Simply put, there has to be a “first”—an innovator, a pioneer, a trailblazer. The practice of infection control and prevention has been affected by many important firsts aimed at reducing healthcare-associated infections in patients and healthcare workers (HCWs). The introduction by Ignaz Semmelweis in 19th century Vienna of hand hygiene as an infection prevention strategy was a seminal event that serves as the foundation of all other infection control strategies. The first utilization of a bundle of practices, including the use of the now well-known “central line checklist” to prevent central line-associated bloodstream infections, can be traced to efforts at Johns Hopkins Hospital and the Pittsburgh Regional Healthcare Initiative. In this issue of the journal, Rakita et al from Virginia Mason Medical Center (VMMC) in Seattle, Washington, describe another important first in the field of infection control and prevention—the first implementation of a requirement for HCWs to receive an annual influenza vaccination as a condition of their employment. This forthright and novel decision by VMMC leaders and vaccination program champions to emphatically emphasize the importance of influenza vaccination of HCWs has opened the door to a new approach to increasing patient safety as well as HCW protection.

For over 2 decades, HCWs have been recommended as specific targets for influenza vaccination because of their close interactions with persons at high risk for influenza-related complications. HCWs can serve as vectors for healthcare-associated influenza, may shed the influenza virus before the onset of symptoms, and may not present with classic influenza-like illness, thereby leading HCWs to believe that their respiratory symptoms are not due to influenza infection. Before the 2009–2010 influenza season, despite increased awareness of the importance of influenza vaccination of HCWs and large-scale, resource-intensive vaccination campaigns at most healthcare facilities, vaccination rates remained at approximately 45%. Last year, probably because of increased concern regarding the emerging novel H1N1 influenza A pandemic and the early availability of seasonal influenza vaccine, nearly 62% of HCWs reported receiving the seasonal influenza vaccine. Whether this substantial increase in uptake of the seasonal vaccine heralds a sustained increase or is merely an isolated event remains to be seen.

Healthcare facility vaccination programs for HCWs traditionally employ a myriad of strategies and invest extensive resources with the aim of improving HCW vaccination coverage in order to protect patients, HCWs, and other close contacts. Unfortunately, very few healthcare facilities have reported HCW influenza vaccination rates above 70%, even with the use of multifaceted, intensive programs. Despite having an HCW influenza vaccination rate above the national average, in 2004, VMMC vaccination program managers and facility leaders were dissatisfied with HCW compliance with what they believed was an important and effective intervention to improve the safety of their patients. This is when VMMC made an important and innovative first step toward a new model for HCW influenza vaccination programs.

As described by Rakita et al, most of the VMMC HCW influenza vaccination program did not differ dramatically from other multifaceted vaccination programs at other healthcare institutions. Vaccine was provided free of charge in conjunction with a highly visible publicity campaign that included trained advocates (or “champions”), incentives, and kickoff events. HCWs could receive vaccine via a mobile cart or from peer vaccinators, including during nights and weekends. But the VMMC program also had some rather innovative aspects. The most substantial was the requirement that all persons working at VMMC were required to receive an annual influenza vaccination, with only medical and religious exemptions allowed. Importantly, the VMMC program encompassed all persons who worked at the medical center, not just those under direct employment. Several studies have documented the variabili-
ty among healthcare facilities in terms of which HCWs are specifically targeted and included in influenza vaccination programs.6,7 Groups of HCWs who may have direct patient care but are not directly employed by a facility, such as affiliated physicians, students, and volunteers, may not be included in vaccination programs. VMMC leaders argued that, to be a fair and just policy, such persons must be included in this comprehensive patient safety program. Even those persons without direct patient care as part of their duties were included, because of their potential for spreading a contagious respiratory pathogen to coworkers who did have such contact with patients. The VMMC leaders also put their “money where their mouth was,” offering free allergy testing for those with reported egg allergies and reimbursing HCWs for the costs of influenza vaccination received from a non-VMMC provider.

The impact of their program was impressive. HCW influenza vaccination rates reached 97% in the program’s first year and have been sustained above 98% for the past 4 influenza seasons. Quite simply, the requirement for HCW to receive an annual influenza vaccine has become a basic reality of working at VMMC, ingrained in the larger culture of a high-quality healthcare institution. Seven employees left VMMC during the program’s first year; only 2 left in the following 4 seasons.

The impact of the mandatory program on other outcomes was difficult to establish. Rakita et al8 did not report an assessment of healthcare-associated influenza before and after program implementation; this may not be surprising, because detailed prospective surveillance of this outcome occurs infrequently at most healthcare institutions.7 VMMC staff satisfaction improved after the institution of the new vaccination requirements; however, one cannot directly attribute this increase to the mandate given the many factors that can affect employee satisfaction. Importantly, it is encouraging nonetheless that staff satisfaction did not decline after implementation of the program. Rakita et al8 also examined whether the new program affected employee sick leave. Overall employee sick leave in January and February did not decline significantly after the introduction of the program. The measurement of overall sick leave in this analysis was a crude metric that was affected by many factors. An analysis using the actual time of peak influenza activity in the region may have provided a more accurate assessment of sick leave due to influenza. During the 5 influenza seasons following the implementation of the influenza vaccination program at VMMC, peak influenza activity occurred in January or February during most years. However, the peak of influenza activity in region 10 (which includes the states of Washington, Oregon, Idaho, and Alaska) occurred in mid-March during the 2008–2009 season and in September during last year’s early second wave of novel H1N1 influenza A.9 Examining sick leave data from January and February of each year may have underestimated any impact of the mandatory influenza vaccination program on employee absenteeism.

With VMMC leading the way, an increasing number of healthcare facilities and health systems have implemented programs in which HCW influenza vaccination is a condition of employment (Figure 1). In 2008, BJC Healthcare, a system of 11 acute care and 3 extended care facilities around St. Louis, Missouri, increased their HCW influenza vaccination coverage from 71% before the implementation of the mandate to 98.4% in the first season after the mandate. Nearly 26,000 BJC Healthcare employees were vaccinated, and 8 were terminated.10 This past season, several more healthcare facilities started mandatory vaccination programs. The Hospital
Corporation of America required influenza vaccination for all of its nearly 140,000 employees in over 160 healthcare facilities throughout the United States. Their HCW influenza vaccination rate last year was 96.4%. The MedStar Health system of 9 facilities in Maryland and the District of Columbia achieved an influenza vaccination rate of 98% of their approximately 26,000 employees and affiliated HCWs (including a 95% vaccination rate among affiliated physicians) after implementing a mandatory vaccination program (L. V. Kuranfil [corporate coordinator, infection control, MedStar Health], personal communication; by e-mail, March 16, 2010). In 2009, the state of New York became the first state to require influenza vaccination of HCWs, although vaccine shortages and confusion regarding the novel H1N1 vaccine led to a suspension of this regulation. Increasingly, healthcare institutions have moved to mandatory influenza vaccination programs or are strongly considering implementing such programs for the upcoming 2010–2011 influenza season. Arguably, many of these organizations would not have taken this step if they had not had the successful example of VMMC to emulate.

Innovators also face new challenges. In VMMC’s case, these primarily arose from grievances raised by the Washington State Nurses Association (WSNA). WSNA noted that implementing a new requirement for employment at VMMC required negotiation as part of their collective bargaining agreement, which had not occurred. In a later WSNA challenge against the VMMC requirement for nonvaccinated HCWs to wear masks while at work, the court ruled that such an intervention was allowed as part of VMMC infection control policies. It is important to note that the major impetus for the challenge was not driven by an “antivaccine” stance, which the WSNA injunction has occasionally been described as. The fact that 96% of VMMC’s unionized nurses received an influenza vaccine last year reinforces the notion that the WSNA’s concerns were not a referendum against influenza vaccination of HCWs.

As with most intensive programs that must engage a large number of individuals, the VMMC vaccination program was resource intensive, including costs spent challenging the WSNA litigation. Clearly, senior leadership as well as financial and personnel support are essential for a successful mandatory vaccination program. Many healthcare facilities already utilize extensive resources to encourage, convince, cajole, and beg their HCWs to receive an annual influenza vaccination. One must question whether some of the costs associated with implementing a mandatory program are already being utilized with less impact in voluntary vaccination programs. Importantly, as the expectation for influenza vaccination became hardened as part of the VMMC’s larger culture of safety, the process became more efficient and less resource intensive.

Although the discussions surrounding mandatory HCW influenza vaccination that were first prompted by the VMMC are rather new, this debate strikingly mirrors past debates about childhood vaccination programs. Despite extensive and expensive efforts, voluntary programs aimed at increasing the rate of childhood vaccination resulted in a plateau of coverage at approximately 65%, a percentage that was inadequate to prevent continued circulation of the targeted pathogens. The decision to require vaccination for day care and school entry was made, which finally led to the high rates of vaccination coverage noted today in the United States.

With the growing interest in implementing similar programs, the HCW influenza vaccination program, after years of extensive efforts that resulted in only a modest increase in coverage, now may follow the effective course taken by childhood vaccination programs and school entry requirements. Low HCW influenza vaccination rates can no longer be tolerated, because our patients and our coworkers are at risk. Combining a mandatory HCW influenza vaccination policy with a multifaceted infection control program—which includes early identification of infected patients, source control, use of isolation precautions and personal protective equipment, restriction of ill HCWs and visitors, and other environmental controls—can reduce transmission of influenza in healthcare settings and represents a new model of influenza infection control. For effectively implementing a mandatory HCW influenza vaccination program, we can applaud the role that VMMC has played in pioneering another important infection control “first.”

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Address reprint requests to Thomas R. Talbot, MD MPH, Vanderbilt University Medical Center, A-2200 Medical Center North, 1161 21st Avenue South, Nashville, TN 37232 (tom.talbot@vanderbilt.edu).

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