Letter to the Editor

Impact of expanded influenza post-exposure prophylaxis on healthcare worker absenteeism at a tertiary care center during the 2017–2018 season

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To the Editor—Healthcare workers (HCWs) are at risk of being exposed to influenza during routine patient care.1 Consequently, HCW vaccination is advised to reduce influenza-related morbidity and absenteeism.2,3 However, influenza vaccine effectiveness varies from season to season depending on the level of vaccine matching with circulating influenza strains.

During 2017–2018, there was an expected predominance of influenza H3N2, a subtype associated with lower vaccine effectiveness. We hypothesized that a surge in influenza cases paired with decreased vaccine effectiveness could increase HCW absenteeism and impact delivery of care. Historically, we offered oseltamivir postexposure prophylaxis (PEP) only to unvaccinated exposed HCWs, but during the 2017–2018 season, we expanded PEP to all exposed HCWs regardless of their vaccination status. We report our experience describing PEP uptake, cost, and impact on HCW absenteeism at the University of Iowa Hospitals & Clinics (UIHC) during 2 influenza seasons (2016–2017 and 2017–2018).

The UIHC is an 811-bed tertiary-care hospital that serves as a referral and safety-net health system for eastern Iowa. During the 2016–2017 season, PEP (75 mg/day for 7 days) was offered free of charge to unvaccinated exposed HCWs. We defined exposure as proximity within 3 feet of a laboratory-confirmed influenza-infected person for ≥10 minutes without mask protection, or direct contact with respiratory secretions. Prophylaxis was not recommended if >48 h had elapsed since the exposure. During the 2017–2018 season, PEP was expanded to all exposed HCWs regardless of vaccination status. Other hospital infection control policies did not change over the study period: (1) Universal surgical mask use was advised for HCWs with direct patient contact in hematology-oncology units during respiratory virus season. (2) Oseltamivir prophylaxis was recommended to all patients and HCWs in units with nosocomial transmission of influenza (ie, ≥2 new cases of influenza in inpatients 72 hours or more after admission). Influenza immunization status was recorded in a secure, on-line employee health portal (ReadySet, Axion Health, Westminster, CO). Influenza testing was performed by polymerase chain reaction during both seasons.

The study population was staff nursing and clinical technicians who worked at UIHC in both adult and pediatric units (inpatient and outpatient). We reviewed surveillance, employee health, pharmacy, and human resources records for the 2016–2017 and 2017–2018 seasons. “Influenza season” was defined as October 1 through March 31. For HCWs with multiple exposures, only exposure events that occurred >7 days apart were included. The primary outcome was the rate of absenteeism, expressed as all-cause sick leave in hours divided by the total scheduled work hours. We excluded absences <1 hour. We defined PEP uptake as prescriptions picked up divided by the number of HCWs who were referred. Oseltamivir prophylaxis prescribed because of nosocomial transmission was not considered PEP. Analyses were conducted in Stata version 15 software (StataCorp, College Station, TX).

During the 2016–2017 and 2017–2018 seasons, we identified 373 and 427 laboratory-confirmed influenza cases, respectively. The proportion of HCWs who received the influenza vaccine was similar for both seasons (89.7% vs 90.8%). PEP was recommended for 15 exposed HCWs in 2016–2017 and 280 in 2017–2018, and 5 (33.3%) and 133 (47.5%) HCWs picked up oseltamivir from the pharmacy, respectively. Oseltamivir cost an average of $81.41 per PEP course. The total estimated cost of oseltamivir was $407 in 2016–2017 and $10,828 in 2017–2018.

The proportion of HCWs who received PEP during the 2016 season was 48.2% and in the 2017 season was 48.3%. Absenteeism rates were similar in both seasons (3.2% vs 3.4%, respectively). During the 2017–2018 influenza season, our recommendation of providing PEP to all HCWs exposed to an influenza-infected case had no apparent impact on overall absentee rates or the duration of sick leave. Currently, oseltamivir prophylaxis is aimed at preventing influenza infection in unvaccinated or high-risk populations or to prevent secondary transmission in long-term care facilities in the context of an outbreak.4,5 We could not demonstrate that expanding oseltamivir PEP to all exposed HCWs was associated with a decrease in absenteeism, but this is a

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single-center experience in a setting with high HCW vaccination rates. However, both 2016–2017 and 2017–2018 influenza seasons were similar in Iowa, with a predominance of A (H3N2) influenza viruses and an overall vaccine effectiveness of only 40%. Absenteeism rates may have been similar due to HCWs presenting to work regardless of symptoms (ie, presenteeism). Expanded PEP may have been effective in those who took oseltamivir, but we could not analyze absenteeism stratified by PEP uptake. Expanding oseltamivir prophylaxis indications needs to be carefully assessed because it could contribute to the development of oseltamivir-resistant strains.9

In conclusion, we were unable to demonstrate reduced absenteeism by providing oseltamivir PEP to all exposed HCWs regardless of their vaccination status. Larger prospective studies may clarify the role of expanded PEP, especially during seasons with low vaccination effectiveness. Other preparedness strategies might be needed to achieve the right balance of minimizing sick leave by preventing HCW influenza acquisition while also minimizing presenteeism.

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