

## Hand hygiene: Two hundred years after Semmelweis we still have work to do

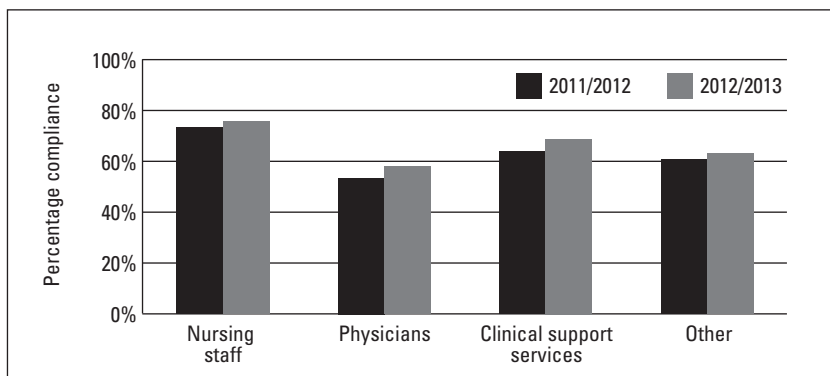
In the mid-1800s, Dr Ignaz Semmelweis recognized that pregnant women who delivered in the care of physicians and residents had more infections than those cared for by midwives.<sup>1</sup> He also recognized that doctors often went directly to the delivery suite from the autopsy rooms. Against great opposition, he initiated a hand-washing policy for the physicians and residents before they attended deliveries. Infection rates plummeted, but the doctors were skeptical, and Semmelweis was eventually forced from his position. Hand washing stopped, and rates of infection climbed. It was another 50 years before the importance of hand cleaning in the prevention of infections in health care was recognized.

Prior to 2010, BC health authorities had developed a wide variety of hand hygiene programs with varied standards and requirements. In 2010, the Provincial Hand Hygiene Working Group was formed to develop and implement a provincial hand-hygiene program. The group has undertaken a number of initiatives including the following:

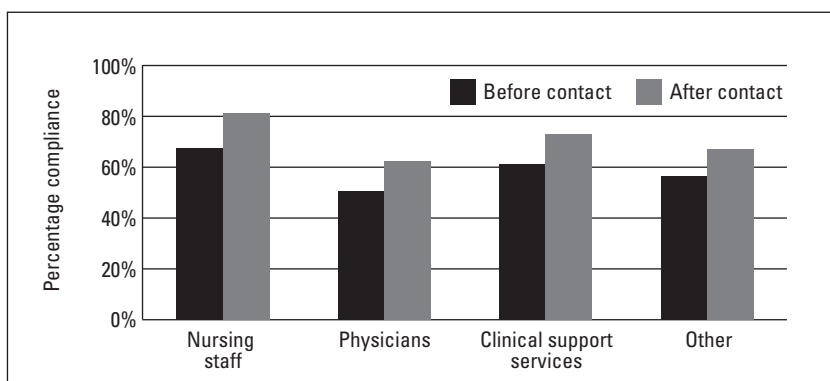
- Auditing of hand-cleaning compliance.
- Surveying health care workers to capture perceptions of hand hygiene strategies and compliance.
- Developing education modules and best practice guidelines.

All of these initiatives were focused on health care workers in health authorities, but are just as relevant for physicians in community practice. Since April 2011, quarterly audit data

*This article is the opinion of the BC Centre for Disease Control and has not been peer reviewed by the BCMJ Editorial Board.*



**Figure 1.** Hand-hygiene compliance by health care workers, 2011/2012 compared with 2012/2013.



**Figure 2.** Hand-cleaning compliance by health care workers before and after contact with a patient or a patient's immediate environment.

for hand-cleaning compliance in BC acute care facilities has been posted publicly on the Provincial Infection Control Network website ([www.picnet.ca](http://www.picnet.ca)). The latest data show that there have been statistically significant improvements in hand hygiene over the past 2 years, but also that physicians lag behind other health care workers in cleaning hands and physicians are more likely to clean their hands after patient contact than before contact with patients (**Figures 1 and 2**).<sup>2</sup>

In 2012 and again in 2013, two surveys were conducted in health author-

ities, exploring health care workers' perceptions of hand hygiene. A total of 13 422 health care workers participated in 2012, and 10 200 in 2013. Physician participation in both surveys was limited, with only 266 (2%) physician responses in 2012, and 213 (2%) in 2013. The **Table** summarizes the comments from physicians about obstacles to hand hygiene and suggestions for better compliance, which were similar to comments heard from other health care workers.

Health authorities are responding to these results by improving infra-

**Physicians lag behind other health care workers in cleaning hands and physicians are more likely to clean their hands after patient contact than before contact with patients.**

**Table. Obstacles to hand-hygiene compliance and suggestions for the future.**

	Obstacles to hand-hygiene compliance	Physicians' suggestions
Environmental factors	<ul style="list-style-type: none"> <li>• Placement of sinks and alcohol dispensers away from working area.</li> <li>• Shortage of alcohol dispensers.</li> <li>• Empty and broken dispensers.</li> <li>• Unclean sinks and dispensers.</li> <li>• Overcrowded hand-cleaning stations.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase availability of hand-washing stations and cleaning materials.</li> <li>• More automatic faucets, soap dispensers, and towel dispensers.</li> <li>• Moisturizer in the location of cleaning stations and dispensers.</li> <li>• Maintain constant vigilance that cleaning agents are readily available.</li> <li>• Strict enforcement on cleaning of sinks.</li> </ul>
Individual factors and beliefs	<ul style="list-style-type: none"> <li>• Unsure when to wash hands.</li> <li>• Patients may be offended if I clean my hands after a handshake.</li> <li>• Giving up old habit of not washing hands is not easy.</li> <li>• Hands become chapped, crack, and dry after frequent washing.</li> <li>• Others are not doing it.</li> <li>• Wearing gloves eliminates the need to wash hands.</li> <li>• Not convinced that hand hygiene is necessary in all circumstances.</li> <li>• Lack of evidence as to whether hand hygiene reduces infection rates.</li> </ul>	<ul style="list-style-type: none"> <li>• More hand-hygiene education focused on physicians.</li> <li>• Make promotional materials more relevant and practical.</li> <li>• Publicly remind physicians to clean their hands.</li> <li>• Prizes to encourage hand-hygiene compliance.</li> </ul>

structure to support hand hygiene, including adding more point-of-care dispensers and accessible sinks. However, the more formidable challenge is changing individual perceptions and ingrained habits. As an integral part in the health care system, physicians have an opportunity to show commitment to patient safety by embracing hand cleaning both before and after contact with a patient or a patient's immediate environment. This approach is simple and effective—Semmelweis would approve.

With a new cohort of residents in hospitals, clinics, and other care settings, now is the time to model appropriate hand-hygiene behavior for the next generation. Cleaning hands protects both health care workers and

patients. You can visit [www.picnet.ca](http://www.picnet.ca) for more information on how to make hand hygiene an integral part of your health care practice.

—**Elizabeth Bryce, MD, FRCPC**  
—**Bonnie Henry, MD, MPH**  
**BC Provincial Hand Hygiene Working Group**

**References**

1. Best M, Neuhauser D. Ignaz Semmelweis and the birth of infection control. *Qual Saf Health Care* 2004;13:233-234.
2. Provincial Infection Control of British Columbia (PICNet). Annual report on hand cleaning compliance within BC acute care facilities (Fiscal Year 2012/2013). Accessed 22 July 2031. [www.picnet.ca/surveillance-research/104/hand-hygiene-compliance](http://www.picnet.ca/surveillance-research/104/hand-hygiene-compliance).

The BC Medical Association thanks the following advertisers for their support of this issue of the *BCMJ*.

BC Association of  
Clinical Counsellors ..... 344

Cambie Surgery Centre/  
Specialist Referral Clinic ..... 341

Canadian Society of  
Addiction Medicine ..... 343

Carter Auto ..... 347

CBT.CA ..... 324

Crisis & Trauma  
Resource Institute Inc. .... 340

Haughton Art ..... 314

Interior Health ..... 353

MD Physician Services ..... 356

Mercedes-Benz ..... 350

Pacific Centre for  
Reproductive Medicine ..... 313

Pollock Clinics ..... 315, 323

Prohealth ..... 312

Sea Courses ..... 337

Speakeasy Solutions ..... 352

Surrey MRI ..... 342

Vancouver Bullion &  
Currency Exchange ..... 345

Vancouver Coastal Health ..... 349

