**What is a Healthcare Associated Infection (HAI)?**
A HAI is an infection a patient acquires while in hospital or other health care facility in whom the infection was not present or incubating at the time of admission. The patient was admitted for another reason (for example: a urinary tract infection or pneumonia).

**How can we Stop HAIs from Occurring?**
Prevention is the key! Routine Practices and Additional Precautions are the fundamental principles of infection prevention and control.

**Routine Practices**
Routine practices are considered the standard of care of all patients in all health care facilities and help reduce the risk of being exposed to blood, body fluids, secretions and excretions of other people. The activities of routine practices include but are not limited to:
- Hand Hygiene
- Environment
- Linen and Waste Management
- Sharps Injury Prevention
- Patient Placement/Accommodation
- Personal Protective Equipment (PPE) – including gown, mask gloves, and eye protection

**Point of Care Risk Assessment (PCRA)**
Prior to every patient interaction, Health Care Workers (HCW) have a responsibility to assess the infectious risk posed to themselves and other patients, visitors and HCW’s by a patient, situation or procedure. The PCRA is an evaluation of the risk factors related to the interaction between the HCW, the patient and the environment to assess and analyze their potential for exposure to infectious agents and identify risks for transmission.
Point of Care Risk Assessment (PCRA)

When to place Patients on Additional Precautions
- Antibiotic Resistant Organism (ARO) or *Clostridium difficile* (CDI) identification (presumptive or final)
- Lab report indicates patient has ARO/CDI
- ARO alert
- Patient advises HCW of ARO
- Unexplained diarrhea
- Meets criteria for additional precautions as per ARO admission screening
- Displays symptoms of influenza like illness (ILI) or respiratory infection (suspect or confirmed)
- Displays symptoms of infectious disease/condition not listed above requiring Additional Precautions as per the Diseases & Conditions table

How are Microorganisms Transmitted?

<table>
<thead>
<tr>
<th>Direct Contact</th>
<th>Transmission occurs when transfer of microorganisms results from direct physical contact between an infected or colonized individual and a susceptible host.</th>
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</thead>
<tbody>
<tr>
<td>Indirect Contact</td>
<td>Involves the passive transfer of microorganisms to a susceptible host via an intermediate object.</td>
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<tr>
<td>Fecal-Oral Transmission</td>
<td>This involves the ingestion of microorganisms from fecally contaminated substances and/or surfaces.</td>
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</table>
**Droplet Transmission**

Refers to large droplets that travel a short distance (≤ 1m) through the air. Droplets do not remain suspended in the air. They are generated from the respiratory tract of an individual during coughing or manipulation of the airway. Lips, mucous membranes, nose and eyes are susceptible.

**Airborne Transmission**

Microorganisms are contained in tiny droplet (remain suspended in air currents for long periods of time). These microorganisms are widely dispersed by air currents.

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**Chain of Transmission**

The chain of transmission is a cycle whereby:

- Contaminated hands transmit microorganisms directly by touching the patient or the patient’s environment →
- Microorganisms are present on the patient’s skin and the patient’s environment →
- Microorganisms are transferred to the HCW’s hands by touching the patient and the patient’s environment. The HCW’s hands are now contaminated →
- Microorganisms survive on HCW’s hands →
- HCW does not clean hands at all or cleans hands inadequately. Hands remain contaminated →
- The cycle repeats

**Admission Screening for ARO’s**

- An admission screening form is an assessment tool that must be completed for every patient. Follow the instructions on the screening form to determine if your patient meets the criteria for screening.
- If screening is required, these specimens may need to be collected:
  - Methicillin Resistant *Staphylococcus Aureus* (MRSA) - swab nose and groin and up to 2 draining wounds
  - Vancomycin Resistant *Enterococcus* (VRE) - swab rectum (must have fecal matter on swab) or send stool sample

**Colonization and Infection**

- **Colonization** – Patient tests positive for microorganism but has no clinical symptoms
- **Infection** – Patient tests positive and exhibits clinical symptoms (ie: fever, elevated white blood cell count, unusual drainage or odour from wound).
- A patient can be infected and/or colonized.

**Common AROs and Communicable Conditions**

<table>
<thead>
<tr>
<th>ARO/Communicable Condition</th>
<th>Details</th>
<th>Screening/Discontinuation of Precautions</th>
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<tbody>
<tr>
<td><strong>Methicillin Resistant Staphylococcus Aureus</strong> (MRSA)</td>
<td>Can cause serious infections in wounds, blood, skin. Commonly found on the skin and/or in the nose of healthy individuals. <strong>Contact precautions are required</strong> (gown &amp; gloves). If a patient has respiratory symptoms, place on droplet precautions as well. Transmission is by direct or indirect contact ie:</td>
<td>Screen weekly commencing 48 hr after antibiotic therapy for is completed. 2 consecutive negative swabs are required no sooner than 1 week apart</td>
</tr>
<tr>
<td>Infection Type</td>
<td>Description</td>
<td>Precaution Steps</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>DIRTY HANDS!</strong></td>
<td>(from all previously swabbed areas) in order to D/C precautions.</td>
<td></td>
</tr>
<tr>
<td><strong>Vancomycin Resistant Enterococci (VRE)</strong></td>
<td>Can cause serious infections in wounds, blood, urine, etc. Enterococci is normal flora in the GI tract, female genital tract, and often in the environment. <strong>Contact precautions are required</strong> (gown &amp; gloves). Transmission is by direct and indirect contact.</td>
<td>Screen weekly commencing 48 hr after antibiotic therapy is completed. 3 consecutive negative swabs are required no sooner than 1 week apart in order to D/C precautions.</td>
</tr>
<tr>
<td><strong>Multi-Drug Resistant Enterobacteriaceae</strong></td>
<td>Includes such organisms: Extended-Spectrum Beta-Lactamase (ESBL), Amp C Beta Lactamase Producing Organisms, Carbapenem Resistant Enterobacteriaceae (CRE/CRO) (CRE-NDM). Group of bacteria (usually E.coli and Klebsiella pneumoniae) <strong>Contact precautions are required</strong> (gown &amp; gloves). Transmitted directly by contaminated hands or indirectly by contaminated objects.</td>
<td>Consult with Infection Prevention &amp; Control.</td>
</tr>
<tr>
<td><strong>Clostridium difficile (CDI)</strong></td>
<td>Causes a variety of symptoms from diarrhea to life threatening intestinal disease. The bacteria can produce a toxin that is responsible for the symptoms seen during an active infection. <strong>Contact precautions are required</strong> (gown &amp; gloves). Transmitted directly by contaminated hands or indirectly by contaminated objects. Hand washing with soap and water only.</td>
<td>Do not send repeat stool specimens. 48 hours of normal stool for that patient are required in order to D/C precautions.</td>
</tr>
<tr>
<td><strong>Herpes Zoster (Shingles)</strong></td>
<td>Inflammation of nerves on dorsal root of spine. Reactivated Varicella Zoster Virus (VZV) (chicken pox). Fluid filled vesicles erupt and release the virus in affected dermatome(s) after 3-5 days.</td>
<td>Precautions can be D/C when all lesions have crusted and dried.</td>
</tr>
</tbody>
</table>
The virus will cause primary varicella (chicken pox) not shingles in susceptible persons.

For localized shingles – contact precautions are required (gown & gloves).

For disseminated shingles (≥2 dermatomes) or immunocompromised – airborne and contact precautions are required (gown, gloves, N95 respirator).

Influenza/Respiratory

Influenza (ILI) signs and symptoms: Acute onset of new cough or change in existing cough plus 1 or more of the following: fever (≥38 C), sore throat, joint pain, muscle aches, severe exhaustion. Respiratory viruses are transmitted via inhaling infected droplets and/or from touching contaminated surfaces with subsequent touching of eyes, nose and/or mouth.

Contact and droplet precautions are required (gown, gloves, mask, eye protection). An N95 is only required if aerosol-generating medical procedures (AGMPs) are being performed.

Precautions can be D/C five days after the onset of symptoms and the patient has been afebrile for 48 hr.

Patient Hand Hygiene

- Teach and assist patients to perform hand hygiene – especially after using the bathroom and before meals.
- Remember to document all provided hand hygiene education.
- If your patient is not ambulatory ensure they have the opportunity to perform hand hygiene by offering a clean wet washcloth, wipe or alcohol based hand rub.

Caring for Patients on Additional Precautions

- The following items should be located inside the additional precaution room: the garbage bin and dedicated equipment (ie: stethoscope, commode, transfer belts, etc.).
- The isolation cart (that holds clean PPE) should be located outside the room, along with appropriate signage displayed on door, and extra supplies/clutter.
- Daily baths with clean clothes or gown/housecoat are required.
- Daily linen changes are required.
- Dedicate patient equipment for all patients when possible.
- Shared equipment MUST be thoroughly cleaned and disinfected between each patient use.

Visitors

- Keep visitors to a minimum if the patient is on additional precautions.
- Explain the reason for precautions.
- Visitors must adhere to the same additional precautions as staff.
- Instruct visitors on donning and doffing of PPE.
- Instruct on proper hand hygiene. Remember to also document this in the patient chart.
Alert Codes
-Appears on Registration (demographic) and/or Emergency Record when printed for the patient chart.
-The code alerts hospital staff to initiate appropriate Additional Precautions.

Infection Control Resources
All resources can be found on CompassionNet.ca

Go to CompassionNet.ca → Care & Safety → Infection Control
http://www.compassionnet.ca/Page172.aspx

Resources include (but are not limited to):
- Policies and procedures (Hand Hygiene, VRE, MRSA, CDI, etc.)
- Hand Hygiene information (including compliance rates per site)
- Outbreak Information
- Routine Practices and Additional Precautions information
- Diseases & Conditions Table
- Microorganism information for staff and patients/families

Please ensure that you are able to access these materials once you obtain computer access. If you are unable to access CompassionNet, please contact your supervisor or manager.

Infection Control Contact Information
Your site Infection Control Practitioners (ICP) can be reached at one of the indicated phone numbers below during business hours. After hours, please leave a voicemail.

<table>
<thead>
<tr>
<th>Site(s)</th>
<th>Phone Number</th>
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<tbody>
<tr>
<td>GNCH</td>
<td>780-735-7308</td>
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<tr>
<td>MCH and VC</td>
<td>780-735-2817</td>
</tr>
</tbody>
</table>

Self Assessment Quiz
Fill in the blanks with T or F.
1. Contact and droplet precautions are needed for a patient colonized with MRSA. True or False ______
2. A patient with disseminated Herpes Zoster requires airborne and contact precautions. True or False ______
3. Visitors do not have to wear any PPE if they are not touching the patient. True or False ______
4. The Infection Prevention & Control website can be found on CompassionNet.ca True or False ______
5. Alcohol-based hand rub is just as effective as soap and water for removing CDI spores. True or False ______
6. Alert codes are a way of notifying a facility that a patient has been previously identified as having an ARO. True or False ______
7. You must send a specimen to test for CDI in order to discontinue additional precautions for a C. difficile patient. True or False ______