Semmelweis revisited: the ethics of infection prevention among health care workers

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Healers sometimes transmit disease as well as cure it. It is more than a century and a half since Ignaz Semmelweis found that physicians with unwashed hands were infecting their obstetric patients with puerperal fever. In a study of influenza vaccination in long-term care facilities across Canada, Colin Stevenson and associates[1] raise this issue again, in another context (see page 1413). They found mean vaccination rates of 82.5% among the residents of the facilities, but only 34.9% among the staff. Furthermore, they found that facilities with higher staff vaccination rates reported lower rates of influenza outbreaks. Issues concerning contagious physicians have been discussed in these pages before. A notable example was the commentary[2] on Health Canada's recommendations in 1998 that called for mandatory hepatitis B vaccination, screening and, for those found to be infected, the forced suspension of privileges to perform "exposure-prone" procedures. Much of that discussion centred on what should be done when a physician is already infectious.[2] But to what extent are physicians ethically obligated to take personal actions to prevent becoming infected in the first place?

In some ways it sounds absurd: Do we have a specific obligation as physicians to avoid getting sick? Although few actually seek illness, most health care workers accept that, by caring for the sick, they may place themselves at increased risk of infectious diseases, from the common cold to HIV infection. For some infections, a higher level of risk for health care workers is well documented, hepatitis B being a good example.[3] Compliance with many infection control measures (e.g., sterilization of equipment) has become the standard of practice. However, some critical aspects require personal actions: for example, handwashing, vaccination, tuberculin skin testing and use of universal precautions. Most of these interventions are noninvasive, and all are extremely low risk. Yet, paradoxically, given their level of exposure, physicians are notoriously noncompliant with personal preventive manoeuvres.[4–7] Unfortunately, it is often only when compliance with programs such as tuberculosis screening is required for employment that health care providers take these infection control efforts seriously.[8] Barriers to compliance are common: patient rooms without sinks for handwashing, and understaffed employee health and infection control programs for tuberculin skin testing, for example. And although there is good evidence supporting many infection control interventions, research and development in this field remain inadequate. Nevertheless, we are still accountable for our own actions, and the example we set for our students and staff.

Every fall, in every health care facility in Canada, there is an influenza vaccination campaign. The vaccine's effectiveness in preventing morbidity and death from influenza is well proven.[9] The National Advisory Committee on Immunization recommends that all health care workers receive influenza vaccination to reduce the likelihood of transmission to high-risk patients and to reduce time off work that might compromise the provision of essential health care services. Yet vaccination rates among physicians and other health care providers remain low.[10,11] There are many potential reasons for this: busy schedules, lost time (and perhaps income) while getting the vaccination, procrastination, lack of knowledge about influenza severity or vaccine efficacy, perception of low-risk status, the bother of a sore arm. Even healthy young adults routinely fall ill and lose time from work because of influenza. In a trial of influenza vaccination among healthy, working adults, Nichol and colleagues[12] found that the nonvaccinated control group had a total of 140 episodes (974 days) of upper respiratory illness per 100 subjects over the influenza season and 122 days off work per 100 subjects; the vaccinated group had 25% fewer episodes of upper respiratory illness and 43% fewer days off work. More disconcertingly, a smaller study involving hospital-based health care workers, mainly medical residents, found that nonvaccinated staff had 40.6 days of influenza-like illness per 100 subjects but only 21 days off work per 100 subjects during the influenza season.[13] These physicians — probably like many of us — went to work ill, and presumably contagious, to provide care for high-risk hospital patients. But influenza is a highly infectious disease with significant morbidity and mortality. Particularly given the work ethic of most physicians, our own susceptibility matters, even in the context of good vaccination rates among our high-risk patients.

"First do no harm" is a fundamental principle of medical practice: physicians have a duty not to place their patients

at undue risk of infection. This duty is most obvious and immediate when a physician is actually infected with a transmissible disease and poses a significant risk for his or her patients. However, the ethical obligation also extends to the less immediate, sometimes mundane sphere of infection control and personal prevention of infection. Physicians have an obligation to their patients (if not themselves) to take all reasonable actions to prevent transmission in the context of patient care.

What then could possibly justify refusal (or neglect) to get an influenza vaccination? Lack of knowledge might be a real reason, but it is hardly legitimate justification. Any burdens imposed for the good of others must be balanced against personal freedom, privacy and dignity. For some infectious diseases, such as hepatitis B, the demands of infection control may impose a significant restriction on privacy and personal freedom, sometimes extending to the person's ability to work and earn a livelihood as a physician. Thus, these ethical principles have been invoked against mandatory hepatitis B screening (although most opponents support voluntary screening and changes in practice for chronic carriers). On occasion, health care workers have argued that requiring influenza vaccination also infringes on their personal freedom; a court case involving ambulance workers is currently pending in Ontario. However, for influenza vaccination, any infringement on personal freedom, privacy, dignity or loss of income is minimal compared to the benefits of reduced rates of influenza among patients, many of whom are at high risk of complications. As it is for the vast majority of infection control interventions, the benefits greatly outweigh the risks, from both an individual and a societal perspective. If there is a burden involved for health care workers to accept vaccination, it can be eased by providing free vaccine, compensation for vaccine-related adverse effects and efficient vaccination campaigns requiring little time or effort on the part of the health care workers. Other than a medical contraindication, perhaps only conscientious objection suffices as an overriding principle for practising physicians to refuse influenza vaccination.

As Harris and Holm[14] wrote of society in general: "There seems to be a strong prima facie obligation not to harm others by making them ill where this is avoidable." But there is a special duty of care for us as physicians not simply to avoid transmission once infected, but to avoid infection in the first place whenever reasonable. Our patients come to us specifically for help in staying or getting well. We have not just the general obligation of any member of our community, but a particular trust: *first* do no harm.

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