

outbreak, a 35% reduction in inpatient care.<sup>3</sup> However, unlike our study, the Taiwan study was performed in a country strongly affected by the outbreak.

There are several limitations to our results. First, to estimate additional direct medical costs attributable to the SARS outbreak, we derived the necessary data from the financial, accounting, and human resources records of Tourcoing Hospital. Therefore, rather than a micro-costing approach, we used a macro-costing approach that may have lacked precision. Second, this study was conducted from a hospital perspective, and we did not estimate the costs related to resources used outside the hospital, such as visits to general practitioners, emergency services, and patients' transportation to the hospital, or the costs of surveillance of the index patient's family and other contacts. The overall costs related to SARS from a societal perspective, accounting for benefits, harms, and costs to all parties, are higher than our estimates.

The example of the SARS outbreak illustrates the global nature of the burden of emerging pathogens. Institutions in the United States and European countries will be increasingly involved in managing outbreaks of infectious disease, such as zoonotic diseases, in other parts of the world. Adequate preparations for such outbreaks require knowledge of their potential economic burden, in particular for budget allocation purposes.

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## Defining Influenza-like Illness

TO THE EDITOR—We read with great interest the article by Babcock et al.<sup>1</sup> recently published in the journal. It was demonstrated that the most frequent symptom of influenza among hospitalized patients was cough, followed by subjective fever and fatigue. The authors commented that the finding of normal temperature in a substantial proportion of influenza patients was probably the result of medical interventions (eg, antipyretic use) for the hospitalized patients. However, Thursky et al.<sup>2</sup> concluded, in a study that recruited patients from sentinel general practices in Australia, that a case definition of cough, subjective fever, and fatigue had higher positive predictive value than did the definition of the Centers for Disease Control and Prevention (CDC). Despite methodological differences in the diagnostic tests used and the patients recruited, the 2 studies have similar findings: cough, subjective fever, and fatigue are the most important symptoms of influenza. Both also found that a high temperature (37.8°C or higher) was not the prime indicator of influenza, as it is regarded by the CDC.

Because influenza is “an unvarying disease caused by a varying virus,”<sup>3(p157)</sup> it should have a uniform case definition. In Europe, Aguilera and colleagues<sup>4</sup> collated a list of case definitions of influenza-like illness used by 14 different European countries. No two definitions were exactly same. Some countries used a definition with criteria that would require further explanation. For example, Denmark used the term “symptoms of respiratory infection” as one of the criteria,

and such a phrase allows for several interpretations. Some countries used terms like "frontal headache" or "stiffness" as a criterion in the definition; these are not among the frequent symptoms of influenza and, in the absence of sinusitis, the former complaint is difficult to explain. Headache in influenza is commonly nonlocalized.<sup>3</sup> However, all countries included "fever" in their case definition.<sup>4</sup>

Perhaps too much emphasis has been put on "fever" or "temperature," when in fact it is not the most frequent symptom of influenza. In the context of an outbreak, measuring a patient's temperature can be cumbersome and may yield variable results, depending on the type of thermometer used and the body site where the measurement is made. Qureshi et al.<sup>5</sup> verified that replacing the CDC definition with another definition that used "fever" only as an optional criterion did not change the incidence of influenza-like illness in a large cohort of Muslim pilgrims at the Hajj; the definition they used was "sore throat in combination with either temperature  $\geq 38.0^{\circ}\text{C}$  or cough."<sup>5(p2957)</sup>

A definition of influenza-like illness should be equally sensitive, specific, and practically simple. It should be such that even a person who is not a medical practitioner, such as a school teacher, should be able to detect a case of influenza-like illness without needing immediate assistance. These recent studies indicate that measurement of body temperature can probably be regarded as an optional criterion. Sudden onset of the symptom triad of cough, subjective fever, and fatigue could be a novel alternative definition of influenza-like illness. The importance of unified diagnostic criteria for influenza-like illness that incorporate recent epidemiological

data can not be overemphasized as the threat of a global outbreak has emerged as a reality.

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