

International events in the SARS age

The spread of SARS by international air travel has caused considerable anxiety about hosting travellers from areas of recent SARS transmission (formerly “SARS-affected areas”). Although an enormous amount has been learned about this new disease in a very short time, our knowledge is of course still incomplete, and evolving. Uncertainties tend to make people even more anxious, and risk-averse. This was as true in the early years of the AIDS pandemic as it is for SARS.

We already know very much about the modes and risks of transmission of SARS, but residual uncertainty and anxiety can influence decisions, especially when one's personal health is felt to be at risk. We would like to describe a real-world example of this, regarding the response and reaction to a group of visitors to Guam from SARS-affected areas.

By early May of 2003 SARS had been introduced, through air travel, from the first few affected areas to about 25 other countries worldwide. However, only some of the originally affected areas were experiencing ongoing transmission: Hong Kong, Singapore, Toronto, Taipei and some areas of mainland China. Travel into Guam from all of these areas was unrestricted, as it was elsewhere in the USA and in most of the world. Departure restrictions and departure screening did, however, exist in the SARS-affected areas, and health alert notices were being distributed on arrival in Guam. Guam at that point was receiving about 400 passenger arrivals per week from SARS-affected areas, mostly on six direct flights weekly from Taiwan and two from Hong Kong.

A major examination takes place in Guam and in many other sites around the USA twice a year for accountants hoping to earn US licensure. These exams are planned months in advance, and represent a major commitment of preparation time and expense on the part of applicants, for whom this is a major career event. The exams cannot be postponed nor the venues changed.

In early May 2003, approximately 2100 people were scheduled to arrive in Guam for the two-day examination. Over 90% were from Japan or Korea, but about 119 were from SARS-affected areas, of which the majority (about 100) were from Hong Kong, with fewer than 10 each from Singapore and Taiwan, and 2 from mainland China. About two weeks before the examination, the local newspaper in Guam ran an editorial drawing attention to this particular group of 119 arrivals, and suggesting that it was unnecessary risk-taking to allow them to enter. This touched off considerable public anxiety, including among the medical community. Such public attention did not extend to the 400 other arrivals each week from the same countries.

From an early point the Guam Board of Accountancy (GBA), the local organisers of the exam, consulted closely with the Guam Department of Public Health and Social Services (DPHSS). A joint decision was made to proceed with the examination on Guam, and to include all candidates regardless of country of origin. This was a health-based decision, not based primarily on the financial and personal implications for the candidates (although these were considerable, and were well recognised by both agencies). Rather, it was felt that the presence of these candidates in Guam represented no greater risk (if anything, less risk) than other travellers from these countries, and it was felt that their presence in Guam could be monitored in a way that the possibility of SARS introduction and transmission could be kept to a level of risk which approached zero.

Because the total number of exam-takers was so large, the exam itself was to be given at nine different sites. Examination conditions are tightly controlled, with strict rules and monitoring, overseen by about 250 local proctors. Exam sites and even seats are assigned to candidates well in advance. Candidates make all their own travel and accommodation arrangements.

The SARS prevention strategies implemented for the subset of 119 from SARS-affected areas included both standard measures (in place for all travellers from these areas) and special measures for this particular group. The special measures were adopted because of a slight theoretical risk associated with a two-day examination in close quarters; but to a large extent to allay public concern.

Inform'ACTION n° 14

MAY 2003

Underlying the DPHSS/GBA decisions were the known very low risk of infection in the general community in SARS-affected areas (the great majority of cases had occurred in health care workers or in household contacts of SARS patients), the even lower risk that exposure would have occurred in the week or so before travel (2–10 days incubation period), and the consequently very low risk of export of SARS from these countries. For example Hong Kong, where most of the 119 candidates were from, had not exported a single case of SARS to anywhere since 18 April.

The standard measures in place to prevent export of SARS included:

- high awareness of SARS in the countries of concern, including an awareness that no one who is sick or at risk of SARS should travel;
- quarantine of close contacts of SARS patients in the country of origin, with travel prohibited;
- airport departure screening to identify any who have a fever or are at risk of SARS, with further evaluation required before boarding is allowed;
- health alert notices distributed on incoming flights, with information about who to contact should symptoms develop;
- each flight met by a representative from DPHSS, ready to further assess anyone who might have developed symptoms en route, or to address any other concerns.

Special measures for this group of 119 included:

- a letter from GBA advising of the situation and the special measures planned, and enlisting cooperation and understanding, including immediate reporting of any symptoms which develop (these letters were sent to as many as possible before departure, together with direct email or telephone contact, and to the remainder on arrival);
- information obtained on accommodation arrangements for candidates from SARS-affected areas;
- several information sessions on SARS and on exam arrangements for the 250 proctors;
- a thermometer provided to each candidate on arrival (if they had not brought their own), with a request to take and record their temperature twice a day;
- a Public Health nurse present at each exam site each morning to take the temperature of the 119 from SARS-affected areas, with instructions to prohibit from exam entry anyone who had developed a fever or cough, and to notify an on-call DPHSS physician;
- a Public Health nurse and other DPHSS support staff available during the day to respond to any health concerns or questions which might arise.

This strategy and rationale were discussed in advance with the Guam Visitors Bureau, and disseminated publicly through the media.

No fevers developed and none of the participants from SARS-affected areas were ill during their stay in Guam for the exam. The exams themselves went uneventfully, the only exception being that one of the hotels serving as an exam site cancelled its participation at a late date, necessitating a change of venue.

Inform'ACTION n° 14

MAY 2003

This lack of appearance of SARS symptoms was completely consistent with the expected very low risk of SARS in the participants. The measures in place were considered by both DPHSS and GBA to reduce the risk of SARS transmission to nearly zero.

Nonetheless, anxiety remained in the general and the medical community. For example, a week later a woman died, shortly after admission to the hospital, of acute heart failure with pulmonary oedema (complicating a chronic heart condition). She had been well, in her usual state of health, until an hour or two before admission when she suffered the acute event and lapsed into a coma while at home. She did have an unexplained fever on admission (although no known recent fever). She had no travel or SARS exposure history. Nonetheless, the media learned of this patient and reported this immediately as possible SARS, with a substantial reaction in the general and medical community. Despite a clinical course inconsistent with SARS, an alternative diagnosis confirmed at autopsy the same morning, and an "exposure" that consisted entirely of being a flower arranger and supervisor at one of the hotels where the accountants' exam had taken place a week earlier (but where none of those from SARS-affected areas had stayed), this concern was still manifest, and persisted for many days thereafter.

A week after that event another woman, with a long history of asthma, was admitted with an acute asthmatic attack and respiratory distress, but no fever (she had felt slightly feverish). SARS was raised as a concern because she had mentioned briefly talking to two accountants from Taiwan two weeks earlier in her job as a salesclerk in a large shopping mall.

The DPHSS has encouraged a high index of suspicion in such reporting, to "cast the net wide", and has been most willing to investigate all such reports. However, it seems that the public concern and, to some extent, reports from the medical community are directly related to extensive media attention given to one particular group of travellers that was indistinguishable from thousands of similar visitors to Guam from the same SARS-affected areas, except in representing an even lower risk to the people of Guam.

Elsewhere in the world a number of sporting and other events have been cancelled because of similar concerns. This may be due, in many cases, to economic and social considerations rather than to public health concerns. In this environment both the US Centers for Disease Control and Prevention and the World Health Organization released position papers^{1,2} in mid-May, a week or so after the accountants had departed Guam, on the subject of international gatherings and SARS. Both these documents proposed actions very similar to those which had already been taken during the accountants' examination in Guam, and both recommended that such events not be cancelled.

This experience highlights the many considerations, beyond those of science, which may affect decisions and actions when communities are faced with new and unfamiliar threats to public health. Health authorities must appreciate and respond to community concerns but should try, as much as possible, to base recommendations and decisions on the best science available.

Michael J. O'Leary, MD, MPH
Regional Epidemiologist, CDC/NCID, Guam

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¹ CDC. Interim guidance for institutions or organisations hosting persons arriving in the United States from areas with SARS. 14 May 2003.

² WHO. Guidance for mass gathering events: hosting persons arriving from an area with recent local transmission of SARS. 15 May 2003.