Methicillin-Resistant *Staphylococcus aureus* in the Community (CA-MRSA)

DEFINITION

- *Staphylococcus aureus* resistant to all of the beta-lactam classes of antibiotics (such as penicillins, penicillinase-resistant penicillins (e.g., cloxacillin) and cephalosporins).
- Community associated or CA-MRSA refers to strains linked to colonization and transmission in the community.

EPIDEMIOLOGY

- CA-MRSA detection is growing globally.
- Higher risk populations vary geographically and include: young adults, children <2 years, athletes in contact sports, those with chronic dermatological conditions, those living in congregate or overcrowded conditions or of lower socioeconomic status, injection drug users, patients with recent or recurrent antibiotic use, aboriginals, men who have sex with men, military personnel, and residents of correctional facilities.
- CA-MRSA may still occur in persons with no apparent risk factors.
- In some areas of the United States, the majority of skin and soft tissue S. *aureus* infections are CA-MRSA.
- The epidemiology and management of MRSA in the community may evolve quickly. This was the case in parts of the United States. Close monitoring of the local epidemiology, if available, is important.

TRANSMISSION AND VIRULENCE

- Transmission occurs through direct contact between persons or through contact with contaminated objects or surfaces.
- Some CA-MRSA strains produce toxins associated with more severe systemic and local disease, however the aetiology of MRSA's increased virulence in the community remains an ongoing debate.

DIAGNOSIS AND TREATMENT (SEE ALGORITHM)

Mild and Moderate Disease Presentation

- Minor skin and soft tissue infections (SSTIs) (folliculitis, furuncles, small abscesses without cellulitis) do not need to be routinely cultured for MRSA.
- Cornerstones of CA-MRSA management are incision and drainage of purulent lesions and proper follow-up wound care.

Canada

- Systemic antibiotic treatment IS NOT recommended for minor SSTIs or small abscesses (<5 cm) without cellulitis except in young infants and the immuno-compromised.
- Systemic antibiotic treatment is recommended for small abscesses with cellulitis and for larger abscesses (see algorithm for choice of antibiotics).

Severe or Unusual Disease Presentation

- Extensive cellulitis or multiple abscesses with associated systemic features.
- Necrotizing pneumonia, often with an influenza-like prodrome leading to shock or respiratory failure.
- Endocarditis
- Other presentations of MRSA may include osteomyelitis, pyomyositis, necrotizing fasciitis, septic thrombophlebitis, and sepsis syndrome.
- Treat in consultation with physician with infectious disease expertise.

PREVENTION OF MRSA TRANSMISSION

- Requires consistent application and reinforcement of good hygienic practices and judicious use of antibiotics.
- If skin lesions are present instruct the patient to:
  - Cover lesions to contain drainage or exudates
  - Not share personal products that are in contact with the skin; for example: deodorant, razors, toothbrushes, towels, nail files, combs and brushes
  - Not share unwashed towels
  - Discard contaminated waste, including used dressings, in a safe and timely manner (e.g., into a garbage pail lined with a plastic bag, so the bag can be removed and tied without re-contaminating hands)
  - Wash hands with soap and water or use alcohol-based hand rub after touching any skin lesions and potentially infected materials, such as soiled dressings
- After the patient leaves the examining room, immediately wipe all surfaces and patient care equipment (blood pressure cuff, stethoscope, etc.) that have been in contact with the patient, with an approved hospital grade disinfectant such as a quaternary ammonium or hydrogen peroxide solution.
  - Hospital grade disinfectant wipes with approved hospital grade disinfectants in easy dispense containers are also available

SCREENING AND DECOLONIZATION

- Routine screening for colonization of nares or other sites is NOT recommended.
- Decolonization should be considered only in exceptional circumstances, such as recurrent infections and transmission within a family. This should be done in consultation with an infectious disease specialist.

Adapted from: Fact Sheet: Methicillin-Resistant *Staphylococcus aureus* in the Community (CA-MRSA), Provincial Infectious Disease Advisory Committee (PIDAC), January 2011.