
**Standards for Prevention and Management of
Methicillin-Resistant *Staphylococcus aureus***

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Reader Information

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Contact	<p>Alberta Health and Wellness 22nd floor 10025 Jasper Avenue Edmonton AB T5J 2N3 Phone: 780-427-7164 Fax: 780-427-1171 E-mail: health.ahinform@gov.ab.ca</p> <p>Provincial Methicillin-Resistant <i>Staphylococcus aureus</i> (MRSA) Infection Prevention and Control Guidelines can be found on the Alberta Health and Wellness website: http://www.health.alberta.ca/public/MRSA-Guidelines_August-2007.pdf</p> <p>Document can be found on the Alberta Health and Wellness website: www.health.alberta.ca</p>
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1. Definitions

Acute care setting	A health care facility or setting where lengths of stay average less than 30 days, and where a variety of services are provided, which may include surgery and intensive care. ⁴
Additional precautions	Practices used to prevent transmission of infectious agents that are spread by direct or indirect contact with the client or client's environment that are necessary in addition to Routine Practices for certain pathogens or clinical presentations. These precautions include Contact Precautions, Droplet Precautions, and Airborne Precautions that are based on the method of transmission. ¹
Benchmark	A point of reference from which measurements may be made. ² Benchmarks may be internally or externally derived.
Chief medical officer of health (CMOH)	The chief medical officer of health appointed under the <i>Public Health Act</i> .
Client	Any person receiving health care services within any health care setting. ³ This document uses the term "client" to represent client / patient / resident.
Client care equipment	Any instrument, apparatus, appliance, material, or other article, whether used alone or in combination intended by a manufacturer to be used for human beings. ³
Colonization	Occurs when bacteria are present on or in the body without causing illness. ⁴
Contact precautions	A type of Additional Precautions used in addition to Routine Practices to prevent transmission of infectious agents that are spread by direct or indirect contact with the client or client's environment. Contact Precautions also apply where the presence of uncontained wound drainage, fecal incontinence, or other discharges from the body suggest an increased potential transmission risk of pathogens by this route. ⁴ The full description of Contact Precautions can be found in Health Canada (1999) <i>Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare</i> . Supplement Infection Control Guidelines. Volume 25S4.

Decolonization	Refers to topical and/or systemic antimicrobial treatment administered for the purpose of eradicating MRSA carriage from the skin, nose and other mucosal surfaces. ⁴
Epidemic	A distribution of cases of communicable disease that is unusual in terms of time, place or persons affected ⁵ or an increase in frequency of disease above the background occurrence of the disease. ⁶
Hand hygiene	Refers to the process of removing or reducing the number of microorganisms on hand surfaces with soap and water or through the use of waterless antiseptic hand rubs. ⁴
Health care facility or setting	A facility or setting in which clients receive health care services including but not restricted to public hospitals and surgical facilities, nursing homes, extended care facilities, long term care facilities, clinics, medical and dental offices, and health units in industry. ⁷
Infection	The entry and multiplication of an infectious agent in the tissues of the host a) inapparent (asymptomatic, subclinical) infection: an infectious process running a course similar to that of clinical disease but below the threshold of clinical symptoms b) apparent (symptomatic, clinical) infection; one resulting in clinical signs and symptoms (disease). ¹
Infection prevention and control (IPC)	Evidence-based practices and procedures that, when applied consistently in health care settings, can prevent or reduce the risk of transmission of microorganisms to health care personnel, clients and visitors. ⁸
Medical officer of health (MOH)	A physician appointed by a regional health authority or designated by the Minister under the <i>Public Health Act</i> as a medical officer of health. ¹¹
Medical transport	Out of hospital acute care transport to definitive care, provided to patients with illnesses and injuries. ⁹ Transport can also include moving clients to or from a health care facility or setting, between health care facilities or settings, or clients being discharged from hospital but unable to use conventional means of transportation. ¹⁰

**Methicillin-Resistant
Staphylococcus aureus
(MRSA)**

Staphylococcus aureus is a bacteria that may commonly live on the skin or in the noses of healthy people. MRSA is the term for *Staphylococcus aureus* that have become resistant to semi-synthetic penicillins such as Cloxacillin and Methicillin.

Staphylococcus aureus isolates that carry the *mecA* gene, or that produce PBP 2a (the *mecA* gene product), should be reported as oxacillin/methicillin resistant. If MIC tests are performed, isolates with an oxacillin MIC $\geq 4\mu\text{g/ml}$ are resistant to oxacillin/methicillin.⁴ Minimum inhibitory concentration (MIC) is the minimum concentration required to inhibit visible growth of the organism in vitro.

Nuisance

A condition that is or might become injurious or dangerous to the public health or that might hinder in any manner the prevention or suppression of disease.¹¹

Outbreak

See Epidemic

Organization

The owner, operator and other person responsible for the management of a health care facility or setting.

Precautions

Interventions implemented to reduce the risk of transmission of microorganisms.⁴

Risk Assessment

Risk of transmission of microorganisms between patients involves factors related to the microbe, the source patient, the patient care environment and the potential receiving host. Recommendations regarding the precautions required to prevent transmission of microorganisms within the health care environment are based on knowledge of mechanisms for and risk of their spread. The likelihood of transmission between clients and the outcome of such transmission to the client, health care facility or setting and the community are considered.¹

Routine Practices

Defined by Health Canada, Routine Practices form the foundation for limiting the transmission of microorganisms in all health care settings and is the generally accepted care for all clients. Elements of Routine Practices are: hand hygiene; risk assessment related to client symptoms, care and service delivery, including screening for infectious diseases; risk reduction strategies through the use of personal protective equipment (PPE), cleaning of

***Routine
Practices...continued***

environment, laundry, disinfection and sterilization of equipment, waste management, safe sharps handling, client placement and healthy workplace practices; and education of healthcare providers, clients and families, and visitors.^{12, 1}

Screening

The presumptive identification of unrecognized disease or defect by the application of tests or procedures. Screening tests sort out well persons who probably have disease or defect from those that probably do not.¹³

Transport Personnel

Emergency medical personnel, who perform medical acts during client transfer.¹²

2. Introduction

The goal of these standards is to minimize the risk of exposure to and prevent transmission of Methicillin-Resistant *Staphylococcus aureus* (MRSA) to clients and staff. These standards set minimum requirements regarding the management of clients infected or colonized with MRSA for all health care facilities and settings. Higher standards may be required based on specific circumstances.

These standards are based on current information and will evolve as evidence and technology changes. *Provincial MRSA Infection Prevention and Control (IPC) Guidelines* released in August 2007 complement the standards. They can be found at the Alberta Health and Wellness website: http://www.health.alberta.ca/public/MRSA-Guidelines_August-2007.pdf. It is the responsibility of organizations to ensure current infection prevention and control (IPC) practices are in place.

3. Assessment of Risk

- 3.1 Organizations shall ensure that all clients have a MRSA IPC risk assessment performed in accordance with the *Provincial MRSA IPC Guidelines* (Section 3).

4. Decreasing Risk of Transmission

- 4.1. All organizations shall comply with the Health Canada (1999) *Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare*. Supplement Infection Control Guidelines. Volume 25S4.
- 4.2. Contact Precautions shall be used in addition to Routine Practices for clients with known or suspected MRSA colonization or infection in acute care settings.
- 4.3. Health care settings shall ensure their IPC protocols align with provincial IPC guidelines and standards.
- 4.4. Client placement must be determined using the risk assessment in accordance with the *Provincial MRSA IPC Guidelines* (Section 4).

5. Medical Transport

- 5.1. Equipment used in the transferring or testing of the client, client contact surfaces, and equipment touched by personnel within the vehicle shall be cleaned prior to being used for the next client in accordance with the *Provincial MRSA IPC Guidelines* (Sections 4 and 5).

- 5.2. A health care facility or setting transferring an individual with MRSA colonization or infection shall notify the receiving health care facility or setting and the transport personnel of the client's MRSA status prior to transfer.

6. Surveillance

- 6.1. Organizations shall conduct MRSA surveillance as directed by Alberta Health and Wellness.
- 6.2. Organizations shall use surveillance data to identify outbreaks, set benchmarks and evaluate the effectiveness of IPC efforts.
- 6.3. Organizations shall report MRSA data as directed by Alberta Health and Wellness.

7. Screening

- 7.1 All organizations shall have and apply a documented MRSA screening protocol that:
 - 7.1.1 Meets minimum requirements as defined in the *Provincial MRSA IPC Guidelines* (Section 7).
 - 7.1.2 Provides a management plan for clients suspected or confirmed to be colonized or infected with MRSA.
- 7.2 Any variation in the screening protocol shall be directed by the regional medical officer of health, in consultation with the chief medical officer of health.

8. Outbreaks

8.1. Any person who knows or has reason to suspect the existence of MRSA:

- in epidemic form;
- occurring at an unusually high rate; or
- that is caused by a nuisance or other threat to public health,

shall immediately notify the regional medical officer of health by the fastest means possible.¹¹

9. Decolonization

- 9.1. Any decision to attempt decolonization on a client shall be made by the client's physician.
- 9.2. The regional medical officer of health may provide advice and direction on decolonization.

10. Disclosure

- 10.1. The organization shall have a disclosure policy to advise the MRSA colonized or infected client (or the client's guardian) of their MRSA status, follow up testing and care, and measures to prevent transmission.

11. References

- ¹ Health Canada. (1999). Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care. Canada Communicable Disease Report. Supplement Infection Control Guidelines. Volume 25S4.
- ² Merriam Webster Online Dictionary. <http://www.m-w.com/dictionary/benchmark>
- ³ Ontario Provincial Infectious Diseases Advisory Committee. (PIDAC). (2006). Best Practices for Cleaning, Disinfection and Sterilization in All Health Care Settings.
- ⁴ Alberta Health and Wellness. (2007). Provincial Methicillin Resistant *Staphylococcus Aureus* (MRSA) Infection Prevention and Control Guidelines. Public Health Division. http://www.health.alberta.ca/public/MRSA-Guidelines_August-2007.pdf
- ⁵ Alberta Government. (2006). Communicable Disease Regulation. Alberta Regulation 238/85. Public Health Act. http://www.qp.gov.ab.ca/documents/Regs/1985_238.cfm?frm_isbn=0779744640
- ⁶ Alberta Health and Wellness. (2005). Notifiable Disease Report. 2nd Edition. Page 5
- ⁷ Operating Room Nurses Association of Canada (ORNAC). (2006). Recommended Standards, Guidelines and Position Statements for Peri-operative Nursing Practice.
- ⁸ BC Provincial Infection Control Network. (PICNet). (2007). An Assessment of Infection Control Activities Across the Province of British Columbia: Part Two: Framework for Staffing and Core Competencies Training Designed for Infection Control Programs. Final Draft.
- ⁹ Wikipedia. http://en.wikipedia.org/wiki/Emergency_medical_services
- ¹⁰ Toronto EMS Non-emergency patient transfer services. http://www.toronto.ca/ems/operations/non_emergency.htm
- ¹¹ Province of Alberta. (2004). Public Health Act. Published by the Alberta Queen's Printer.
- ¹² Canadian Committee on Antibiotic Resistance (CCAR). (2007). Infection Prevention and Control Best Practices for Long Term Care, Home and Community Care including Health Care Offices and Ambulatory Clinics. www.ccar-ccra.org
- ¹³ Last JM. (2001). A Dictionary of Epidemiology. 4th Edition. Oxford: Oxford University Press. Morabia A. Editor. (2004).