Patients are being exposed to, and acquire infection, as a result of contact with pathogens in the healthcare setting. The overall prevalence of healthcare associated infections (HAIs) in Canada is 11.6%, one of the highest in the developed world, with direct costs estimated to be $1 billion annually.¹,² One in nine patients acquire an HAI, which results in some 220,000 HAIs annually and 8,500-12,000 deaths.³ Infections are the fourth leading cause of death in Canada.³.

Transmission of HAIs to patients occurs most frequently via the transiently contaminated hands or gloves of healthcare workers (HCWs).⁴ According to Health Canada, the CDC and the WHO, hand hygiene is the undisputed single most effective infection control measure in prevention of HAIs. Good hand hygiene may reduce the number of patients acquiring HAIs by up to 30%.⁵.

It is important to understand when hand hygiene should be practiced. A 2011 study published in Infection Control and Hospital Epidemiology observed that the rate of HCWs practicing hand hygiene when exam gloves were worn was worse than when exam gloves were not worn. The chances of hands being cleaned before or after patient contact appear to be substantially lower if gloves were being worn.⁶

These findings reinforce the need to continue educating on the importance of hand hygiene and when it should be practiced:

- BEFORE touching a patient
- BEFORE clean/aseptic procedures
- AFTER a body fluid exposure risk
- AFTER touching a patient
- AFTER touching a patient's surroundings⁶.
Medical gloves are an important personal protective device and should be worn during all patient care activities that may involve exposure to blood and other bodily fluids, including contact with mucus membranes and non-intact skin. Medical gloves serve many purposes, including to reduce the risk of:

- Contamination of HCWs hands with blood and other body fluids
- Pathogen dissemination to the environment
- Transmission from the HCW to the patient and vice versa, as well as from one patient to another

Gloves should always be changed or removed:
- AFTER contact with blood or body fluids
- BEFORE seeing a new patient
- BETWEEN clean and contaminated sites on the same patient

Do not wash and reuse gloves since this practice has been associated with transmission of pathogens.7.

Unfortunately, glove misuse is regularly present in healthcare facilities, and medical staff often fail to follow gloving best practices, thus facilitating the spread of microorganisms. Studies have demonstrated that HCWs acquire microorganisms on gloved hands when touching contaminated surfaces, which could result in transmission to patients. Bacterial contamination of unused disposable gloves from recently open boxes has also been demonstrated. The unwashed contaminated hand of the HCW reaching into glove boxes has been identified as the source.8.

New innovations are being explored to make medical gloves safer, reducing the risk of surface contamination and ease of use for HCWs. A new breed of gloves is being equipped with antibacterial coating on its external surface that reduces the risk of bacterial cross-contamination following glove contact with patients and surfaces by HCWs.

A research article published in Antimicrobial Resistance and Infection Control 2013, demonstrated that an antibacterial examination glove coated on its outside surface with polyhexanide (PHMB), was able to reduce cross-contamination by > 4 log₁₀, compared to a control non-coated examination glove. The results are encouraging and bolster further clinical investigation on the impact of an antibacterial examination glove.9.

The science of this antimicrobial technology is both theoretically and practically sound and has the potential to prevent microbial transmission in conjunction with good hand hygiene.
References


* Some of the authors listed above are employees of Ansell.