

WILL THE SARS EPIDEMIC RECUR?

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History is replete with accounts of novel viral epidemics. Many of these viruses, like the human immunodeficiency virus or influenza virus, have become endemic. Others, like Ebola or Sin Nombre viruses, cause outbreaks when conditions facilitating their transmission from animal to human hosts (still unknown in the case of Ebola) are met. Some epidemics, such as the one caused by Nipah virus in Malaysia and Singapore, have occurred only once, but the potential for recurrence exists due to the presence of animal reservoirs. Even when diseases are apparently eradicated, the possibility of unnatural recurrences due to acts of bio-terrorism must be considered. Although smallpox appeared to be the greatest threat at the beginning of 2003, the proven chaos and economic damage created by SARS may have made this novel coronavirus a particularly attractive agent in this regard.

At the time of writing, it seems likely that SARS coronavirus can be eradicated from humans. Chains of transmission have been broken worldwide, and the final case reported was isolated in Taiwan on 15th June 2003 (1). The probability of a recurrence therefore depends on the existence of an animal reservoir. On a search of wildlife markets in Guangdong, investigators have isolated a remarkably similar virus in both the masked palm civet cat (*Paguma larvata*) and the raccoon dog (*Nyctereutes procyonoides*) (2). One of the index cases of the Guangdong outbreak was a chef who specialized in wild game. These observations, together with the known propensity of coronaviruses to cause infections in animals, suggest that an animal reservoir could indeed exist. Although the precise circumstances that led the virus to be transmitted to humans are not known, these are unlikely to be so extreme that future replication will be impossible. Given the current

crackdown on unsanctioned capture and sale of wildlife in southern China, and the heightened awareness of the disease in that region, we feel that SARS is unlikely to recur this autumn.

However, we also believe that subsequent outbreaks will occur, although these will be smaller and more easily contained, if the lessons learnt from this epidemic are not forgotten. The heterogeneity of the clinical presentations of SARS is now well known (3), and there is consequently less chance of missing atypical cases which could go on to amplify the outbreak. Nosocomial cases constituted the bulk of the epidemics in all countries involved, and the institution of strict infection control measures has been pivotal in ending these outbreaks. All hospitals should now have protocols in place, and the delay between the appearance of a new SARS case and implementation of appropriate measures should be greatly reduced in the future. The diagnostic tests we now have available, although of limited practical use in managing an established outbreak (in our experience), may prove advantageous in the early confirmation of a new outbreak and may therefore also accelerate the adoption of response measures. The lack of an antiviral drug of proven efficacy and of a vaccine underscores the need for continued vigilance and preparedness to ensure that future outbreaks are contained as effectively as the one we have just overcome.

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