

# Use of Surgical Masks in the Operating Room: A Review

### Context

Surgical site infections — infections occurring in a wound created by an invasive surgical procedure — account for a significant proportion of health care-associated infections. While many cause no additional complications, surgical site infections can be associated with considerable morbidity — they may be at least partly responsible for more than one third of postoperative deaths.

### Technology

In the operating room, there are procedures and practices in place to reduce the probability of infectious material transfer between operating room staff and patients. Surgical face masks provide a physical barrier between bacteria from the oropharynx or nasopharynx and an open patient wound.

### Issue

The wearing of surgical face masks in the operating room is one of many long-standing practices, yet controversy exists as to whether it actually reduces the frequency of surgical site infections. Additionally, although they may protect operating room staff from infectious bodily fluid splashes from patients, general purpose disposable surgical face masks are not specifically designed to protect the wearer from airborne infectious particulates. A review of clinical effectiveness and evidence-based guidelines for mask use in the operating room will help to inform decisions on how to minimize the occurrence of surgical site infections and operating room staff infections.

### Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

### Key Messages

- No evidence was found to support the use of surgical face masks to reduce the frequency of surgical site infections.
- No evidence was found on the effectiveness of wearing surgical face masks to protect staff from infectious material in the operating room.
- Guidelines recommend the use of surgical face masks by staff in the operating room to protect both operating room staff and patients (despite the lack of evidence).

### Results

The literature search identified 124 citations, with 4 additional articles identified from other sources. After screening the abstracts, 34 were deemed potentially relevant and 4 met the criteria for inclusion in this review — 2 systematic reviews and 2 guidelines.

*DISCLAIMER: The information in this Report in Brief is intended to help health care decision-makers, patients, health care professionals, health systems leaders, and policy-makers make well-informed decisions and thereby improve the quality of health care services. The information in this Report in Brief should not be used as a substitute for the application of clinical judgment in respect of the care of a particular patient or other professional judgment in any decision-making process nor is it intended to replace professional medical advice. While CADTH has taken care in the preparation of the Report in Brief to ensure that its contents are accurate, complete, and up-to-date, CADTH does not make any guarantee to that effect. CADTH is not responsible for any errors or omissions or injury, loss, or damage arising from or as a result of the use (or misuse) of any information contained in or implied by the information in this Report in Brief.*

*CADTH takes sole responsibility for the final form and content of this Report in Brief. The statements, conclusions, and views expressed herein do not necessarily represent the view of Health Canada or any provincial or territorial government. Production of this Report in Brief is made possible through a financial contribution from Health Canada.*