Infection Control Part 2: Preventing Hospital Acquired Infection (HAI)

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Last Updated: 2013-02-06
Objectives

This presentation is designed to help you:

– Review basic practices that reduce the transmission of, and risk for, hospital acquired infections.
– Define and identify syndromic precautions.
– Identify proper isolation precautions for the in-patient setting.
Hand Hygiene

Sanitizing your hands is the #1 way to decrease transmission of disease.

Always perform hand hygiene:

– Upon entering and upon leaving the patient rooms, or the care areas in those units with “doorless” rooms such as PACU.
– Before retrieving supplies.
– After removing gloves.
– After contact with patient or patient’s environment (curtains, equipment, furniture, etc.).
– After cleaning equipment, rooms, or stretchers.
Hand Hygiene

Gel or foam are acceptable forms of hand hygiene for most patients.

Remember to always wash your hands with soap and water when patients are suspected of having, or are known to have, C-difficile. Gel or foam do not work to protect you or your other patients from this particular microorganism.
Basic Environmental Cleaning Principles

Basic environmental cleaning principles include:

- Clean and disinfect mobile patient care equipment between patients.
- Wear gloves and other PPE as necessary.
- Move from the cleanest area to the dirtiest area.
- Open the wipes fully for use, and change wipes frequently to ensure the surfaces get wet.
- Know the wet time for the product you are using.

Wet time is the actual time the surface stays wet before you place paper, linens, or a body on it.
<table>
<thead>
<tr>
<th>Hospital Surface Disinfectants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Super Sani-Cloth</strong></td>
</tr>
<tr>
<td><strong>Clorox wipes</strong></td>
</tr>
<tr>
<td><strong>Virex</strong></td>
</tr>
<tr>
<td><strong>Cavi Wipes</strong></td>
</tr>
<tr>
<td><strong>Dispatch</strong></td>
</tr>
</tbody>
</table>
Know your cleaning product and how to use it properly!

This patient room shows areas that still have microorganisms (the Xs) present after being cleaned!

It does no good for the patient if you don't clean it right!

Be aware of “high touch” areas like doorknobs, light switches, handles, equipment controls, etc.
For more information, see the policy: “Cleaning, Disinfection, and Storage” on PolicyTech.
Protect Your Patients, Your Family, and Yourself

Standard Precautions are used on all patients to prevent the transmission of bloodborne diseases (HIV, Hepatitis B and C, etc.).

- Use barriers (like gloves, face shields, and gowns) to prevent contact with the patient’s body substances.
- Use respiratory etiquette by covering your sneeze or cough, and sanitizing your hands afterwards.
- Use Syndromic Precautions as described later.
- Use Isolation Precautions as discussed after Syndromic Precautions.
- Get your flu vaccine as soon as it is available (prior to the start of flu season) - you may spread flu before you know you are sick.
Protect your patients, family, and yourself by maintaining a high suspicion for TB. This will aide in early recognition and implementation of either syndromic or isolation precautions.

Classic signs and symptoms of TB are:

- Productive cough greater than 3 weeks
- Coughing up blood
- Unexplained weight loss
- Night sweats
What are Syndromic Precautions?

Syndromic precautions are the steps we take to isolate patients who present with symptoms that may be associated with an infectious process in an outpatient area so that they don’t spread germs to other waiting patients.

Outpatient areas include: ED, Children’s ED, Express Cares, Clinics, PACU, ORs, procedural areas, and Radiology.
## Syndromic Precautions in addition to Standard Precautions

<table>
<thead>
<tr>
<th>Syndrome/Symptom</th>
<th>PPE Required</th>
<th>Patient Transport</th>
<th>Special Cleaning Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gloves</td>
<td>Gown</td>
<td>Mask</td>
</tr>
<tr>
<td>Diarrhea*</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>(Active/non-contained and unknown cause or suspected infectious disease)</td>
<td></td>
<td></td>
<td>Facemask if splashing potential</td>
</tr>
<tr>
<td>Draining Wound (non-contained)</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>*Febrile Rash</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>**N95</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Febrile Respiratory (includes Flu)</td>
<td>☑</td>
<td>☑</td>
<td>**N95</td>
</tr>
<tr>
<td>Meningitis (Suspected *fever, headache, stiff neck)</td>
<td>☑</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Vomiting is not included but Standard Precautions are implemented. If there is an outbreak of norovirus, Infection Control will notify the ED to implemented Syndromic Precautions which will be the same as Diarrhea.

*Febrile = 100.4°F/38°C

*DO NOT USE Clorox wipes on monitor screens.

**N95 if suspected TB or Varicella (Chickenpox) & negative pressure room
Based on the preceding chart:

**If** the patient states that he has had a “rash and high fever of 102 degrees for 3 days”;

**Then** the staff should wear gloves and an N95 mask when caring for the patient, and this patient should wear a mask during transportation.
Syndromic Precautions in the ED

Syndromic precautions in the ED include:

- PPE (mask, gloves, and/or gown) are used, and cleaning procedures are based on the client’s clinical presentation and symptoms.

- Registration places a blue isolation armband on the patient when the patient is flagged with a history of MDRO (Multiple Drug Resistant Organisms) such as MRSA, VRE, or CRE.

- The nurse posts the Stop Sign (next slide) to communicate to all personnel the procedures to be followed in the ED and Pediatric ED settings.

- The nurse marks the boxes on the Stop Sign to direct EVS to clean the room and change the curtains when indicated.
Syndromic Precautions

In Addition to Standard Precautions

Check applicable box(es):

☐ Gloves    ☐ Gown    ☐ Mask    ☐ N-95

☐ Soap & water for hand hygiene (Do not use alcohol)

☐ Patient to wear mask during transport

☐ Bleach wipes

☐ EVS Terminally Clean

☐ EVS Change Curtains

EVS Initials/Date/Time

EVS Initials/Date/Time
A patient with active, uncontained diarrhea would mean that the nurse places check marks on the Stop Sign to direct all staff to wear:

- Gloves;
- Gown;
- Facemask (if potential for splashing);
- Soap and water for hand hygiene;
- Bleach wipes; and
- Change curtains.
Syndromic Precautions in the Express Care and Clinics

Express Cares and outlying clinics are to direct patients through a separate entrance (when possible) based on the patient’s chief complaint, clinical presentation, and symptoms.

Staff should also place the patient in an exam room immediately, away from other patients, and communicate directly with applicable staff members to wear gloves, gown, or mask as needed based on the symptoms.

The policy “Outpatient Settings - Syndromic Precautions” has more and is available on PolicyTech.
Use isolation precautions in all in-patient areas as appropriate:
  - Droplet
  - Airborne
  - Special Airborne
  - Contact
  - Contact Special Enteric
Droplet precautions are used for patients with suspected or confirmed meningitis or influenza.
Airborne precautions are used for patients with confirmed or suspected pulmonary Tuberculosis (TB) infection.

The patient is also placed in a negative pressure room.
Special Airborne/Contact Precautions

Special airborne/contact precautions are required in caring for patients with:

- Chickenpox
- Measles
- SARS
- Smallpox
- Pandemic flu
- Shingles (HIV or immunocompromised)

HEALTH CARE WORKERS MUST WEAR

- N95 Respirator (prior fit test required)
- Gloves
- Gown
- Protective eyewear
  (you must wear goggles for aerosol-generating procedures)

Reminder: HAND HYGIENE must be performed before entering the room and following removal of PPE and leaving the patient’s room.

For questions call the Infection Control Professional.

PRECAUCIONES ESPECIALES CONTACTO ÁEREO

Visitantes tienen que reportarse en la estación de enfermeras antes de entrar a este cuarto.

Antes DeEntrar A Esta Habitación Tiene Que Usar Los Siguientes Artículos De Protección Personal:

- Respirador N95 (es necesaria prueba de ajuste)
- Guantes
- Bata
- Protección para los ojos
  (Tiene que ponerse anteojos protectores para procedimientos con aerosol)

Recordatorio: Tiene que lavarse las mano antes de entrar a este cuarto, al quitarse los artículos de protección personal y al salir del cuarto.

Si tiene preguntas llame al Profesional en Control de Infecciones
Contact precautions are used when patients are positive for multi-drug resistant organisms (MDRO):  
- MRSA  
- VRE  
- ESBL  
- CRE  

Contact precautions are also used if they have open, purulent wounds.
Special Enteric precautions are used for patients with suspected or confirmed c. difficile infection.
Multi-Drug Resistant Organisms (MDROs)

Multi-Drug Resistant Organisms (MDROs) are microorganisms that have developed barriers or resistance to traditional antimicrobial drugs of choice.

Examples of MDROs include:

- **MRSA**: Methicillin-Resistant Staphylococcus aureus
- **VRE**: Vancomycin Resistant Enterococci
- **ESBLs**: Extended spectrum Beta-lactamase producing gram bacilli
- **CRE**: Carbapenem Resistant Enterobacteriaceae

**Clostridium difficile** (c. diff) is technically not an MDRO, but is a significant infectious pathogen and is transmitted similarly.
## MDRO Reference Guide

<table>
<thead>
<tr>
<th>Antimicrobial</th>
<th>Organism</th>
<th>Acronym</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methicillin</td>
<td>Staphylococcus aureus</td>
<td>Methicillin Resistant Staph Aureus</td>
<td>MRSA</td>
</tr>
<tr>
<td>Vancomycin</td>
<td>Enterococcus</td>
<td>Vancomycin Resistant Enterococcus</td>
<td>VRE</td>
</tr>
<tr>
<td>Extended Spectrum Beta-lactamase</td>
<td>Gram negative bacilli</td>
<td>Extended Spectrum Beta-lactamase</td>
<td>ESBL</td>
</tr>
<tr>
<td>Carbapenem</td>
<td>Enterobacteriaceae</td>
<td>Carbapenem Resistant Enterobacteriaceae</td>
<td>CRE</td>
</tr>
</tbody>
</table>
Why wearing a gown and gloves are important

Resistant bacteria on the skin or in the gastrointestinal tract of patients can often be found on common items.

Healthcare workers can contaminate their hands and clothing by touching environmental surfaces near affected patients.
Why wearing a gown and gloves are important

This chart shows the frequency of environmental contamination of surfaces in the rooms of patients with Methicillin-Resistant S. aureus (MRSA) and the percent of the surface that is covered.
As a part of the isolation precautions, make sure you:

- Post the isolation sign immediately.
- Hang the blue isolation station with the proper sign denoting what type of isolation.
- Place a blue isolation armband on the patient if one is not already present.
- Document which type of isolation is in use in your ValleyLink nurse’s assessment.
- Perform patient/visitor education and provide them with an isolation letter regarding the precautions to take for their safety. Document this education in the appropriate teaching records.
**Isolation Station Orders**

Order the Isolation Station in ValleyLink – specifying the type - when isolation is ordered.

“Spare” contact isolation stations will be available in each unit’s clean supply area for immediate use.

Order the isolation station for the individual patient in ValleyLink. When that replacement station is received, place it in the clean utility (to replace the one you already put into service). Don’t forget to discard the patient’s specific order slip in confidential shred bin.

This allows for a contact isolation station to always be available in each unit’s clean supply area for immediate use.
For more information, see the policies below (available on PolicyTech).

- Isolation Precautions
- Standard Precautions, Including Respiratory Etiquette and Safe Injection Practices
Computer Alerts for MDROs

MRSA, VRE, and CRE electronic alerts are used on the computer for patients with prior positive cultures.

- Alerts occur on every in-patient and/or out-patient visit until the patient is cleared by Infection Prevention per our protocol.
- Once clearance has been completed, Infection Prevention and Control removes the alert.
Example of an Alert in ValleyLink Training Environment

When you click on the red exclamation point, the alert appears with the details.
Communication

In order for this bio-hazard symbol to appear in ValleyLink, the nurse must document the Isolation Status.
The Clearing Protocol Form for MRSA and VRE is available on Form Fast (FF0856) and should be printed and placed in the patient’s chart.

No physician signature is required.
Negative Pressure Rooms

Always call maintenance to make sure the negative pressure system is working properly prior to placing a patient in the room.

Know what type of system your unit has to ensure that you know how to tell if it’s working properly.
Negative Pressure Rooms

At Highsmith Rainey Specialty Hospital you need to keep the door to the patient’s room closed for the negative pressure to function. The system indicator showing it is working is pictured here.
Negative Pressure Rooms

In the Valley Pavilion units, you need to use a key to turn the pressure from neutral to negative. An alarm will sound, and a red light will flash when the key is turned to “negative” and the room is not in negative pressure.
Negative Pressure Rooms

In the Adult ED, a ball above the door shows the air direction. If the room is under negative pressure, the ball is not visible in the hallway.
Negative Pressure Rooms

In the Rehab Center (Spinal Cord and Brain Injury Units), turn the control button to “negative”. The indicator on the dial gauge will be on the left side of the zero.
**Negative Pressure Rooms**

All other patient care areas with negative pressure devices at CFVMC have a green light and a negative symbol in front of the number on the readout screen to indicate negative pressure.
Key Points About Personal Protective Equipment (PPE)

Here are the key points about personal protective equipment (PPE):

– Don PPE before contact with the patient, generally before entering the room.
– Use PPE carefully – don't spread the contamination.
– When you are done, remove PPE and discard it carefully either at the doorway or immediately outside patient room – do not carry loose, soiled linens down the hall to the dirty utility.
– Immediately perform hand hygiene.
How to **Safely Use PPE**

Protect yourself too!

- Keep gloved hands away from your face.
- Avoid touching or adjusting other PPE when wearing gloves.
- Remove your gloves if they become torn, and perform hand hygiene before donning new gloves.
- Limit the number of surfaces and items touched.
How to Safely Use PPE

Be aware of “contaminated” and “clean” areas of your PPE.

The areas of your PPE that have or are likely to have been in contact with body sites, materials, or environmental surfaces where the infectious organism may reside should be considered contaminated.
How to Safely Use PPE

Clean areas – the inside, outside back, and the ties on the head and back are areas of your PPE that are not likely to have been in contact with the infectious organism.
Resources on the InfoWeb

If you’re not sure what to do, use the InfoWeb to look up the Isolation Precautions Table to find out if isolation is necessary.
<table>
<thead>
<tr>
<th>INFECTION/CONDITION</th>
<th>TYPE</th>
<th>DURATION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abscess Draining, major</td>
<td>Contact</td>
<td>Duration of illness</td>
<td>No dressing or dressing does not contain drainage adequately</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dressing covers and contains drainage adequately</td>
</tr>
<tr>
<td>Abscess Draining, minor or limited</td>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquired immunodeficiency syndrome (AIDS)</td>
<td>Standard</td>
<td></td>
<td>Post exposure chemoprophylaxis for some blood exposures</td>
</tr>
<tr>
<td>Actinomycosis</td>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adenovirus infection (see agent specific guidelines under gastroenteritis, conjunctivitis, pneumonia)</td>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amebiasis</td>
<td>Standard</td>
<td></td>
<td>Person to person transmission is rare. Transmission in settings for the mentally challenged and in a family group has been reported.</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Adenovirus infection (see agent specific guidelines under gastroenteritis, conjunctivitis, pneumonia)*
Hospital Acquired Infections Can Be Deadly

It is our responsibility to prevent our patients from acquiring an infection while in our care:

- Properly sanitize hands, equipment, and the environment;
- Follow standard precautions, safe injection practices, and respiratory etiquette for every patient and every situation;
- Use syndromic precautions when infectious symptoms are present in outpatient areas;
- Follow isolation precautions for all inpatient settings;
- Wear PPE properly; and
- Use care in removing PPE to avoid contamination.