an area with current or previously documented or suspected community transmission of SARS. With the number of affected areas in the world rapidly dwindling, the challenge will be to maintain our vigilance as the memory of the outbreaks fades.

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SARS and the Internet

TO THE EDITOR: Your editorial (May 15 issue)[1] describes the speed and power of the Internet in communicating to the world knowledge about severe acute respiratory syndrome (SARS) and the progression of the epidemic. This access is indispensable to those of us in Taiwan, from government officials to basic researchers like me. Because of Taiwan's exclusion from the World Health Organization (WHO),[2] we had to rely solely on the Internet to obtain information about SARS from the WHO's Web site and other Web sites like that of the *Journal*, until a team of epidemiologists from the WHO finally arrived in May to assess the damage here. Inexperienced at containing an outbreak, Taiwan was ill prepared for the task, and the deficiencies in hospital management and the health system were exposed. Since late April, a series of clusters of infections in hospitals made Taiwan's "the most rapidly growing outbreak,"[3] although the pace slowed after mid-May (Fig. 1). It was said that no single entity can manage SARS on its own.[4] For a while, Taiwan was asked by the world to do just that.

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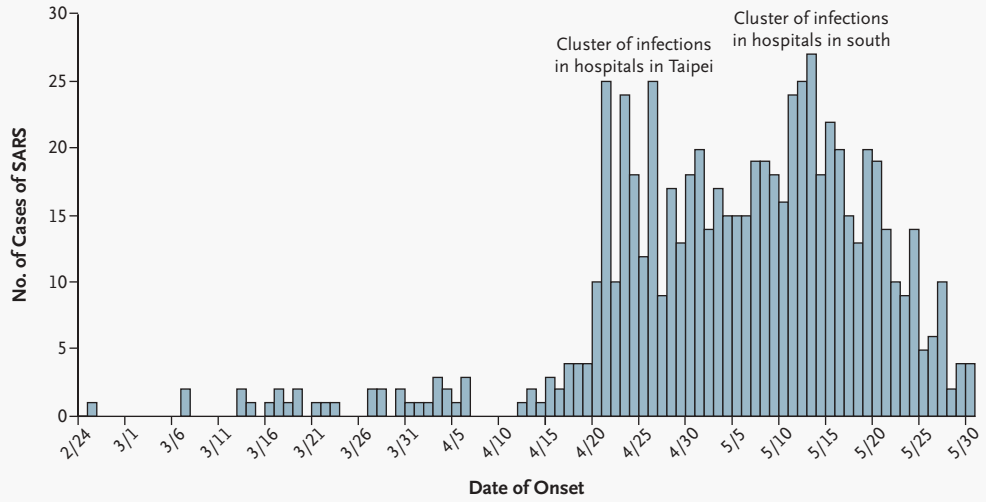

Figure 1. Number of Cases of SARS, According to the Date of Onset, as Reported through June 1, 2003.
Data are from the Center for Disease Control of Taiwan (http://www.cdc.gov.tw/sarsen).

Singapore. Geneva: World Health Organization, May 2003. (Accessed July 24, 2003, at http://www.who.int/csr/sars/archive/2003_05_17/en/.)

DRS. DRAZEN AND CAMPION REPLY: It is essential that we learn from the worldwide experience in containing the outbreaks of SARS. This coronavirus-associated infection could reemerge as a threat to world health. The global threat required consistent responses, regardless of all our differences. The Internet facilitated rapid, global communication of information about outbreaks and the containment procedures, which were basically the same in every country. One lesson to remember is that with an infectious disease such as SARS, the welfare of all depends on early detection of the disease and open, honest communication among health officials everywhere.

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Pneumococcal Vaccination in Older Adults

TO THE EDITOR: Jackson et al. (May 1 issue)[1] demonstrate that the polysaccharide pneumococcal vaccine did not reduce the incidence of pneumonia among older adults — a finding that is consistent with the results of the previous blinded, randomized, controlled trials.[2] The authors assert, however, that vaccination should nevertheless continue, because a study[3] calculated that it is cost effective in preventing pneumococcal bacteremia in persons in this age group. That report, however, tacitly assumed that a reduction in the frequency of pneumococcal bacteremia among vaccinees translated into a decrease in the frequency of pneumonia — a premise that the current study and the previous randomized trials refute. The appropriate comparison in terms of cost analysis is that between the expenses associated with hospitalization for pneumococcal bacteremia among unimmunized persons and the combined expenses associated with immunization plus an equivalent number of hospitalizations among vaccinees for pneumonias without pneumococcal bacteremia. A reexamination of the estimates demonstrates that such a calculation would not justify vaccination for the prevention of pneumococcal bacteremia.

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TO THE EDITOR: In addition to bias from misclassification of the outcome of pneumonia, a residual bias due to confounding in the observational study by Jackson et al. may explain the increased risk of hospitalization for pneumonia among persons who received pneumococcal vaccination.[1,2] Patients at higher risk will be more strongly advised to receive the vaccine than those at lower risk. This difference is clearly demonstrated in Table 1 of the article, which shows that the frequency of many risk factors was significantly higher among persons who had been vaccinated than among those who had not. This "confounding by indication" will reduce the estimate of a beneficial effect. The conventional regression analysis performed by the authors should have been complemented with other powerful methods such as propensity scores to examine the potential for residual bias.[3] However, misclassification of cases of pneumonia cannot be controlled for, and there might be residual confounding. Therefore, a sufficiently powered prospective, randomized, controlled trial among the elderly remains the best approach to providing a valid estimate of the effect of pneumococcal vaccination on the incidence of pneumonia.[4]

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