of the QAA Committee to create a consistent standard for your facility to use

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Infection Control Core Elements
Introduction Infection Event Probability of Occurrence

- What is the probability of influenza occurring at our facility?
- Factors that influence the score
- High = 3, Medium = 2, Low = 1, None = 0
  - Prior occurrence in the facility
  - Frequency in community
  - Vaccine acceptance in facility (if applicable)

Infection Control Core Elements
Introduction Infection Event Level of Harm

- What is the level of harm of influenza occurring at our facility?
- Factors that influence the score
- Serious harm = 3, Moderate harm = 2, Temporary harm = 1, None = 0
  - Prior morbidity, including hospital transfers
  - Prior mortality
  - Resident risk factors

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Infection Control Core Elements
Introduction Infection Event Impact on Care

- What is the impact on care of influenza occurring at our facility?
- Factors that influence the score
- High = 3, Medium = 2, Low = 1, None = 0
  - Need for new treatments
  - Changes in level of care or support
  - Restrictions on facility access for staff, residents or visitors

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Infection Control Core Elements
Introduction Infection Event Readiness to Prevent

- How ready is the facility to identify and address an infection?
- Factors that influence the score
- High = 3, Medium = 2, Low = 1
  - Surveillance processes
  - Performance monitoring
  - IPC policies and procedures
  - Staff and resident vaccination rates
  - Adherence to sick leave policies

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Infection Control Core Elements
Introduction Infection Event Tallying and Interpreting the Score

- Once completed, tally individually scored items to determine the total risk level for the infection event.
- Higher Score = higher priority in assessing the facility's processes and resources to address
- Score of 8 or higher should be considered an indicator that a facility should prioritize that event for further performance improvement efforts

Infection Control Core Elements
Introduction Scoring the Facility IPC Risk Assessment: IPC Practice Failure

INFECTION EVENT	PROBABILITY OF OCCURRENCE				LEVEL OF HARM FROM EVENT				IMPACT ON CARE				READINESS TO PREVENT			RISK LEVEL
	(How likely is this to occur?)				(What would be the most likely?)				(Will new treatment/care be needed for r				(Are processes/resources in pla			(Scores ≥ 8 are considered hig
Score	High	Med.	Low	None	Serious Harm	Moderate Harm	Temp. Harm	None	High	Med.	Low	None	Poor	Fair	Good	
	3	2	1	0	3	2	1	0	3	2	1	0	3	2	1	
Facility-onset Infections(s)																
Device- or care-related																
Catheter-associated urinary tract infection (CAUTI)																
Central line-associated bloodstream infection (CLABSI)																
Tracheostomy-associated respiratory infection																
Percutaneous-gastrostomy insertion site infection																
Wound infection																
Other (specify):																
Resident-related																
Symptomatic urinary tract infection (SUTI)																
Pneumonia																
Cellulitis/soft tissue																
Clostridioides difficile infection																
Tuberculosis*																
Other (specify):																
Outbreak-related																
Influenza*																

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Infection Control Core Elements
Introduction IPC Practice Failure Probability of Occurrence

- What is the probability of staff not being able to access necessary PPE?
- Factors that influence the score
- High = 3, Medium = 2, Low = 1
  - Frequency IPC practice is performed
  - Staff adherence to IPC practice

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Infection Control Core Elements
Introduction IPC Practice Failure Impact on Safety

- What is the impact on safety of the failure to wear PPE?
- Factors that influence the score
- High = 3, Medium = 2, Low = 1
  - Harm the failure poses to residents, staff, and visitors

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Infection Control Core Elements
Introduction IPC Practice Failure Capacity to Detect

- What is the capacity for the facility to detect an IPC practice failure?
- Factors that influence the score
- High = 3, Medium = 2, Low = 1
  - Performance monitoring of adherence to practice

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Infection Control Core Elements
Introduction IPC Practice Failure Capacity to Detect

- How ready is the facility to prevent an IPC Practice Failure?
- Factors that influence the score
- Poor = 3, Fair = 2, Good = 1
  - IPC policies and procedures
  - Access to supplies
  - Training, education and competency assessments
  - Performance monitoring

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Infection Control Core Elements
Introduction Infection Event Tallying and Interpreting the Score

- Once completed, tally individually scored items to determine the total risk level for the infection event.
- Higher Score = higher priority in assessing the facility's processes and resources to address
- Score of 8 or higher should be considered an indicator that a facility should prioritize that event for further performance improvement efforts

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Infection Control Core Elements
Introduction Prioritizing the IPC Risk Assessment

- Identify high-scoring items for facility prioritization and performance improvement efforts
- For low-scoring items, evaluate what has been working in order to model these efforts in other areas
- Share results with facility administration and staff to ensure commitment to IPC efforts

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Infection Control Core Elements
Introduction Developing the IPC Risk Assessment QAA Committee

- Development and scoring will benefit from a multidisciplinary approach
- Members of your facility's QAA Committee can provide input on the process
- Involve administrative, clinical, and front-line staff

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Infection Control Core Elements Introduction Frequency of Performing an IPC Risk Assessment

- A facility's IPC risk assessment should be performed at least annually
  - Update when the possibility of new risks or hazards are identified (e.g., introduction of new services or equipment)

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Infection Preventionist

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Infection Control Core Elements
Infection Preventionist Training and Qualifications of a Nursing Home IP

- Assigned by nursing home leadership
- Works at least part-time in the facility
- May come from a variety of educational backgrounds
- Time dedicated to infection prevention and control (IPC) activities based on facility and resident needs
- Completed specialized training in IPC

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Infection Control Core Elements
Infection Preventionist Role of the IP

- IP plays a critical role in keeping residents, staff, and visitors safe from infection
- Should be knowledgeable about infections, including how to:
  - Detect
  - Control
  - Prevent

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Infection Control Core Elements
Infection Preventionist Key Infectious Disease Concepts

- Epidemiology
- The study of the distribution and determinants of health-related states or events in specified populations and its application to the control of health problems
- IPs use principles from epidemiology to detect, control, and prevent the transmission of pathogens and the development of infections

Infection Control Core Elements
Infection Preventionist Key Infectious Disease Concepts

- Epidemiology
  - Understanding the frequency of infections among residents and staff
  - Evaluating patterns and distribution of infections
  - Identifying characteristics and exposures among residents and staff that may increase their risk of infection

Infection Control Core Elements
Infection Preventionist Key Infectious Disease Concepts

- Surveillance
- The ongoing systematic collection, analysis, interpretation, and dissemination of data
- Conducted to identify infections and monitor the performance of IPC practices to reduce infection risk and prevent the spread of pathogens among residents, staff, and visitors

Infection Control Core Elements
Infection Preventionist Key Infectious Disease Concepts

- Surveillance
  - Selecting process and outcome measures for monitoring
  - Using standard definitions or criteria and data collection methods
  - Analyzing surveillance data to establish baseline infection rates
  - Reporting and using surveillance data to inform prevention activities

Infection Control Core Elements
Infection Preventionist Key Infectious Disease Concepts

- Common Infectious Diseases
- Resident-related infections
  - UTI
  - Pneumonia
  - Skin or soft tissue infections like cellulitis
- Device or care-related infections
  - Catheter associated UTIs
  - Central line-associated bloodstream infections
  - Wound Infections
- Outbreak related infections
  - Viral respiratory infections
  - Viral gastroenteritis
  - Scabies

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Infection Control Core Elements
Infection Preventionist Key Infectious Disease Concepts

- Pathogen Transmission
  - Source of reservoir of infectious agents with a portal of exit for the agent
  - Susceptible host with a portal of entry receptive to the agent
  - Mode of transmission for the infectious agent

Infection Control Core Elements
Infection Preventionist Key Infectious Disease Concepts

- Diagnosis of Infectious Diseases
- Culture-based diagnostic tests:
  - Takes time to grow organism for identification
  - Allows for pathogen testing for antimicrobial susceptibility
- Nucleic acid amplification diagnostic tests:
  - Detect presence of genetic material
  - Polymerase chain reaction (PCR) is one example
  - Can provide faster results
  - Some can detect multiple pathogens from a single sample
  - May not be able to provide antimicrobial susceptibility

Infection Control Core Elements
Infection Preventionist Key Infectious Disease Concepts

- Diagnosis of Infectious Diseases
- Important concepts for the interpretation of diagnostic test results
  - Likelihood of misleading test results
  - Mistakes with sample collection
  - Potential for contamination of culture
  - Possibility that a positive test reflects colonization rather than true infection

Infection Control Core Elements
Infection Preventionist Key Infectious Disease Concepts

- Antimicrobials are drugs used to treat infections
- IPs should understand the role of antibiotics and other antimicrobials in treating infections, including:
  - Common classes of antibiotics and how they vary in spectrum of activity
  - The difference between prophylactic, empiric, and therapeutic use of antimicrobials
  - The relationship between antimicrobial use and the emergence of resistance
  - Strategies to optimize the treatment of bacterial infections while reducing harms and adverse events from these drugs (i.e., antibiotic stewardship)

Infection Control Core Elements
Infection Preventionist Key Infectious Disease Concepts

- Antimicrobials are drugs used to treat infections
- Work with your consultant pharmacist and clinical leadership to provide education and develop guidance for how antimicrobials should be used to manage infections in your facility
- https://www.idsociety.org/practice-guideline/practice-guidelines#/date_na_dt/DESC/0/+/
- https://paltc.org/product-type/cpgs-clinical-practice-guidelines

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Infection Control Core Elements
Infection Preventionist Practical Skills for an IP

- Communicator
- Leader
- Educator
- Critical thinker and data interpreter
- Collaborator

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Infection Control Core Elements
Infection Preventionist Communicator

- Possesses strong written and verbal skills
- Concisely and accurately communicates critical information to stakeholders
- Tailors messaging to reach different audiences
- Creates a dialogue and engages facility staff

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Infection Control Core Elements
Infection Preventionist Collaborator

- Builds teams and consensus
- Engages internal and external partners for support and resources
- Serves as a liaison to public health authorities

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Infection Control Core Elements
Infection Preventionist Critical Thinker and Data Interpreter

- Translates scientific evidence into practice
- Uses performance monitoring and surveillance data to inform IPC activities
- Shifts priorities and resources when new problems or questions arise

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Infection Control Core Elements
Infection Preventionist Leader

- Oversees the IPC program
- Promotes a culture of safety
- Demonstrates accountability, integrity, organization, and time management
- Advocates for IPC program resources
- Challenges assumptions and considers alternative perspectives

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Infection Control Core Elements
Infection Preventionist Educator

- Adapts messages to address differences in the backgrounds and learning needs
- Uses a variety of learning formats to deliver IPC education
- Evaluates the effectiveness of education

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Infection Control Core Elements
Infection Preventionist IP Support Network

- Facility IP
- Members of IP Professional Group
- IPs at Affiliated or Transferring Hospitals
- Staff from State and Local Health Departments
- Your Corporate IP

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Infection Control Core Elements
Infection Preventionist Quality Innovation Network-Quality Improvement Organizations

- Supported by the Centers for Medicare & Medicaid Services (CMS)
- Work with healthcare providers to improve patient safety and clinical care
  - Consultants within the QIN-QIO work with individual nursing homes on a voluntary basis
  - Support is available at no cost to the facility

- http://qioprogram.org/locate-your-qio?map=qin

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Infection Control Core Elements
Infection Preventionist State-Based Healthcare-Associated Infection Prevention Programs

- Supported by the CDC
- Examples of support to nursing homes include:
  - Assistance during the response to outbreaks and other IPC practice breaches
  - Support and training to facility staff on the use of National Healthcare Safety Network (NHSN)
  - Education and resources to support IPC and antibiotic stewardship activities
  - Convening healthcare facilities within a community to prevent healthcare-associated infections (HAIs) or the spread of antibiotic-resistant pathogens
  - https://www.cdc.gov/hai/state-based/index.html

1. Minimize Exposure

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1 Infection Control Core Elements
Minimize Exposure

Minimize Exposure

- **Visitation**

  Move swiftly upon first identified case if not sooner.

- **New Admissions**

  Work closely with hospitals, quarantine upon admission

- **Employee (Screening)**

  Temperatures, Symptoms, Staff go to grocery stores and return. Live at facility.

- **Resident Outside Appointments**

  Limit for only essential appointments (Dialysis)

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1 Infection Control Core Elements
Minimize Exposure

- The resident should not leave the protection of their isolation room
- That room is the first line of defense to minimize exposure of others to the infection
- There are situations that cannot be rescheduled like dialysis
- Other appointments can usually be postponed

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1 Infection Control Core Elements
Minimize Exposure

- The decision to delay and appointment needs to be made by the consulting office

- In the case of dialysis, some centers will choose to conduct treatments in hospital dialysis centers where they are better prepared to place the patient in isolation

- You should **never** send an isolation patient out of the building without first notifying the receiving facility and the transport company

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1 Infection Control Core Elements
Minimize Exposure COVID-19 Infection Control

- S.P.I.C.E
  - Surveillance
  - Protection
  - Isolate
  - Communicate
  - Evaluate

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2. Adhere to Precautions

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2 Infection Control Core Elements
Adhere to Precautions

- Identify Precautions Needed (Most Strict Initially)
- At the first sign of infection, a preliminary diagnosis needs to be made and the patient placed in precautions
- If the resident develops a spontaneously draining wound not associated with a surgical wound or trauma you might be thinking it could be MRSA or other infectious process

2 Infection Control Core Elements
Adhere to Precautions

- Place the resident on contact precautions until you have microbiological confirmation of the organism

- It may take 3 days for that test result but think of the number of opportunities of cross contamination to other residents and staff members

- When in doubt, isolate - stop the chain on contamination

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2 Infection Control Core Elements
Adhere to Precautions

- Contact Precautions
  - Staff don gloves and isolation gown before contact with the resident and/or his/her environment
- Droplet Precautions
  - Staff don a facemask within six feet of a resident
- Airborne Precautions
  - Staff don an N95 or higher level respirator prior to room entry of a resident

2 Infection Control Core Elements
Adhere to Precautions

- Undiagnosed Respiratory Infection
  - Staff follow Standard, Contact, and Droplet Precautions (i.e., facemask, gloves, isolation gown) with eye protection when caring for a resident unless the suspected diagnosis requires Airborne Precautions (e.g., tuberculosis)

2 Infection Control Core Elements
Adhere to Precautions

- Known or Suspected COVID-19
  - Staff wear gloves, isolation gown, eye protection and an N95 or higher-level respirator if available
  - A facemask is an acceptable alternative if a respirator is not available.
  - Additionally, if there are COVID-19 cases in the facility or sustained community transmission, staff implement universal use of facemasks while in the facility (based on availability)
  - When COVID-19 is identified in the facility, staff wear all recommended PPE (i.e., gloves, gown, eye protection and respirator or facemask) for the care of all residents on the unit (or facility-wide based on the location of affected residents), regardless of symptoms (based on availability)

2 Infection Control Core Elements
Adhere to Precautions

- COVID-19 most commonly spreads during close contact
  - People who are physically near (within 6 feet) a person with COVID-19 or have direct contact with that person are at greatest risk of infection
  - When people with COVID-19 cough, sneeze, sing, talk, or breathe they produce respiratory droplets. These droplets can range in size from larger droplets (some of which are visible) to smaller droplets. Small droplets can also form particles when they dry very quickly in the airstream
  - Infections occur mainly through exposure to respiratory droplets when a person is in close contact with someone who has COVID-19

2 Infection Control Core Elements
Adhere to Precautions

- Respiratory droplets cause infection when they **are inhaled or deposited on mucous membranes**, such as those that line the inside of the nose and mouth
- As the respiratory droplets travel further from the person with COVID-19, the concentration of these droplets decreases. **Larger droplets fall out of the air due to gravity. Smaller droplets** and particles **spread apart in the air**
- **With passing time**, the amount of infectious virus in respiratory droplets also **decreases**

2 Infection Control Core Elements
Adhere to Precautions

- There is evidence that under certain conditions, people with COVID-19 seem to have infected others who were more than 6 feet away. These transmissions occurred within enclosed spaces that had inadequate ventilation. Sometimes the infected person was breathing heavily, for example while singing or exercising
  - Under these circumstances, scientists believe that the amount of infectious smaller droplet and particles produced by the people with COVID-19 became concentrated enough to spread the virus to other people. The people who were infected were in the same space during the same time or shortly after the person with COVID-19 had left
- Available data indicate that it is much more common for the virus that causes COVID-19 to spread through close contact with a person who has COVID-19 than through airborne transmission

2 Infection Control Core Elements
Adhere to Precautions

- COVID-19 spreads **less commonly** through contact with **contaminated surfaces**
  - Respiratory droplets can also **land on surfaces** and objects. **It is possible** that a person could get COVID-19 by touching a surface or object that has the virus on it and then **touching their own mouth, nose, or eyes.**
  - Spread from **touching surfaces** is **not** thought to be a **common way** that COVID-19 spreads

2 Infection Control Core Elements
Adhere to Precautions

- COVID-19 rarely spreads between people and animals
  - It appears that the virus that causes COVID-19 can spread from people to animals in some situations. CDC is aware of a small number of pets worldwide, including cats and dogs, reported to be infected with the virus that causes COVID-19, mostly after close contact with people with COVID-19
  - At this time, the risk of COVID-19 spreading from animals to people is considered to be low

2 Infection Control Core Elements
Adhere to Precautions

- Protect yourself and others
  - The best way to prevent illness is to avoid being exposed to this virus. You can take steps to slow the spread
    - Stay at least 6 feet away from others, whenever possible. This is very important in preventing the spread of COVID-19
    - Cover your mouth and nose with a mask when around others. This helps reduce the risk of spread both by close contact and by airborne transmission
    - Wash your hands often with soap and water. If soap and water are not available, use a hand sanitizer that contains at least 60% alcohol

2 Infection Control Core Elements
Adhere to Precautions

- Avoid crowded indoor spaces and ensure indoor spaces are properly ventilated by bringing in outdoor air as much as possible. In general, being outdoors and in spaces with good ventilation reduces the risk of exposure to infectious respiratory droplets
- Stay home and isolate from others when sick
- Routinely clean and disinfect frequently touched surfaces
- Pandemics can be stressful, especially when you are staying away from others. During this time, it's important to maintain social connections and care for your mental health

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2 Infection Control Core Elements
Adhere to Precautions

- Aerosol
  - Aerosol is a **catch-all term** for any solid or liquid particle so **tiny and lightweight** it can become **suspended in air** and float. Smoke and dust are examples. Some viruses can become aerosols, making airborne transmission possible
  - The World Health Organization defines aerosol transmission, also known as **airborne transmission**, as **"very small droplets ... that are able to stay suspended in the air for longer periods of time."**

2 Infection Control Core Elements
Adhere to Precautions

- Droplets
  - Droplets are large mucus or saliva particles heavier than air that fall toward the ground as soon as they're expelled, and droplet transmission typically occurs when a droplet containing a virus comes in contact with another person's eyes, nose or mouth. An example might be a loud-talking person whose droplets make contact with your face
  - According to the WHO, current evidence suggests that close-contact, person-to-person transmission is the primary way COVID-19 spreads, as droplets "are released from the mouth or nose when an infected person coughs, sneezes, speaks or sings, for example." People in close contact with an infected person can become infected "when those infectious droplets get into their mouth, nose or eyes."

2 Infection Control Core Elements
Adhere to Precautions

- How has our understanding of COVID-19 changed over time?
  - COVID-19 originally was thought to be spread only by droplet transmission -- 6-foot social distancing guidelines were based on research that showed droplet transmission occurred most easily at such short distances. Scientists still believe this is the primary way coronavirus spreads person to person
  - But more evidence is mounting that the virus could become an aerosol, leading to airborne spread. Although many scientists now believe airborne transmission is possible, many agree the majority of infections happen when people are crowded close together, exchanging the heavier droplets.

2 Infection Control Core Elements
Adhere to Precautions

- The WHO updated its online COVID-19 guidance in July 2020 to include information on airborne transmission.
- The CDC Centers for Disease Control and Prevention followed suit on September 18th, 2020 but retracted the information a few days later, stating it was posted in error.
- The CDC has yet to issue an update on airborne transmission
- For many scientists, the CDC's confusing, disjointed stance on airborne transmission has been discouraging. The scientific community decried the mixed messaging, emphasizing the need for clear, unified public information
- According to Schaffner, with clearer guidance from the CDC, businesses operating indoor spaces can better prepare by taking precautions, such as adding new ventilation systems and limiting crowds, to defend against possible transmission

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2 Infection Control Core Elements
Adhere to Precautions

- Contact Precautions
  - Staff don gloves and isolation gown before contact with the resident and/or his/her environment
- Droplet Precautions
  - Staff don a facemask within six feet of a resident
- Airborne Precautions (Aerosol)
  - Staff don an N95 or higher-level respirator prior to room entry of a resident

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2 Infection Control Core Elements
Adhere to Precautions

- Undiagnosed Respiratory Infection
  - Staff follow Standard, Contact, and Droplet Precautions (i.e., facemask, gloves, isolation gown) with eye protection when caring for a resident unless the suspected diagnosis requires Airborne Precautions (e.g., tuberculosis)

2 Infection Control Core Elements
Adhere to Precautions

- Known or Suspected COVID-19
  - Staff wear gloves, isolation gown, eye protection and an N95 or higher-level respirator if available
  - A facemask is an acceptable alternative if a respirator is not available
  - Additionally, if there are COVID-19 cases in the facility or sustained community transmission, staff implement universal use of facemasks while in the facility (based on availability)

2 Infection Control Core Elements
Adhere to Precautions

- Known or Suspected COVID-19
  - When COVID-19 is identified in the facility, staff wear all recommended PPE (i.e., gloves, gown, eye protection and respirator or facemask) for the care of all residents on the unit (or facility-wide based on the location of affected residents), regardless of symptoms (based on availability)

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2 Infection Control Core Elements
Adhere to Precautions

- Patient Placement
  - Isolate patient in private room
  - Co-horting (2 sick patients in same room) is being readdressed by CDC and CMS
  - Do not cohort unless you have no other option. Isolate.
  - 50% of infected patients have NO SYMPTOMS!

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2 Infection Control Core Elements
Adhere to Precautions

- Patient Placement
  - AIIRS are single patient rooms at negative pressure related to surrounding areas and a minimum of 6 air changes per hour exhausted directly to the outside.
  - HEPA High Efficiency Particulate Air
  - Facemask on patient
  - PPE on Staff
  - Only essential staff enter room
  - Designated equipment

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2 Infection Control Core Elements
Adhere to Precautions

- PPE Personal Protective Equipment
- Training and Staff Demonstrate an Understanding
  - Gloves
    - Wash hands before and after donning
    - Replace Gloves if tear or become contaminates
  - Gowns
    - On upon entering. Change if becomes soiled

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2 Infection Control Core Elements
Adhere to Precautions

- PPE Personal Protective Equipment
- Training and Staff Demonstrate an Understanding
  - Eye Protection
    - Goggles, Disposable face shield
    - Remove before leaving room
    - N-95 filtering facepiece

Harmony Healthcare INTERNATIONAL

2 Infection Control Core Elements
Adhere to Precautions

- Patient Placement
  - Isolate patient in private room
  - Co-horting (2 sick patients in same room) is being readdressed by CDC and CMS. Do not cohort unless you have no other option.
  - 50% of infected patients have NO SYMPTOMS!

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2 Infection Control Core Elements
Adhere to Precautions

- Patient Placement
  - AIIRS are single patient rooms at negative pressure related to surrounding areas and a minimum of 6 air changes per hour exhausted directly to the outside.
  - HEPA High Efficiency Particulate Air
  - Facemask on patient
  - PPE on Staff
  - Only Essential staff enter room
  - Designated equipment

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2 Infection Control Core Elements
Adhere to Precautions

- Patient Placement
  - Keep log of staff who care for or enter room
  - Dedicated non critical patient care items (Blood Pressure Cuffs)
  - If cannot, clean and disinfect before and after usage

2 Infection Control Core Elements
Adhere to Precautions

- Hand Hygiene
  - Before and After patient all contact
  - Contact with potentially infectious material
  - Before putting and removal PPE

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2 Infection Control Core Elements
Adhere to Precautions

- PPE Personal Protective Equipment
- Training and Staff Demonstrate an Understanding
  - Gloves
    - Wash hands before and after donning
    - Replace Gloves if tear or become contaminates
  - Gowns
    - On upon entering. Change if becomes soiled

Harmony Healthcare INTERNATIONAL

2 Infection Control Core Elements
Adhere to Precautions

- PPE Personal Protective Equipment
- Training and Staff Demonstrate an Understanding
  - Respiratory Protection
  - Isolation
  - Diagnostic Respiratory Specimen
  - Eye Protection
    - Goggles, Disposable face shield
    - Remove before leaving room
    - N95 filtering facepiece

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3. Manage Visitor Access and Movement within Facility

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3 Infection Control Core Elements
Manage Visitor Access and Movement within Facility

Manage Visitor Access and Movement within Facility

- Procedures for Mentoring, Managing and Training Visitors
- Restrict Visitors
- Screen Visitors
- Limit Movement within facility
- Not present during aerosol-generating procedures
- Follow respiratory hygiene and cough etiquette

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3 Infection Control Core Elements
Manage Visitor Access and Movement within Facility

Manage Staff Movement within and without Facility

- Staff Assignments to Specific Units
- Staff with Secondary Positions
- Showers and Locker Rooms (Supplied by DPH)
- COVID Unit with Separate Entrance
- Staffing COVID Units with COVID positive staff as long as no fever
- COVID positive staff no need to wear masks but need to wear gloves and gowns
- Staff residing at facility

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3 Infection Control Core Elements
Manage Visitor Access and Movement within Facility

- With a single patient on isolation, the family may visit after first being thoroughly educated about the infection and their risks

- They must also be instructed on hand hygiene and proper PPE use

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3 Infection Control Core Elements
Manage Visitor Access and Movement within Facility

- The facility may choose to limit the number of visitors and/or the time they can visit
- Visitors should be instructed to exit the building immediately after visiting
- Many facilities provide an escort to and from the patient room to limit visitor access to the rest of the facility

4. Implement Engineering Controls

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4 Infection Control Core Elements
Implement Engineering Controls

- Implement Engineering Controls
  - Physical Barriers
  - Air Handling Systems
  - Private Rooms
  - Curtains

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4 Infection Control Core Elements
Implement Engineering Controls

- First determine the most appropriate placement for the patient

- It may be necessary to move a Patient with a draining MRSA wound away from other surgical patients to a medical area

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4 Infection Control Core Elements
Implement Engineering Controls

- If it is determined that there is a need to create an entire isolation unit, first look at areas with a natural barrier like fire doors instead of building a temporary barrier

- A dedicated isolation should have an entrance only from the facility and an exit to exit the building

- The entrance is considered clean and the exit is considered dirty

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4 Infection Control Core Elements
Implement Engineering Controls

- Implement Engineering Controls
  - Physical Barriers
  - Air handling Systems
  - Private Rooms
  - Curtains

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4 Infection Control Core Elements
Implement Environmental Controls

- Implement Environmental Infection Control
  - Dedicated medical equipment for patient care
  - Disinfect
  - Routine Cleaning
  - Laundry, Food Service Utensils and Medical Waste

4 Infection Control Core Elements
Implement Environmental Controls

- Implement Environmental Infection Control
  - Cleaning and Disinfecting Facility
    - Disposable gowns
    - Clean surfaces soap and water
    - High Touch Surfaces
    - Soft Touch Surfaces
    - Electronics
    - Laundry
    - Building
    - Additional Considerations

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5. Monitor and Manage Ill and Exposed Staff

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5 Infection Control Core Elements
Monitor and Manage Ill and Exposed Staff

- Monitor and Manage Ill Patients and Exposed Staff
  - Public Health Authorities

    - CMS Memo 4.19.20: Notify State or Local health department residents and staff with suspected or confirmed COVID-19 resulting in hospitalization or death, or 3 or more residents or staff with new-onset respiratory symptoms within 72 hours of each other

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5 Infection Control Core Elements
Monitor and Manage Ill and Exposed Staff

- Monitor and Manage Ill Patients and Exposed Staff
  - Testing (broader and faster)
  - Implement Sick Leave Policies
  - Tracking Sheet
    - Room, Name, Age, Date of Onset Symptoms or Quarantine, Date of Testing, Results of Testing, Code Status, Hospitalization Status, Individuals in Contact, Family Contacted, Date of Deaths

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5 Infection Control Core Elements
Monitor and Manage Ill and Exposed Staff

- Staff that provide direct care for patients in isolation precautions need education about the infection and what to look for in themselves

- This education goes hand-in-hand with the education on PPE

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5 Infection Control Core Elements
Monitor and Manage Ill and Exposed Staff

- Staff members who are suspected of being infected should be seen by their primary care physician

- In some cases, the medical director will provide this support depending on the arrangement with the facility

- Staff usually may not work while actively infected and should require a physician statement to return to work. The ICP and Human resources will monitor the employee

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6. Train and Educate Staff

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6 Infection Control Core Elements
Train and Educate Staff

- Train and Educate Staff
  - Medically Cleared, Trained and Fit Tested for Respiratory Device Use
  - Comfort Care Staff Education

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6 Infection Control Core Elements
Train and Educate Staff

- With each decision to place a patient in isolation, it is imperative that HCP be trained and re-educated
- This training should be a review of the sources and modes of transmission for the infective agent
- Training should also include a review of PPE needed and hand hygiene

6 Infection Control Core Elements
Train and Educate Staff

- It is important to personalize the care of each patient in isolation specifically for that resident

- It is extremely difficult for dementia patients to understand isolation

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6 Infection Control Core Elements
Train and Educate Staff

- Do not forget to train and educate the patient and their visitors
- Visitors can become infected and transmit an infection like anyone else
- They must be assisted and taught the proper use of all PPE

7. Implement Environmental Infection Control

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7 Infection Control Core Elements
Implement Environmental Infection Control

- All state and local health departments have reporting requirements for certain infections that pose higher potential for spread to the public in general

- Along with reporting specific diseases, there are reporting guidelines for reporting outbreaks that involve multiple residents, usually this is any outbreak which involves greater than 10/% of the residents

7 Infection Control Core Elements
Implement Environmental Infection Control

- Implement Environmental Infection Control
  - Cleaning and Disinfecting Facility (CDC attachment)
    - Disposable gowns
    - Clean surfaces soap and water
    - High Touch Surfaces
    - Soft Touch Surfaces
    - Electronics
    - Laundry
    - Building
    - Additional Considerations

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Equipment in the Chain of Infection

- Study sampled 203 blood pressure cuffs at a single hospital
- Bacterial contamination found on
  - Inner surface of cuffs: 45%
  - Outer surface of cuffs: 23%
- Potentially pathogenic organisms, including methicillin-resistant MRSA, isolated from 13% of cuffs
- Study encouraged the development of standardized cleaning and disinfection procedures for blood pressure cuffs.
- Proper use, including reprocessing of reusable resident care equipment, is necessary to break the chain of infection

7 Infection Control Core Elements
Implement Environmental Infection Control Single Resident vs. Multi-Resident Equipment

- Refer to the manufacturer-provided labeling and instructions for use

7 Infection Control Core Elements
Implement Environmental Infection Control Single Resident Equipment

- Single-use equipment: Intended to be used once and then discarded
  - Examples include needles and syringes
- Reusable single-resident equipment: Can be used more than once but must be dedicated to a single resident
  - Examples include insulin pens; reusable fingerstick devices; and personal care items like razors, nail clippers, and toothbrushes

7 Infection Control Core Elements
Implement Environmental Infection Control Multi-Resident Equipment

- May be used for more than one resident after reprocessing (cleaning followed by either disinfection or sterilization)
- Examples include podiatry equipment, dental equipment, rehabilitation equipment, blood pressure cuffs, and pulse oximeters

7 Infection Control Core Elements
Implement Environmental Infection Control Spaulding Classification Scheme

- Categories are based on the degree of risk for infection involved in use of the equipment
- Non-Critical
- Semi-Critical
- Critical

7 Infection Control Core Elements
Implement Environmental Infection Control Critical Equipment

- Enters sterile tissue or the vascular system
  - Examples include surgical instruments
  - Must be cleaned and sterilized before reuse
- Cleaning:
  - Manual or mechanical removal of visible soil from an object using water with detergents or enzymatic products
  - Reduces bioburden and removes foreign material that could interfere with disinfection or sterilization
- Sterilization:
  - Destroys all microorganisms on the surface of an object

7 Infection Control Core Elements
Implement Environmental Infection Control Semi-Critical Equipment

- Comes into contact with mucous membranes or nonintact skin
  - Example: Cuticle and nail nippers
- At a minimum, requires cleaning followed by high-level disinfection
- High-level disinfection:
  - Complete elimination of all microorganisms, except for small numbers of bacterial spores

7 Infection Control Core Elements
Implement Environmental Infection Control Non-Critical Equipment

- Comes into contact with intact skin but not mucous membranes
  - Examples: Blood pressure cuffs, stethoscopes, rehabilitation equipment, and walking aids
- Requires cleaning followed by low- or intermediate-level disinfection

7 Infection Control Core Elements
Implement Environmental Infection Control Low-level Disinfection

- Destroys all vegetative bacteria (except tubercle bacilli) and most viruses Does not kill bacterial spores
- Examples of low-level disinfectants include hospital disinfectants registered with the Environmental Protection Agency (EPA) with a HBV and HIV label claim
- Generally appropriate for most non-critical equipment

7 Infection Control Core Elements
Implement Environmental Infection Control Intermediate-level Disinfection

- Kills a wider range of pathogens than a low-level disinfectant. Does not kill bacterial spores
- EPA-registered hospital disinfectants with a tuberculocidal claim are considered intermediate-level disinfectants
- Should be considered for non-critical equipment that is visibly contaminated with blood
  - Low-level disinfectant with label claim against HBV and HIV could also be used

7 Infection Control Core Elements
Implement Environmental Infection Control Considerations for Reprocessing Non-Critical Equipment

- Most equipment used for multiple residents in nursing homes will be non-critical
- Cleaning and disinfection of non-critical equipment can often be performed at the point of use
- Frequency of cleaning and disinfection of non-critical equipment:
  - Multi-resident equipment: Clean and disinfect after each use
  - Reusable single-resident equipment: Clean and disinfect when visibly soiled and on a regular basis (e.g., daily or several times per week)

7 Infection Control Core Elements
Implement Environmental Infection Control Considerations for Reprocessing Non-Critical Equipment

- Use an EPA-registered disinfectant labeled for use in healthcare
- Follow the label's safety precautions for handling and instructions for product preparation and application
- https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants

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Infection Control Core Elements
Implement Environmental Infection Control Application of Disinfectants and One-Step Cleaners and Disinfectants

- Cleaning should be performed before disinfection
  - Cleaning removes foreign material that could interfere with disinfection
- Contact time:
  - The time that a disinfectant should be in direct contact with the item that is being disinfected to ensure that the pathogens specified on the label are killed
  - Disinfectants with long contact times (e.g., 10 minutes) may require more than one application

Infection Control Core Elements
Implement Environmental Infection Control Application of Disinfectants and One-Step Cleaners and Disinfectants

- One-step cleaners and disinfectants:
  - Distinct cleaning step may not be required if the item is not grossly soiled
  - Review the label instructions for use; there may be different steps when the product is used as a cleaner versus as a disinfectant

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7 Infection Control Core Elements
Implement Environmental Infection Control Selection of Disinfectant Products

- Refer to the manufacturer's instructions to identify which disinfectants are appropriate
  - Contact the manufacturer if you are not able to locate instructions
- If you are not able to obtain instructions from the manufacturer, obtain input from your Quality Assessment and Assurance Committee to determine if:
  - Equipment should be used for more than one resident
  - Low- versus intermediate-level disinfection is required

7 Infection Control Core Elements
Implement Environmental Infection Control Other Considerations for the Selection of Disinfectant Products

- Kill Claims
- Contact Times
- Safety
- Ease of Use
- Other Factors

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7 Infection Control Core Elements
Implement Environmental Infection Control Onsite High-level Disinfection and Sterilization

- Most nursing homes will not perform onsite high-level disinfection or sterilization of reusable resident care equipment
- If these activities are performed, they should be addressed in policies and procedures, and dedicated space in the facility should be provided
- Additional guidance about high-level disinfection and sterilization can be found in the Centers for Disease Control and Prevention (CDC) https://www.cdc.gov/infectioncontrol/guidelines/disinfection/index.html

7 Infection Control Core Elements
Implement Environmental Infection Control Reprocessing Performed by Consultants

- Consultants, such as podiatrists and dentists, will use equipment that requires high-level disinfection or sterilization
  - Consultants will typically bring a sufficient quantity of equipment for their scheduled appointments without needing onsite reprocessing
  - High-level disinfection or sterilization will then be performed in their office

7 Infection Control Core Elements
Implement Environmental Infection Control Reprocessing Performed by Consultants

- Infection control breaches included:
  - No separation of clean and dirty counter space
  - Contaminated instruments placed in close proximity to sterile instruments

7 Infection Control Core Elements
Implement Environmental Infection Control Reprocessing Performed by Consultants

- Verify that consultants:
  - Have policies and procedures addressing the proper reprocessing of the equipment used during procedures
  - Bring a sufficient supply of equipment to the facility
  - Have sufficient space in the facility to perform procedures and to prevent potential for cross-contamination between clean and dirty equipment
  - Perform proper cleaning and disinfection of environmental surfaces between procedures

7 Infection Control Core Elements
Implement Environmental Infection Control Reprocessing Performed by Consultants

- Verify that consultants:
- Have sufficient space and supplies to clean instruments after use
  - Consultants should clean instruments after use to ensure that blood and body fluids do not dry on the equipment during transport back to their office
  - You should ensure that sink and counterspace provided are appropriate for cleaning and that proper cleaning and disinfection of that space are performed after the consultant has completed all scheduled procedures
- Have a process to appropriately contain and remove contaminated equipment from the facility for transport back to their office

7 Infection Control Core Elements
Implement Environmental Infection Control Providing Staff Education and Competency Assessments

- Staff who use resident care equipment should be educated about proper use
  - Discard single-use equipment immediately after use
  - Proper handling and storage of reusable single-resident equipment.
  - Proper handling of multi-resident equipment:
    - Where to place used equipment
    - How to signal that reprocessing is required

7 Infection Control Core Elements
Implement Environmental Infection Control Providing Staff Education and Competency Assessments

- Staff responsible for reprocessing reusable resident care equipment should be provided with hands-on training, including:
  - Where reprocessing should occur
  - Which PPE is necessary to safely handle and reprocess used equipment
  - How to properly prepare and apply recommended cleaners and disinfectants
  - How and where to store equipment once it is ready for reuse
- Manufacturers may have tools and resources for training staff

7 Infection Control Core Elements
Implement Environmental Infection Control Providing Staff Education and Competency Assessments

- Training should be provided:
  - Upon hire
  - Annually
  - When new equipment is introduced
  - When new policies and procedures are developed
  - In response to deviations from recommended practices

7 Infection Control Core Elements
Implement Environmental Infection Control Providing Staff Education and Competency Assessments

- Verify competency after each training
- Hands-on training and direct observation of practices is particularly important when assessing competency for reprocessing
- Maintain documentation that education and competency assessments were performed

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7 Infection Control Core Elements
Implement Environmental Infection Control Ensuring Availability of Space and Supplies

- Ensure that a sufficient quantity of supplies—including appropriate PPE, recommended cleaners, and EPA-registered disinfectants—and reprocessing instructions are available in areas where reprocessing will be performed

7 Infection Control Core Elements
Implement Environmental Infection Control Ensuring Availability of Space and Supplies

- If reprocessing will not be performed at the point of use or requires the use of a sink, designate space in the facility for reprocessing activities
  - Ensure that the space is sufficient to maintain separation between clean and dirty equipment and tasks
  - The sink used for cleaning should not be used for handwashing or other resident care activities

7 Infection Control Core Elements
Implement Environmental Infection Control Conducting Performance Monitoring and Providing Feedback on Staff Adherence

- Use a standardized assessment tool to conduct performance monitoring
  - Tools should be based on facility procedures and manufacturer's instructions
  - Focus on the most critical steps in the procedure
  - Include assessment of consultant practices
- Provide feedback to staff and the Quality Assessment and Assurance Committee

7 Infection Control Core Elements
Implement Environmental Infection Control Definition of Environmental Surfaces

- "Environmental surfaces" refers to:
  - Surfaces of resident care equipment
  - Housekeeping surfaces, which are divided into two categories:
    - Those with minimal hand contact (e.g., floors and ceilings)
    - Those with frequent hand contact, also known as high-touch surfaces (e.g., doorknobs, bedrails, light switches, and areas around the toilet)

7 Infection Control Core Elements
Implement Environmental Infection Control Prevalence of Pathogens on Environmental Surfaces

Environmental surfaces in the healthcare environment are frequently contaminated with pathogens

STUDY

Prevalence of *Clostridioides difficile* contamination in 6 U.S. healthcare facilities.

***C. difficile* isolated from surfaces in:**

- **100% of rooms housing a patient with *C. difficile.***
- **33% of rooms housing patients who did not have signs or symptoms of *C. difficile* infection.**

All rooms cleaned within 24 hours before sampling.

Clostridioides difficile

STUDY

Prevalence of Methicillin-resistant *Staphylococcus aureus* (MRSA) contamination in 10 nursing homes.

- **MRSA identified on ~1 in 6 surfaces in nursing home common areas.**
- **Surfaces included: handrails, doorknobs, and nurse station counters or carts.**
- **Frequency of contaminated surfaces varied between nursing homes.**

Methicillin-resistant *Staphylococcus aureus* (MRSA)

7 Infection Control Core Elements
Implement Environmental Infection Control Survival of Pathogens on Environmental Surfaces

- Pathogens can survive for long periods of time if proper cleaning and disinfection are not performed

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7 Infection Control Core Elements
Implement Environmental Infection Control Transfer of Pathogens from the Environment to Residents

- Susceptible residents can become infected or colonized with pathogens if they have direct or indirect contact with contaminated surfaces or equipment
- Patients admitted to a room in which the prior occupant was infected or colonized with a pathogen were more likely to acquire that pathogen than patients admitted to rooms in which the prior occupant was not infected or colonized
- Staff hands play a role in the transfer of pathogens from environmental surfaces
- Hand cultures were positive for pathogens after touching surfaces in:
  - 53% of experiments in occupied rooms
  - 24% of experiments in vacant rooms that had been terminally cleaned

Infection Control Core Elements
Implement Environmental Infection Control Need for Improvements in Environmental Cleaning and Disinfection Practices

- Study: 23 hospitals used fluorescent markers to evaluate the thoroughness of terminal room cleaning
- Terminal cleaning: process of cleaning and disinfecting surfaces in a room after a patient has been discharged
- Fluorescent markers:
  - Applied to surfaces before cleaning
  - Presence assessed using special lighting
  - Continued presence after cleaning indicates the surface was not adequately cleaned

7 Infection Control Core Elements
Implement Environmental Infection Control Proper Cleaning and Disinfection of Environmental Surfaces Reduces Risk of Pathogen Transmission

- Efforts to better standardize cleaning and disinfection practices at one hospital
  - Reduce transmission of MRSA and VRE in their intensive care units
  - Eliminated increased risk of acquiring MRSA associated with admission to a room that previously housed an MRSA-positive patient
- Interventions included
  - Use of fluorescent marker to assess adequacy of cleaning practices
  - Changing process for how disinfectant was applied to clean cloths
  - Educating staff on importance of adhering to new process for applying disinfectant

7 Infection Control Core Elements
Implement Environmental Infection Control Definitions of Cleaning and Disinfection

- Environmental surfaces are non-critical and should be cleaned followed by low or intermediate level disinfection

7 Infection Control Core Elements
Implement Environmental Infection Control Definitions of Cleaning and Disinfection

- Cleaning
  - Removal of visible soil from surfaces through physical action of scrubbing with a surfactant or detergent and water
  - Reduces the volume of organisms on a surface and removes foreign material that could interfere with disinfection

7 Infection Control Core Elements
Implement Environmental Infection Control Definitions of Cleaning and Disinfection

- Low-Level Disinfection
  - Destroys all vegetative bacteria (except tubercle bacilli) and most viruses
  - Does not kill bacterial spores
  - Examples of low-level disinfectants include hospital disinfectants registered with the Environmental Protection Agency, or EPA, with a HBV and HIV label claim
  - Low-level disinfection is generally appropriate for most environmental surfaces

Infection Control Core Elements
Implement Environmental Infection Control Definitions of Cleaning and Disinfection

- Intermediate-Level Disinfection
  - Kills a wider range of pathogens than a low-level disinfectant
  - Does not kill bacterial spores
  - EPA-registered hospital disinfectants with a tuberculocidal claim are intermediate-level disinfectants
  - Should be considered for environmental surfaces that are visibly contaminated with blood
    - Low-level disinfectant with a label claim against HBV and HIV could also be used

7 Infection Control Core Elements
Implement Environmental Infection Control Product Selection Considerations

- Decisions about product selection should be made in consultation with environmental services staff
- Select and use disinfectants that are EPA-registered and labeled for use in healthcare settings
  - Typically have "hospital-grade disinfectant" or "hospital disinfectant" on the label

7 Infection Control Core Elements
Implement Environmental Infection Control Other Considerations for the Selection of Disinfectant Products

- Kill Claims
- Contact Times
- Safety
- Ease of Use
- Other Factors

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7 Infection Control Core Elements
Implement Environmental Infection Control Proper Use of Cleaners and Disinfectants

- Follow the instructions for use included in the product labeling
- This is important to ensure the pathogens specified on the label will be killed
  - Is the Disinfectant in a ready-to-use format?
  - Is a cleaning step required prior to application?
  - What is the contact time?
  - Is the disinfectant compatible with the surface upon which it will be used?

7 Infection Control Core Elements
Implement Environmental Infection Control Proper Use of Cleaners and Disinfectants

- Is the disinfectant in a ready-to-use format?
  - Do not mix or dilute unless specified in the label
  - Follow instructions for how frequently fresh solutions should be prepared
    - Dilute solutions can be a reservoir for pathogens
  - Do not “top off” or add new solution to containers of old solution

7 Infection Control Core Elements
Implement Environmental Infection Control Proper Use of Cleaners and Disinfectants

- Is a cleaning step required prior to application?
  - Even if you are using a one-step cleaner and disinfectant, if the surface is grossly soiled, a distinct cleaning step may be required before application of the disinfectant

7 Infection Control Core Elements
Implement Environmental Infection Control Proper Use of Cleaners and Disinfectants

- What is the contact time?
  - How should the disinfectant be applied?
  - How long should it remain in contact with the surface?
  - How many towelettes or how much disinfectant is required for the area you are disinfecting?

7 Infection Control Core Elements
Implement Environmental Infection Control Proper Use of Cleaners and Disinfectants

- Is the disinfectant compatible with the surface upon which it will be used?
  - Ensure staff know which disinfectants are intended to be used on which surfaces and under which circumstances

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7 Infection Control Core Elements
Implement Environmental Infection Control Process for Cleaning and Disinfection

- Lapses that can result in the spread of pathogens in the environment include:
  - Failure to clean and disinfect all surfaces
  - Cleaning and disinfecting surfaces in the wrong order
  - Failure to follow recommended practices for use of cleaning equipment
- Develop a standardized process to ensure that you are cleaning and disinfecting surfaces appropriately

7 Infection Control Core Elements
Implement Environmental Infection Control Developing a Standardized Process for Cleaning and Disinfection

- Always work from the cleanest surfaces to the dirtiest surfaces
- Work from top to bottom
- Consider establishing a consistent process or pattern for cleaning and disinfecting surfaces in the room
- Wipe surfaces in a manner to prevent recontamination

7 Infection Control Core Elements
Implement Environmental Infection Control Using Cleaning Equipment Appropriately

- Microfiber mops and cloths are preferred
  - Change cleaning cloths frequently
  - Change microfiber mop heads after use in each room
  - Environmental services carts should not enter resident rooms, and supplies brought into the room should be limited to the minimum necessary for that space

7 Infection Control Core Elements
Implement Environmental Infection Control Frequency of Cleaning and Disinfection

- Routine cleaning and disinfection for resident rooms:
- High-touch surfaces are those most likely to be touched by residents and staff and therefore pose the highest risk for pathogen transmission
- Examples include bedrails, doorknobs, light switches, call buttons, bedside tables, remote controls and surfaces in the bathroom, particularly those around the toilet
- Horizontal surfaces with infrequent hand contact, like floors and window sills, should be cleaned:
  - On a regular basis (e.g., daily)
  - When spills occur, and
  - If the surfaces become visibly soiled
- Walls, blinds, and window curtains should be cleaned when visibly soiled

7 Infection Control Core Elements
Implement Environmental Infection Control Frequency of Cleaning and Disinfection: Terminal Cleaning of Resident Rooms

- Terminal cleaning of a room is performed when a resident has been discharged or transferred and the room is being prepared for another resident
- All high-touch surfaces should be cleaned and disinfected
- Horizontal surfaces with infrequent hand contact, like floors and window sills, should also be cleaned and disinfected
- All linens, including sheets, towels, and privacy curtains, should be bagged and removed for laundering

7 Infection Control Core Elements
Implement Environmental Infection Control Frequency of Cleaning and Disinfection Procedure and Treatment Areas

- Invasive procedure and treatment areas:
- High-touch surfaces in rooms where invasive procedures are performed should be cleaned and disinfected after each procedure
- Non-invasive procedure and treatment areas:
- High-touch surfaces in other common treatment areas (e.g., therapy gyms) where invasive procedures are not performed should be cleaned and disinfected:
  - When visibly soiled
  - At least daily
  - Immediately after use by residents colonized or infected with highly resistant organisms (e.g., *C. difficile* or carbapenem-resistant Enterobacteriaceae)

7 Infection Control Core Elements
Implement Environmental Infection Control Cleaning and Disinfection of Common Areas

- High-touch surfaces in the facility's common areas (e.g., family room or lounge) should be cleaned and disinfected:
  - When soiled
  - On a regular basis (e.g., daily)

7 Infection Control Core Elements
Implement Environmental Infection Control Cleaning Carpeting

- Harder to keep clean and cannot be reliably disinfected, especially after spills of blood or body fluids
- Recommended practices:
  - Minimize use in high-traffic zones within resident care areas or where spills are likely
  - Vacuum on a regular basis with equipment designed to minimize dust dispersion
  - Periodically deep clean using a method that minimizes production of aerosols and leaves little to no residue
  - Promptly spot clean spills of blood or body fluids

7 Infection Control Core Elements
Implement Environmental Infection Control Cleaning Upholstered Furnishings

- Pose challenges with cleaning and disinfection
- Recommended practices:
  - Minimize use in areas with increased potential for body substance contamination
  - Maintain in good repair; promptly repair tears and holes
  - If furniture in a resident's room requires cleaning to remove visible soil or body substance contamination, promptly move that item to a maintenance area

7 Infection Control Core Elements
Implement Environmental Infection Control Supplies and Space

- Dedicate space to store cleaning and disinfection products and equipment
  - Maintain separation between clean and dirty equipment
- Cleaning and disinfection schedules should include clean and dirty utility areas
- Designate staff to monitor supply levels in these areas and restock, as appropriate

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7 Infection Control Core Elements
Implement Environmental Infection Control Supplies and Space

- Carts commonly used to transport supplies throughout the facility can serve as a source of pathogen transmission if they are not regularly cleaned and disinfected
  - For example, in an outbreak of drug-resistant Enterobacteriaceae at a hospital, the organism was identified on an environmental services cart, suggesting a potential role in transmission
- Carts should not enter resident rooms and should be cleaned and disinfected at least daily

7 Infection Control Core Elements
Implement Environmental Infection Control Performance Monitoring and Feedback

- Performance monitoring and feedback ensure adherence to facility policies and procedures
- Frequency and locations of audits should be informed by your annual IPC risk assessment
  - More frequent monitoring may be performed on higher acuity units or the rooms of residents on Transmission-Based Precautions
- Results of performance monitoring should be documented and shared to reinforce adherence to recommended practices
- Self-assessment checklists and signoff sheets can be helpful reminders but these alone are not sufficient

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7 Infection Control Core Elements
Implement Environmental Infection Control Methods of Performance Monitoring

- Methods for auditing cleaning and disinfection practices vary
  - There are pros and cons to each of these methods
- Facilities could consider implementing more than one approach to performance monitoring

7 Infection Control Core Elements
Implement Environmental Infection Control Visual Assessment

- Visually inspecting the cleanliness of a room after cleaning and disinfection has been performed
- Visual assessment, alone, is not sufficient to ensure that all surfaces have been properly cleaned and disinfected
- Just because a surface appears clean does not mean that it was disinfected

7 Infection Control Core Elements
Implement Environmental Infection Control Direct Observation

- Observe staff practices with the assistance of a checklist
  - Confirm they have prepared and applied cleaners and disinfectants in accordance with facility policies and procedures
  - Confirm they have addressed all required surfaces in the room
- Staff may modify their typical practices if they are aware they are being observed

7 Infection Control Core Elements
Implement Environmental Infection Control Fluorescent Markers

- Apply fluorescent markers before cleaning and assess the markers using special lighting after cleaning
  - If the marker is still present after cleaning, it objectively indicates the surface was not adequately cleaned
- This method would not identify deviations in preparation of cleaning and disinfection products or in how products were applied

7 Infection Control Core Elements
Implement Environmental Infection Control Adenosine Triphosphate Bioluminescence Assay Systems

- Adenosine triphosphate (ATP) bioluminescence assay systems measure residual organic matter, both microbial and non-microbial, that is left on a surface after cleaning
- Provides quantitative results that can be used to track and document improvement in daily cleaning practices
- Method would not identify deviations in preparation and use of cleaning and disinfection products

7 Infection Control Core Elements
Implement Environmental Infection Control Culturing of Surfaces

- Not recommended for routine monitoring of staff adherence
- May be performed in consultation with the health department as part of an outbreak investigation

7 Infection Control Core Elements
Implement Environmental Infection Control Performance Monitoring and Feedback

- Results of monitoring should be documented and shared
- Additional information about options for evaluating environmental cleaning available on CDC website
- https://www.cdc.gov/hai/toolkits/evaluating-environmental-cleaning.html

7 Infection Control Core Elements
Implement Environmental Infection Control Water Use in Healthcare Facilities

- Water is used for a variety of purposes in healthcare facilities
- Examples include:
- Drinking and food preparation
- Environmental cleaning
- Resident care activities:
  - Bathing
  - Toileting
  - Personal hygiene
- Therapy equipment (e.g., hydrotherapy tanks and whirlpools)
- Facility maintenance systems (e.g., cooling towers, hot water heaters, humidifiers)

7 Infection Control Core Elements
Implement Environmental Infection Control Waterborne Pathogens

- Bacteria are found naturally in the environment
- Municipalities treat water with disinfectants to reduce level of pathogens
- Disruptions and inadequate water safety controls within facility water systems can impact water quality and contribute to growth and spread of waterborne pathogens

7 Infection Control Core Elements
Implement Environmental Infection Control Legionnaires' Disease

- Severe form of pneumonia caused by *Legionella*
- Commonly reported cause of waterborne infection outbreaks in nursing homes
- Transmitted by inhalation or aspiration of water containing *Legionella*
- Risk factors for Legionnaires' disease include:
  - Age ≥ 50 years old
  - Chronic lung disease
  - Smoking
  - Impaired immunity

7 Infection Control Core Elements
Implement Environmental Infection Control Legionnaires' Disease Outbreak in a Nursing Home

- Environmental cultures were positive for *Legionella* strains highly related to the clinical isolates from ill residents
  - Closed pipes (dead legs) with no water flow may have contributed to *Legionella* growth in the water system
- Interventions included:
  - Maintaining adequate disinfectant levels
  - Ensuring constant circulation of hot and cold water
  - Additional flushing or removal of dead legs

7 Infection Control Core Elements
Implement Environmental Infection Control Other Waterborne Pathogen Outbreaks

- Multiple waterborne pathogens can cause infections due to water exposure
- https://www.cdc.gov/hai/prevent/environment/water.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fhai%2Fprevent%2Fwater-management.html

7 Infection Control Core Elements
Implement Environmental Infection Control Water Management Program

- Reduces the risk of water serving as a source of infections in healthcare facilities
- Identifies both hazardous conditions and corrective actions that can minimize the growth and spread of waterborne pathogens
- https://www.cdc.gov/legionella/wmp/toolkit/index.html

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7 Infection Control Core Elements
Implement Environmental Infection Control Elements of a Water Management Program

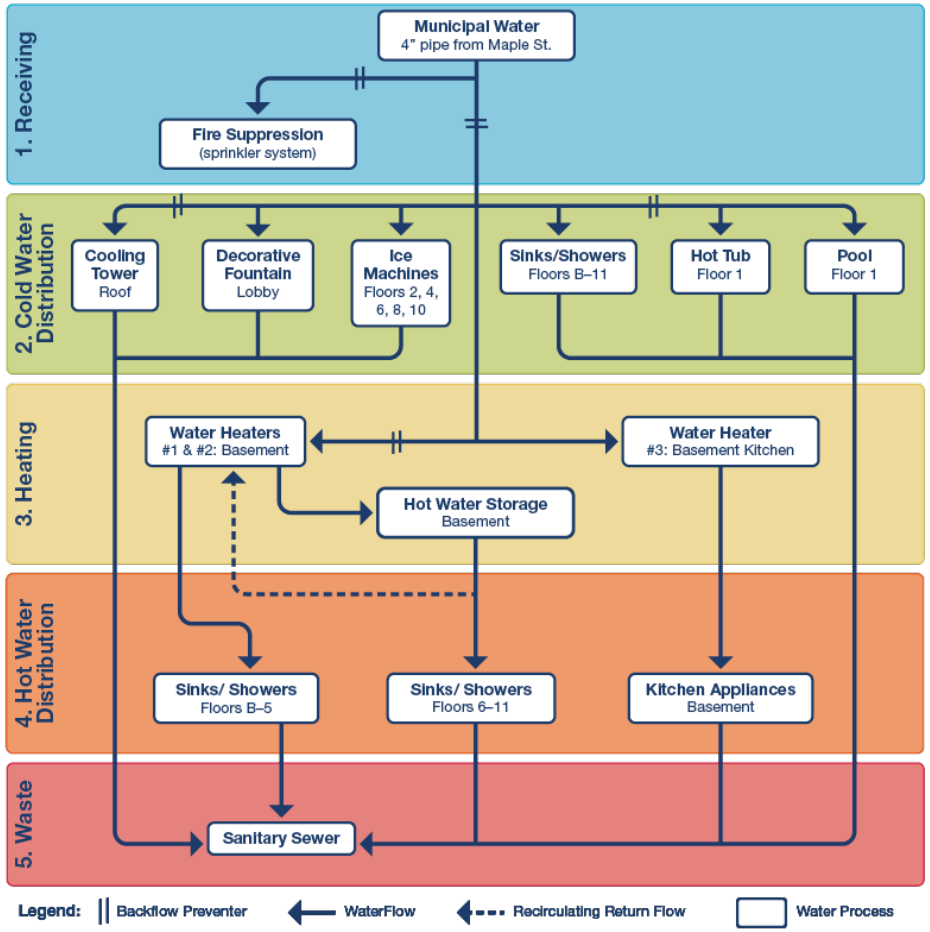
- Establish a water management program team
- Describe the building water systems using text and flow diagrams
- Identify areas where Legionella could grow and spread
- Decide where control measures should be applied and how to monitor them
- Establish ways to intervene when control limits are not met
- Make sure the program is running as designed and is effective
- Document and communicate all the activities
- https://www.cdc.gov/legionella/downloads/toolkit.pdf

7 Infection Control Core Elements
Implement Environmental Infection Control Element 1 – Establish a Water Management Team

- Water management program team
  - Knowledge of the water systems
  - Ability to identify control locations and control limits
  - Ability to identify and take corrective actions
  - Ability to monitor and document program performance
  - Ability to confirm program performance
  - Ability to communicate regularly about the program
  - Ability to oversee the program

7 Infection Control Core Elements

Implement Environmental Infection Control Element 2 – Describe the Building's Water System



- https://www.cdc.gov/legionella/health-depts/environmental-inv-resources.html

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Infection Control Core Elements
Implement Environmental Infection Control Element 3 – Identify Areas Where Legionella Could Grow and Spread

- Identify potential hazards to water quality or areas of vulnerability that could lead to the growth of waterborne pathogens within the plumbing infrastructure
- Age of pipes and reservoirs
- Flow and recirculation of hot water
- Areas of low flow or stagnation
- Disruption to the water system

7 Infection Control Core Elements
Implement Environmental Infection Control Age of Pipes and Reservoirs

- The accumulation of debris, scale, and sediment within pipes or storage tanks can alter the circulating disinfectant levels and allow for biofilm formation

7 Infection Control Core Elements
Implement Environmental Infection Control Flow and Recirculation of Hot Water

- The process of heating water can reduce disinfectant levels
- Recirculating hot water pipes that return water with reduced disinfectant could cool to a temperature where *Legionella* can grow
- Stagnation, when water is allowed to sit in pipes, can result in:
  - Inappropriate temperature
  - Sediment accumulation
  - Biofilm formation

7 Infection Control Core Elements
Implement Environmental Infection Control Areas of Low Flow or Stagnation

- Piping with low or no flow due to design or decreased water use can encourage biofilm growth:
  - Water is not flowing well
  - Failure to maintain adequate temperature or disinfectant levels
- Areas of a building where water is not being used frequently may facilitate pathogen development in the pipes and fixtures

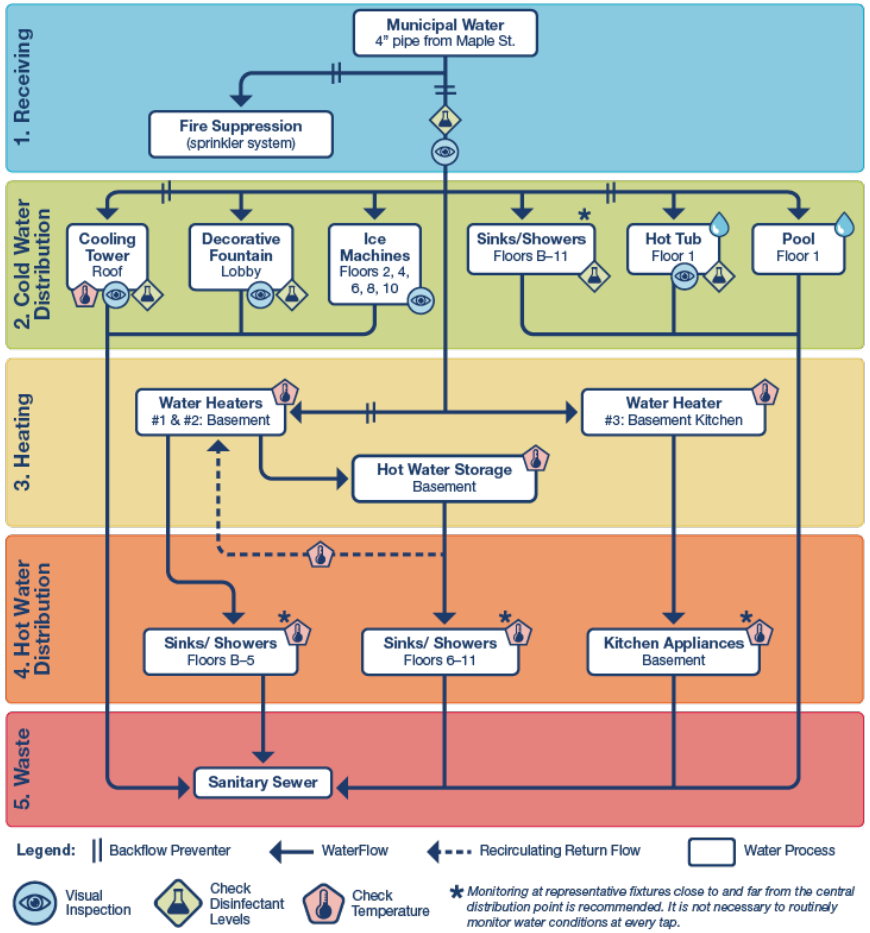
7 Infection Control Core Elements
Implement Environmental Infection Control Disruptions to the Water System

- Construction, renovations, and installation of new equipment can be sources of vibration and changes in water pressure or flow
- Dislodges biofilms and pathogens into the water system
- Occurs in the building or in the municipal water system
- Impacts water quality and safety in the facility

Infection Control Core Elements

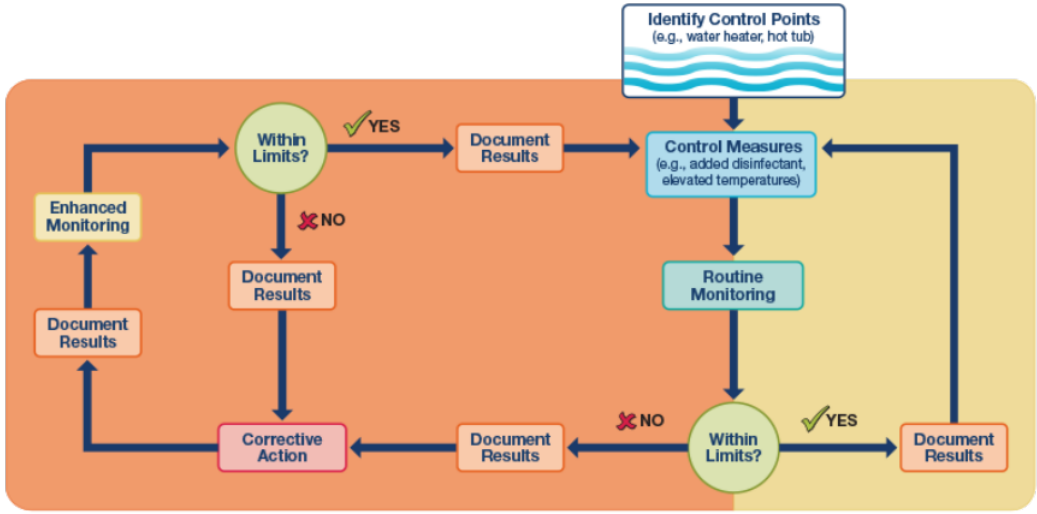
Implement Environmental Infection Control Element 4 – Define Control Measures and Points for Water Monitoring

- Identify the measures you are going to use to monitor water quality and the points within the building's water systems to be monitored. Examples include:
  - Visual inspection
  - Water temperature
  - Disinfectant levels
- https://www.cdc.gov/infectioncontrol/guidelines/environmental/index.html
- https://www.epa.gov/sites/production/files/2016-09/documents/legionella_document_master_september_2016_final.pdf



Infection Control Core Elements
Implement Environmental Infection Control Element 5 – Establish Interventions for When Control Measures Are Not Met

- Establish an action plan to address what happens if control measures are out of range:
  - Who is notified?
  - What is the immediate action?
  - Document the interventions
  - Verify that control measures are back within acceptable limits



7 Infection Control Core Elements
Implement Environmental Infection Control Engage Public Health Partners for Water Quality Concerns

- State and local public health departments can offer support and guidance on how to investigate and address problems in water quality

- Contact the health department to assist in investigating a possible water-related outbreak for the following:
  - A single case of Legionnaires' disease
  - A rise in the rate of infections due to the same waterborne pathogen, such as *Pseudomonas or Acinetobacter*
- Health department can also provide:
  - Guidance for water quality concerns that cannot be resolved by the facility's water management team
  - Information about waterborne infections in the community

7 Infection Control Core Elements
Implement Environmental Infection Control Element 6 – Ensure That the Program Is Effective

- Verification that the water management program is running as designed
  - Ensuring that temperature levels have been checked for each control point (at intervals specified in the water management program)
  - Ensuring that values outside established control limits have prompted the appropriate, pre-determined action

7 Infection Control Core Elements
Implement Environmental Infection Control Element 6 – Ensure That the Program Is Effective

- Validation that the program is effective
  - Environmental testing for hazards
  - Clinical surveillance of infections
- When selecting a validation strategy, your facility should consider the following:
  - Facility and resident population risk factors
  - Available resources
  - Recent experience with Legionella, Pseudomonas, or other waterborne infections (e.g., Legionella infections in the community within last 12 months)
- https://www.cdc.gov/legionella/wmp/healthcare-facilities/water-mgmt-validation.html
- https://www.cdc.gov/infectioncontrol/guidelines/environmental/index.html
- https://www.cdc.gov/legionella/clinicians.html

7 Infection Control Core Elements
Implement Environmental Infection Control Element 7 – Document and Communicate Program Activities

- Review and update documentation related to water management program activities, including:
  - Water systems flow diagram, risk assessment, and control monitoring plan
  - Results of control measure monitoring
  - Detection of and responses to water quality incidents or increases in infections from waterborne pathogens
  - Updates to the water management program and processes for monitoring water quality can be used to educate facility staff

7 Infection Control Core Elements
Implement Environmental Infection Control Additional Strategies to Prevent the Spread of Waterborne Pathogens

- Infection prevention practices to prevent transmission of waterborne pathogens:
  - Avoid splash contamination in medication preparation areas.
  - Eliminate reservoirs of contaminated water within equipment.
  - Clean and disinfect sink bowls and surfaces around the sink.
  - Avoid fountains in resident care areas.
  - Use the type of water appropriate to the medical device or procedure.

Infection Control Core Elements
Implement Environmental Infection Control The Role of Linens in Pathogen Transmission

- Resident linen can become contaminated with pathogens from contact with intact skin or body substances, including blood, stool, vomitus, and other body fluids
- Pathogen transmission can occur through:
  - Direct contact with contaminated linens
  - Aerosols generated from sorting and handling contaminated linens

7 Infection Control Core Elements
Implement Environmental Infection Control Pathogen Transmission Associated with the Handling of Used Linen

- During an outbreak of foodborne *Salmonella* gastroenteritis among nursing home residents, three laundry staff developed infections through the inappropriate handling of linen soiled with feces
  - Gloves were not consistently worn when handling contaminated linen
  - Staff regularly ate their own food in the laundry room

7 Infection Control Core Elements
Implement Environmental Infection Control Pathogen Transmission Associated with Transport and Storage

- Clean linen can also become contaminated with pathogens if they are not appropriately transported and stored
- Outbreak:
  - Five hospital patients developed cutaneous mucormycosis caused by *Rhizopus*, a type of fungus
  - *Rhizopus* was isolated from cultures of clean linens and clean linen delivery bins from the offsite laundry facility

7 Infection Control Core Elements
Implement Environmental Infection Control Breaking the Chain of Infection

- Proper linen management is important to break the chain of infection
- Linen needs to be “hygienically clean,” which is defined as “free of pathogens in sufficient numbers to cause human illness”

7 Infection Control Core Elements
Implement Environmental Infection Control Recommended Practices for Linen Management

- Recommended practices for linen management include:
  - Collection and transport of used linen
  - Sorting and laundering of used linen
  - Transport and storage of clean linen
- If laundry services are provided by an offsite entity, facilities should still have policies and procedures to address:
  - Proper collection and transport of used linen
  - Proper transport and storage of clean linen returned to the facility
- Facilities should also verify that the offsite laundry facility has policies and procedures to launder and transport linen in a way that maintains a hygienically clean state

7 Infection Control Core Elements
Implement Environmental Infection Control Proper Collection and Transport of Used Linen

- The laundry process starts with the removal of used linen from the point of use (e.g., resident room or care area)
- All used linen should be handled using Standard Precautions, including hand hygiene and use of personal protective equipment (PPE)
- Minimize handling of used linen
  - Do not sort or rinse used linen at the point of use
  - Do not shake used linen or hold it close to the body
- Place used linens into designated bags or other appropriate containers at the point of use
  - Single bags of sufficient tensile strength are adequate for containing laundry
  - Leak-resistant containment is needed if laundry is wet and capable of soaking through a cloth bag
  - Securely tie bags or close collection containers to prevent leakage during transport

7 Infection Control Core Elements
Implement Environmental Infection Control Laundry Area

- If laundering is performed onsite, you should ensure that the laundry area is designed to maintain two separate areas
  - A dirty area for receiving and handling used linen
  - A clean area for processing washed items
  - To minimize the potential for recontaminating clean linen with aerosolized contaminated lint, the dirty area should be at negative air pressure relative to the clean area
- Staff should have access to hand hygiene supplies and appropriate PPE
- All laundry equipment should be used and maintained according to the manufacturers' instructions

7 Infection Control Core Elements
Implement Environmental Infection Control Sorting Used Linen

- Sorting of used linen includes removal of any hard objects that are inadvertently mixed in with used linen
- Whenever possible, sorting should be performed before washing
- Facility policy should address when and how sorting is performed
  - Sorting should not be performed at the point of use (e.g., resident room)
  - Gloves used for sorting (e.g., utility gloves) should be of sufficient thickness to minimize sharps injuries

7 Infection Control Core Elements
Implement Environmental Infection Control Sorting Used Linen

- Sorting Before Washing
  - Protects machinery and linen from hard objects
  - Reduces the potential for recontamination of clean linen
  - Allows for customization of laundry process base on mix or linen and types of soil

7 Infection Control Core Elements
Implement Environmental Infection Control Sorting Used Linen

- Sorting After Washing
  - Minimizes staff exposure to pathogens in used linen
  - Reduces airborne microbial contamination in the laundry area

7 Infection Control Core Elements
Implement Environmental Infection Control Laundry Process

- Laundering cycles consist of:
  - Initial flush with water
  - Main wash with cleaning agents and other laundry additives
  - Rinsing with clean water
  - Drying
  - Pressing, as needed
  - Preparation for distribution back to the facility (if offsite) or to the clean storage area

7 Infection Control Core Elements
Implement Environmental Infection Control Laundry Process

- Facilities should follow the fabric-care instructions, laundry detergent labels, and washing machine instructions to prevent damage to laundered items and maintain the detergent's effectiveness
- If hot-water cycles are used, wash with detergent in water ≥160°F for ≥25 minutes
- If low-temperature washing cycles are used, choose chemicals suitable for low-temperature washing at proper use concentration
- https://www.cdc.gov/infectioncontrol/guidelines/environmental/background/laundry.html

7 Infection Control Core Elements
Implement Environmental Infection Control Transporting Clean Linen

- Clean linen must be packaged to prevent contamination during transport or storage. Options include:
  - Placing clean linen in a hamper lined with an unused liner, which is then closed or covered.
  - Placing clean linen in a properly cleaned cart and covering the cart with disposable material or a properly cleaned reusable textile material that can be secured to the cart.
  - Wrapping individual bundles of clean linen in plastic or another suitable material and sealing or taping the bundles.

7 Infection Control Core Elements
Implement Environmental Infection Control Storage of Clean Linen

- Clean linen should be stored in dedicated clean areas in a manner that keeps them dry and free from soil and contamination
- Storage areas (both central and on-unit) should be:
  - Designed to minimize dust contamination
  - Maintained at normal room temperature and humidity ranges
- Using separate rooms, closets, or other designated spaces with a closing door is the most secure way to reduce the risk of environmental contamination

7 Infection Control Core Elements
Implement Environmental Infection Control Incorporating Best Practices Into an Infection Prevention and Control Program

- Developing policies and procedures
- Provide staff education and competency assessments
- Ensure the accessibility of space and supplies
- Conduct performance monitoring and feedback

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8. Establish Reporting within Facility to Public Health

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8 Infection Control Core Elements
Establish Reporting within Facility to Public Health

- All state and local health departments have reporting requirements for certain infections that pose higher potential for spread to the public in general

- Along with reporting specific diseases, there are reporting guidelines for reporting outbreaks that involve multiple residents, usually this is any outbreak which involves greater than 10/% of the residents

ACHCA Checkout Code

kris

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Questions ?

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Our Process

- Prescribed medical record review process that encompasses HHI's core business
- HHI Regional Specialists provide expertise through teaching and training and an extensive chart audit process in order to ensure:
  - MDS Accuracy
  - MDS Supporting Documentation
  - Billing Accuracy
  - Nursing Documentation
  - Therapy Documentation
  - Clinically Appropriate Care

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HHI
Services and Plans

Gold C.A.R.E.S.
2 Year Service Plan

Platinum C.A.R.E.S.
3 Year Service Plan

List of HHI Services

PDPM Training and Audits | Medicare | Compliance | Rehab Program Development | Seminars | MMQ Audits | Mock RAC Audits | Rehab Certification | Mock Health Inspection Survey | MDS Competency | Talent Management | Denials Management | Compliance Certification | Clinically Appropriate Stay | QAPI | QIS | Medicare Part B Program | MDSC Mentor Program | Case Mix Consulting | Professional Development | Leadership Trainings | Regulatory and Survey Assistance | Five Star | PBJ | Quality Measures | Analysis | Staff Training | Infection Control and More!

Silver C.A.R.E.S.
1 Year Service Plan

A La C.A.R.E.S.
Customized Service Plan

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Our Senior HHI Specialists

- Founded in 2001
- Privately owned and operated
- Ranked among Inc. Magazine's top 5,000 fastest growing private companies in America three years in a row
- Active monthly contracts in 24 states
- Over 1,000 Skilled Nursing Facilities serviced
- Over 3,000 Clinicians Certified on the MDS

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https://www.harmony-healthcare.com/harmonyhelp

Live Support Available
8:00 a.m. – 5:00 p.m. EST

HarmonyHelp

With **HarmonyHelp**, Harmony Healthcare International (HHI) provides an invaluable resource for the entire interdisciplinary team. Imagine having questions answered by a HHI Specialist within minutes of the inquiry. Fill out the form on the right to learn more about HarmonyHelp and our various Service Plans.

The **Knowledge Center** is loaded with **information** that will assist with your daily responsibilities at your facility. This self-help site is broken up into **5 Sections:**

Manuals I Tools I C.A.R.E.S. Community I Hot Topics I FAQ (Frequently Asked Questions)

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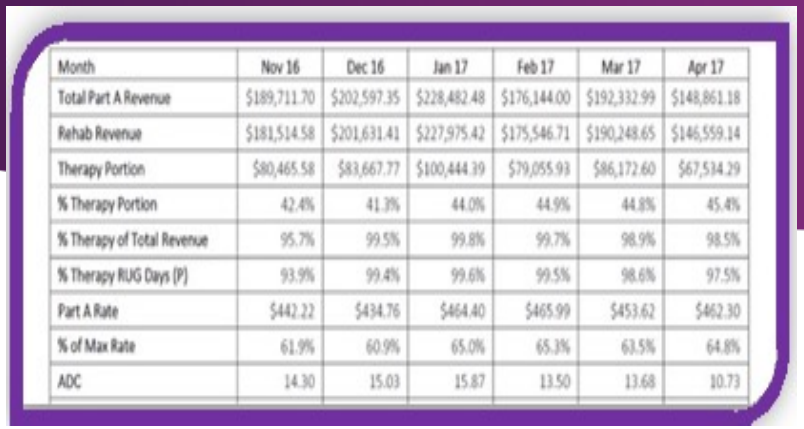
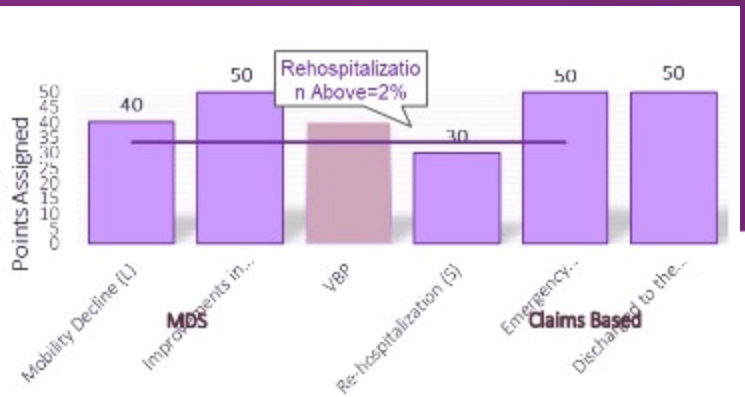
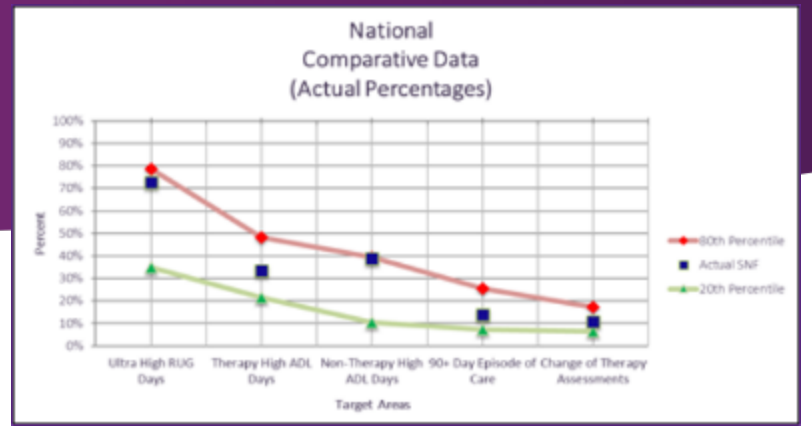


Month	Nov 16	Dec 16	Jan 17	Feb 17	Mar 17	Apr 17
Total Part A Revenue	$189,711.70	$202,597.35	$228,482.48	$176,144.00	$192,332.99	$148,861.18
Rehab Revenue	$181,514.58	$201,631.41	$227,975.42	$175,546.71	$190,248.65	$146,559.14
Therapy Portion	$80,465.58	$83,667.77	$100,444.39	$79,055.93	$86,172.60	$67,534.29
% Therapy Portion	42.4%	41.3%	44.0%	44.9%	44.8%	45.4%
% Therapy of Total Revenue	95.7%	99.5%	99.8%	99.7%	98.9%	98.5%
% Therapy RUG Days (P)	93.9%	99.4%	99.6%	99.5%	98.6%	97.5%
Part A Rate	$442.22	$434.76	$464.40	$465.99	$453.62	$462.30
% of Max Rate	61.9%	60.9%	65.0%	65.3%	63.5%	64.8%
ADC	14.30	15.03	15.87	13.50	13.68	10.73





Complimentary HHI Offerings

- PDPM Revenue and Risk Analysis
- Medicare Part A Revenue and Risk Analysis
- Five-Star Quality Measure Points Analysis
- PEPPER Analysis

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