

# **AMGH Infection Control Program**

Infection Prevention and Control is primarily for staff and patients of Alexandra Marine and General Hospital. The program also targets health-related workers in the community such as doctor's clinics, and pre-hospital first responders as they relate to the hospital.

The Infection Control Program strives to minimize the risk, prevent and control the transmission of hospital/facility/community-associated infections. Below are some initiatives related to the Infection Prevention and Control Program.

## **PREVENTION** – How to stop the spread of infection.

- Hand Washing
- Cleaning, Disinfection and Sterilization in Health Care Facilities
- Isolation Systems
- Aseptic Technique
- Decrease Risk factors for Infection Transmission
- Immunization

## **PREVENTION**

### **Hand Washing**

- Hand washing is the single most important action that you can take to prevent the spread of infection.
- Alcohol based hand gels and foams are the preferred products for regular hand cleaning in health care settings
- Washing with soap and water is required if hands are visibly soiled.

### **When should soap and water be used?**

- When hands are visibly soiled
- Before eating
- After using the washroom
- Wash your hands for 15 seconds.

### **When should alcohol based hand cleaners be used?**

- If hands are not visibly soiled –
- Before and after direct patient contact
- Before inserting invasive devices
- Before putting on sterile gloves
- After removing gloves
- After contact with objects and equipment in the patient's immediate vicinity
- When moving from a contaminated body site to a clean body site during patient care.
- Use the hand sanitizer for 15 seconds.

## **CLEANING DISINFECTION AND STERILIZATION IN HEALTH CARE FACILITIES**

- The level of disinfection or sterilization is dependent on the intended use of the object: critical (items that contact sterile tissue such as surgical instruments), semi critical (items that contact mucous membrane such as endoscopes) and non-critical (devices that contact only intact skin such as stethoscopes) items require sterilization, high level disinfection and low-level disinfection respectively.

- Cleaning must always precede high-level disinfection and sterilization.

### **ISOLATION SYSTEMS**

- Isolation precautions are an effective way to prevent the transmission of infectious agents in settings where health care is delivered.
  - Contact precautions.  
Used when soiling/contamination of the environment is a concern. Caregivers and visitors will wear gloves and gowns.
  - Droplet precautions.  
Used with infectious patients who are coughing. Caregivers and visitors will wear gloves and gowns as well as masks.
  - Airborne precautions.  
Used with patients who may have an infectious virus such as chicken pox or measles, or bacterium such as Tuberculosis. Caregivers and visitors will wear gloves and gowns and a special facemask that will protect the caregiver or visitor from very tiny germs that can stay afloat in the air for some time. The patient will be in a room where the air moves out of the room through a filtering system in the ceiling vent. This system ensures that the germs are not spread to unprotected caregivers and visitors outside of the patient's room.

### **ASEPTIC TECHNIQUE**

- Sterile or aseptic technique refers to practices designed to render and maintain objects and areas maximally free from germs.
- Aseptic technique involves using barriers, such as gloves, gowns, masks, and drapes, to prevent transferring microorganisms from the environment to the patient during the procedure being performed, using antiseptic agents to minimize the number of microorganisms on the skin of the patient at the time of the procedure, and appropriately cleaning and reprocessing reusable patient care devices.

### **RISK FACTORS FOR THE SPREAD OF INFECTION**

- The risk of health care acquired infection during patient care is related to the mode of transmission of the infectious agent, the type of patient care activity or procedures being performed and the patient's underlying immunity or resistance to infection.
- Some of the patient factors that increase the risk of infection include diseases that lower a person's immunity, cancer, poor diet, age, diabetes, extensive burn wounds or trauma. Additionally, particular medical interventions have been shown to have an influence on the patient's risk of infection: the presence of invasive devices, placement in an intensive care unit, exposure to antibiotics, immunosuppressive therapy, length of hospitalization, and an increased number of health care worker examinations / procedures.

### **IMMUNIZATION**

- Immunization is the most effective means of preventing Hepatitis A and B, influenza, measles, mumps and rubella, polio, pertussis (whooping cough), tetanus (lock jaw)-diphtheria, chicken pox and other vaccine preventable diseases

### **Bugs that can make you sick!**

- Bacteria- Staphylococcus, Streptococcus, MRSA, VRE, Clostridium difficile are examples
- Viruses – Influenza, Hepatitis, Measles, Mumps, HIV are examples

## INFECTIONS

### BACTERIAL INFECTION

#### Staphylococcus s

- Staphylococci are often normal bacterial flora that can be found on our skin.
- They are also common causes of health care associated infections including blood infections, intravenous infections, surgical site infections, skin infections, and ventilator-associated pneumonia.
- Resistance in Staphylococcal appears to be increasing.

#### MRSA

- When Staphylococcus aureus develops resistance to the beta lactam class of antibiotics it is called methicillin resistant staphylococcus aureus, or MRSA.
- Infection occurs when the bacteria gets past the person's normal defenses and cause disease. Infections with MRSA can be minor such as pimples and boils, serious infections may occur such as wound infections and pneumonia.
- MRSA can survive well on hands and can survive for weeks on inanimate objects.

#### Streptococci

- Streptococci are found in the mouth, intestines, bowels, bladder and kidneys.
- When pathogenic they are causes of skin and soft tissue infection, pharyngitis, pneumonia and bacteremia.
- There are over 30 identified species of streptococcus.
- Group A streptococci (GAS) is one of the most frequent and important pathogens in man. Spread of GAS occurs by direct person-to-person contact. GAS infections are associated with infections of the skin, shock, blood infections, and multi-organ failure.

#### Enterococci

- Enterococci are one of over 450 different species of microorganisms that are members of the normal human gastrointestinal flora.
- These organisms are extremely hardy, surviving in a multitude of conditions, including extreme temperatures, acidic and alkaline environments and high salt concentrations.
- Enterococci are intrinsically resistant to many antimicrobial agents and acquired resistance among enterococci are increasing through out the world

#### VRE

- Vancomycin-resistant enterococci (VRE) are strains of enterococci bacteria that have become resistant to high levels of the antibiotic vancomycin. The majority of patients with VRE have no symptoms.
- Risk factors for acquisition include severity of underlying illness, presence of invasive devices, and prior colonization with VRE, antibiotic use and length of hospital stay.
- The increased rates of VRE are problematic due to limited options for disease management and eradication strategies.

#### C Diff.

- Clostridium difficile is a gram positive, spore forming anaerobic bacillus that produces two large toxins, A and B, which cause diarrhea and colitis in susceptible patients whose normal bowel bacterial flora has been previously disrupted by prior antimicrobial treatment.

- High-risk environments include acute care hospitals and long term care facilities in which the use of antimicrobials is high and the environment is heavily contaminated by the spores of *C difficile*.
- Prevention and control can be accomplished by good personnel hand hygiene, gloving and barrier precautions to prevent transmission of the spores to the patient.

## VIRUSES

### Influenza

- The influenza virus causes acute respiratory illnesses, typically occurring each year as winter epidemics.
- Annual vaccination is the primary control strategy for preventing influenza.
- Influenza viruses are spread from person to person primarily through coughing and sneezing (droplet spread).
- Fever is the most conspicuous physical sign of influenza infection. The usual duration of fever is 3 to 4 days. For many individuals systemic symptoms predominate, including feelings of shaking chills, headache, myalgias, malaise, and anorexia. Weakness may occur in more severe cases.
- Two pulmonary (lung) complications of influenza are commonly recognized: primary influenza viral pneumonia and secondary bacterial infection.

### Hepatitis

- There are many different types of Hepatitis. Hepatitis is a viral infection that primarily attacks the liver.
- Vaccines can provide protection against Hepatitis A and B.
- There are no vaccines available to protect against Hepatitis C, D or E.

## MMR

- The Measles, Mumps and Rubella vaccine (live virus vaccine) has greatly reduced MMR infections.

### Rubeola

(Measles) is a highly contagious febrile exanthema.

Morbidity and mortality are still high in non-industrialized nations.

Complications occur in malnourished, pregnant, immuno-compromised and young patients.

### Mumps

is a systemic, commonly self limited, viral infection characterized by swollen salivary glands, high fever and fatigue.

Transmission is by droplet spread of respiratory secretions, through direct contact with infected fluids (primarily saliva or urine).

### Rubella

(German Measles) is a mild infection of children and adults.

The greatest risk is associated with fetal infection (acute clinical manifestations, birth defects, and long term effects)

### HIV

was first reported in the early 1980s. Spread of this virus occurs through contact with blood, body fluids, and other potentially infectious materials.

Treatment with antiretrovirals has improved survival, but resistance to treatment has been increasingly recognized, there is no cure.  
There is no effective vaccine available.