Toward a Standardized Definition of Healthcare-Associated Influenza?

To the Editor—We read with interest the article by Taylor et al1 regarding healthcare-associated influenza in Canadian hospitals from 2006 to 2012. The data represent appealing information on viral nosocomial infections, which are often less investigated than hospital-acquired bacterial infections. We think that the definition of healthcare-associated influenza would gain from discussion, particularly concerning the time period between hospitalization and influenza onset.

In the Taylor et al1 study, hospital-acquired influenza was defined as symptom onset at least 96 hours after admission or readmission, with a positive influenza test result less than 96 hours after discharge or a positive test result less than 96 hours after patient transfer from another facility. In other clinical investigations, the time period considered varied greatly, ranging from 48 hours to 7 days.2 We previously applied the criterion of 48 hours after hospitalization.3,4 The incubation period should serve to define the optimal cutoff differentiating community- and hospital-acquired influenza. A previous review estimated that the median incubation periods of influenza A and B were 1.4 and 0.6 days, respectively, with 95% of patients infected by influenza A and B developing symptoms by 2.8 and 1.1 days, respectively, after infection.5 Of note, these results were based on 6 and 2 experimental studies of influenza A and B, respectively. The mechanisms of infection were inhalation, nasal spray, and nasal drops. The sole observational study included in this review of influenza A demonstrated that 37 airline passengers became symptomatic 12–84 hours after exposure to a single individual with influenza (median 38 hours).6 Nevertheless, experimental information on viral nosocomial infections, which are often less investigated than hospital-acquired bacterial infections. We think that the definition of healthcare-associated influenza would gain from discussion, particularly concerning the time period between hospitalization and influenza onset.

The Taylor et al1 study provides interesting new findings and raises the need for a standardized definition of healthcare-acquired influenza. A standardized definition would allow better comparability between observational and interventional investigations into healthcare-associated influenza.

ACKNOWLEDGMENTS

We acknowledge Ovid Da Silva for editing the manuscript.

Potential conflicts of interest. All authors report no conflicts of interest relevant to this article. All authors submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest, and the conflicts that the editors consider relevant to this article are disclosed here.

Philippe Vanhems, MD, PhD1
Caroline Landelle, PharmD, PhD2
Thomas Bénét, MD, MPH1

Affiliations: 1. Infection Control and Epidemiology Unit, Edouard Herriot Hospital, Hospices Civils de Lyon, Lyon, France; and Epidemiology and Public Health Unit, University of Lyon 1, Lyon, France; 2. Infection Control Program, University of Geneva Hospitals and Faculty of Medicine, Geneva, Switzerland.

Address correspondence to Philippe Vanhems, MD, PhD, Service d’Hygiène, Épidémiologie et Prévention, Hôpital Edouard Herriot, Hospices Civils de Lyon, 5 place d’Arsonval, 69437 Lyon cedex 03, France (philippe.vanhems@chu-lyon.fr).

Infect Control Hosp Epidemiol 2014;35(8):1074-1075
© 2014 by The Society for Healthcare Epidemiology of America. All rights reserved. 0899-823X/2014/3508-0025$15.00. DOI: 10.1086/677167

REFERENCES

Reply to Vanhems et al

To the Editor—We would like to thank Dr. Vanhems and colleagues for their interest in our study. We agree that development of a standard definition of healthcare-associated influenza (HAI), which currently does not exist, is an important priority to allow research in this area to progress. Since it is uncommon for a specific source of influenza infection to be identified in patients who become symptomatic following admission, an agreed-upon time limit will likely be necessary, similar to National Healthcare Safety Network definitions for other healthcare-associated infections. This time limit should represent the estimated incubation period for naturally occurring influenza—either median or maximum. Using a median incubation period is problematic since, as Dr. Vanhems and colleagues point out, it is likely subject to patient-to-patient variability related to virus strain type, dose, and host factors, as reflected in variability in incubation periods seen even in point source outbreaks.

In our study, designed to assess the burden of disease and seasonal variability in frequency of HAI, we elected to choose a maximum incubation period of 96 hours. Infections occurring beyond 96 hours after admission would be considered HAI, so that the HAI proportion would be conservatively estimated. In the 6 study years using this definition, 17.3% of hospitalized cases were considered HAI (range by year, 6.6%–33.1%). A further 4.2% of patients became symptomatic between 48 and 96 hours after admission (range by year, 2.9%–8.1%), and 4.8% developed symptoms between 24 and 48 hours after admission (range, 3.0%–7.8%). If these cases were added, the HAI proportion of all cases would be 21.5% (symptom onset more than 48 hours after admission) or 26.3% (more than 24 hours after admission).

ACKNOWLEDGMENTS

Financial support. Funding for this research is provided by the Public Health Agency of Canada.

Potential conflicts of interest. All authors report no conflicts of interest relevant to this article. All authors submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest, and the conflicts that the editors consider relevant to this article are disclosed here.

Geoffrey Taylor, MD; Robyn Mitchell, MHSc; Allison McGeer, MD; Charles Frenette, MD; Kathryn N. Suh, MD; Alice Wong, MD; Kevin Katz, MD; Krista Wilkinson, MSc; Barbara Amihod; Denise Gravel, MSc

Canadian Nosocomial Infection Surveillance Program

REFERENCES