

derestimated if some workers received influenza vaccine outside the hospital. Nevertheless, such underestimation would be of the same order of magnitude in 2008 and 2010; therefore, it probably would not affect the trend.

Thus, we can conclude that there has been a decrease in influenza vaccination coverage among health professionals in France, which probably reflects the real impact of the controversies related to pandemic vaccination campaign among HCWs in France.

In 2009, the government of France, which has a population of around 63.5 million, brought in 94 million doses of A(H1N1) pandemic vaccines. At the time, there had been ongoing public controversy about the safety of new pandemic vaccines and the rationale for mass vaccination of the whole population.³ In a cross-sectional online survey performed among 2,253 representative French adults, Schwarzingler et al⁴ have shown that alarming public health messages aimed at increasing the perception of risk severity had been counteracted by daily personal experience, which did not confirm the threat, while vaccine safety was a major issue. Furthermore, although French general practitioners had positive attitudes toward A(H1N1) influenza pandemic vaccination, they had not been allowed to participate in the pandemic vaccination campaign for logistical reasons.

This dissonance has been responsible for the fact that pandemic vaccine uptake rates have remained low in both hospitals and mass vaccination centers in France. It has been demonstrated that greater knowledge and positive attitudes toward influenza and vaccination have a significant positive association with vaccination coverage among nurses and have an even more positive effect on physicians.⁵ We think that all the controversies that surrounded the A(H1N1) influenza pandemic vaccination campaign in France have had a marked effect on the attitudes of HCWs toward seasonal influenza vaccine, which explains the dramatic decrease in coverage of French HCWs against seasonal influenza.

ACKNOWLEDGMENTS

We thank all the occupational physicians who answered the questionnaire.

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.

Jean-François Gehanno, MD, PhD;¹ Laetitia Rollin, MD¹

Affiliations: 1. Institute of Occupational Health, Rouen University Hospital and University of Rouen, France.

Address correspondence to J.-F. Gehanno, MD, PhD, Department of Occupational Medicine, Rouen University Hospital, 1 rue de Germont, 76000 Rouen, France (Jean-Francois.gehanno@chu-rouen.fr).

Infect Control Hosp Epidemiol 2012;33(7):757-758

© 2012 by The Society for Healthcare Epidemiology of America. All rights reserved. 0899-823X/2012/3307-0017\$15.00. DOI: 10.1086/666338

REFERENCES

1. Guthmann JP, Fonteneau L, Bonmarin I, Lévy-Bruhl D. Influenza vaccination coverage one year after the A(H1N1) influenza pandemic, France, 2010–2011. *Vaccine* 2012;30:995–997.
2. Vaux S, Van Cauteren D, Guthmann JP, et al. Influenza vaccination coverage against seasonal and pandemic influenza and their determinants in France: a cross-sectional survey. *BMC Public Health* 2011;11:30.
3. Schwarzingler M, Verger P, Guerville MA, et al. Positive attitudes of French general practitioners towards A/H1N1 influenza-pandemic vaccination: a missed opportunity to increase vaccination uptakes in the general public? *Vaccine* 2010;28:2743–2748.
4. Schwarzingler M, Flicoteaux R, Cortarenoda S, Obadia Y, Moatti JP. Low acceptability of A/H1N1 pandemic vaccination in French adult population: did public health policy fuel public dissonance? *PLoS One* 2010;5:e10199.
5. Zhang J, While AE, Norman IJ. Knowledge and attitudes regarding influenza vaccination among nurses: a research review. *Vaccine* 2010;28:7207–7214.

Neurosurgical Case Investigation of Postflood Pseud meningitis due to Mold

To the Editor—Limited data are available for postflood pseudomeningitis cases. We report a case investigation of postoperative pseudomeningitis due to mold in a neurosurgical patient. From October 14 to November 24, 2011, Thammasat University Hospital (TUH) was closed due to excessive floods in the Pratumthani province of central Thailand. Before TUH reopened, a thorough environmental cleaning was performed, and hospital preparedness plans included compliance with a postflood checklist from the Centers for Disease Control and Prevention.¹ Air sampling, using Microbiological Air Sampler NT 100 (Merck), was performed to assess fungal bioburden in operating rooms (ORs); samples were inoculated onto sterile blood and Sabouraud agars at each environmental test site, with the standard reference of less than 500 CFU/m³ total fungal bioburden as the upper limit of normal.² Five of 20 (25%) ORs met the criteria to reopen. On November 25, 2011, select units of the hospital reopened, including medicine, surgery, 1 intensive care unit, and the 5 ORs that met the criteria to reopen.

On March 10, 2012, 3 months after TUH reopened, the Infectious Diseases Division was notified about a neurosurgical patient with persistent postoperative fevers. The case was a 45-year-old man with no underlying medical conditions who underwent emergency evacuation of an epidural hematoma after a vehicular accident. The emergent case was performed in an OR that was not yet reopened for routine procedures. On postoperative-day 4, the patient had sustained fever, and the initial workup revealed a right lower lobe infiltrate, sputum Gram's stain with gram-negative coccobac-

cilli, and sputum culture with *Acinetobacter baumannii* susceptible to cefoperazone-sulbactam. The patient was treated with cefoperazone-sulbactam and was afebrile on hospital-day 6. However, *Aspergillus* species and *Penicillium* species grew from the cerebrospinal fluid (CSF) cultures performed at the initial fever workup. There was no evidence of central nervous system (CNS) infection by physical examination, subsequent fungal blood culture and serum galactomannan were negative, repeat head-computed tomography was unremarkable, and lumbar puncture (LP) was normal.

On March 10, 2012, a case investigation was initiated to further explore the potential source of infection versus pseudoinfection. The physician who performed the initial LP was interviewed. The physician wore appropriate personal protective equipment for the LP yet acknowledged that the LP culture bottles were open to air for at least 30 minutes during the LP procedure. No report of mold was evident from review of the microbiology log book during the 1-month period prior to the neurosurgical case. No evidence of lapse in sterile practices was observed during microbiological culture processes. LP instrument sets were randomly selected for culture and were negative. Air sampling in the area where the LP was performed revealed 1,250 CFU/m³ of *Aspergillus* species and 960 CFU/m³ of *Penicillium* species. It was therefore hypothesized that high air fungal bioburden contaminated the LP culture bottle and resulted in the false-positive CSF cultures for this neurosurgical case.

Postflood pseudomeningitis due to *Aspergillus* species and *Penicillium* species has not been previously reported. Given the nonspecific disease pattern of invasive fungal infections in the CNS, a thorough workup for invasive fungi is typically recommended. This recommendation may deserve modification in postflood case presentations to minimize unnecessary excess costs and exposure to antifungal therapy.³ Our report emphasizes the role of air quality measurements for fungal bioburden before reopening any patient care areas after prolonged, excessive flooding and after an enigmatic case presentation with detection of mold in a CSF culture. Additionally, subsequent interval monitoring of air quality should be considered to assure a safe environment. Last, our

findings portray the need for strict compliance with basic infection control measures for LP procedures. Prompt recognition of the false-positive CSF cultures averted exposure to antifungal therapy and excess length of stay.

ACKNOWLEDGMENTS

Financial support. This study was supported by the National Research University Project of the Thailand Office of Higher Education Commission (to A.A. and T.K.).

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.

Anucha Apisarntharak, MD;¹

Thanee Eimsitrakoon, MD;¹

Thana Khawcharoenporn, MD, MSc;¹

Pattarawit Rakskul, MD;² Linda M. Mundy, MD, PhD³

Affiliations: 1. Division of Infectious Diseases Thammasat University Hospital, Pratumthani, Thailand; 2. Division of Surgery, Thammasat University Hospital, Pratumthani, Thailand; 3. LM Mundy LLC, Bryn Mawr, Pennsylvania.

Address correspondence to Anucha Apisarntharak, MD, Division of Infectious Diseases, Faculty of Medicine, Thammasat University Hospital, Pathumthani 12120, Thailand (anapisarn@yahoo.com).

Infect Control Hosp Epidemiol 2012;33(7):758-759

© 2012 by The Society for Healthcare Epidemiology of America. All rights reserved. 0899-823X/2012/3307-0018\$15.00. DOI: 10.1086/666340

REFERENCES

- Centers for Disease Control and Prevention. Checklist for infection control concerns when reopening healthcare facilities closed due to extensive water and wind damage. http://emergency.cdc.gov/disasters/reopen_healthfacilities_checklist.asp. Accessed March 12, 2012.
- Yassin AF, Almouqatea S. Assessment of airborne bacteria and fungi in an indoor and outdoor environment. *Int J Environ Sci Tech* 2010;7:535-544.
- Scully EP, Baden LR, Katz JT. Fungal brain infections. *Curr Opin Neurol* 2008;21:347-352.