

What have we heard?

- ❑ More research on the modes of transmission of SARS, the effectiveness of personal protection equipment and the best choice of treatment is needed
- ❑ The role of traditional Chinese medicine in treating SARS needs to be clarified
- ❑ Positive findings of a joint research by two local universities on a post-SARS public health analysis of the epidemic and its implications for the future
- ❑ Insufficient collaboration between the two universities
- ❑ There is a lack of sustained funding to conduct public health research
- ❑ Healthcare workers and staff of residential care homes for the elderly should have more extensive training in infection control and crisis management
- ❑ More physicians with specialist training in clinical infectious diseases and with dual specialisation in respiratory and critical care medicine are required
- ❑ More public health practitioners with training in field epidemiology and infectious disease control are required

INTRODUCTION

13.1 SARS is a new disease. Effective research on various aspects, including microbiology, clinical features, therapeutics and control measures, are therefore essential to our understanding of the disease and its public health implications. The epidemic has also revealed a number of shortcomings in training, and gaps in the availability of certain fields of specialist expertise.

RESEARCH

13.2 Hong Kong is uniquely placed to carry out research on SARS because of the epidemic experience, the culture of research, and familiarity with the English language. Much has already been published, for which Hong Kong has gained an international reputation for scientific excellence. These include the first identification of the SARS coronavirus, early descriptions of the clinical features of SARS, and detailed analyses of SARS epidemiology. (See box titled “Ground-breaking discovery” on page 21.)

13.3 Ongoing research on SARS has been initiated by the universities, HA and DH, and commissioned by HWFB. This encompasses work on the animal origins of SARS, the molecular epidemiology of the virus, rapid diagnostic tests, the spectrum of clinical disease including the extent of over-diagnosis and atypical or cryptic presentation, and the social and psychological impact of the disease on individuals and the community. Government has established a research fund of HK\$450 million to support research projects on the prevention, treatment and control of infectious diseases, in particular emerging infectious diseases including SARS.



Laboratory work

13.4 In addition, the Research Grants Council (RGC), which is a non-statutory advisory body responsible for, inter alia, advising Government on the needs of Hong Kong's higher education institutions in the field of academic research, launched a special grant in May 2003 to support urgent academic research projects which are directly connected with the SARS epidemic, and which could help

Hong Kong to understand and fight the disease. A special allocation of HK\$10 million was dedicated to 16 urgent and important research projects to tackle some immediate problems brought about by the epidemic.

13.5 There remain a number of unanswered questions on SARS that can only be addressed by further research. These include –

- ◆ Aspects of clinical management, including therapeutics and the role of traditional Chinese medicine
- ◆ Transmission risks, including the mode of transmission and duration of infectivity
- ◆ Appropriateness of hospital infection control measures, eg the use of different types of personal protection equipment
- ◆ Cost and clinical effectiveness of community infection control measures
- ◆ Long-term consequences for individuals recovering from the disease.

13.6 In order to ensure that these issues are properly and comprehensively addressed, it is important that research efforts are well coordinated. By its nature, research work tends to be highly competitive but, for SARS, there is a public health imperative to replace competition with collaboration among universities. At present, research priorities are largely determined by the providers of funds, the University Grants Committee and HWFB (who administer the newly established Research Fund for the Control of Infectious Diseases). Greater involvement of academic

departments and institutions, HA and DH is desirable, both to set priorities and to ensure that there is an appropriate balance of research activity on microbiological, clinical, public health and psycho-social aspects of SARS. There is a need to develop a greater culture of research within the public health services, together with improved collaboration between DH and academic departments of epidemiology and community medicine. Outbreak control plans should include mechanisms for working out research priorities in the event of any future outbreak of new or emerging disease. Finally, and importantly, Hong Kong is uniquely placed to develop cross-boundary research collaborations within the Pearl River Delta region and with other parts of Mainland China.

- ◆ The Government and HA should work with universities and research funding providers to ensure that research places due emphasis on public health, and that priority is given to projects that need to be undertaken urgently in order to prepare for any future outbreak of SARS.
- ◆ Further research should be conducted on –
 - Improved diagnostic techniques
 - Clinical management of SARS, including therapeutics and role of traditional Chinese medicine
 - Transmission risks of SARS
 - Most appropriate hospital infection control measures for SARS
 - Seroprevalence of SARS in defined populations and communities

- Cost and clinical effectiveness of community infection control measures for SARS
- Long-term consequences of SARS.
- ◆ There should be more collaboration in research among universities.
- ◆ DH, HA and the universities should establish joint academic and clinical appointments of public health staff to work across the health and healthcare system. The possibility of establishing a single academic public health institution that pools scarce expertise should also be considered.
- ◆ Cross-boundary research within the Pearl River Delta region should be actively encouraged. Advantage should be taken of the readiness of the international research community to work in collaboration with their colleagues in Hong Kong.

TRAINING

13.7 In response to the SARS epidemic, HA rapidly organised a variety of training initiatives for hospital staff, as well as setting up an Infection Control Resource Centre. Infection control training sessions were held for a variety of different disciplines, including new nurse recruits, allied health students, HA contractors, private hospital staff, doctors on secondment, healthcare support workers, and medical interns. Regular updates, refresher classes and videos on infection control were provided, as well as practical workshops on

wearing personal protection equipment for targeted groups of staff. By the end of April 2003, over 95% of HA staff across all levels and disciplines had attended at least one round of training on infection control.

13.8 Currently the emphasis of training in health care is almost exclusively on clinical practice and, in general, healthcare workers receive inadequate training in infection control and public health. This is equally true in the private sector, both amongst primary care practitioners and staff of residential care homes for the elderly. It also appears to be a deficit at all levels, from primary training and the undergraduate curriculum, through to continuing education. As a consequence, the mindset of universities, training institutes and the healthcare sector needs to be changed to put more emphasis on public health, prevention and infection control. A greater commitment is needed, in terms of both policy and resources, to ensure that all healthcare workers receive training in these areas. This is equally important for public and private sector staff, and for workers in both primary and secondary care. Training should be ongoing, and standards of infection control should be regularly audited.

13.9 Even in the public health services, there is a huge deficit of field epidemiology and infectious disease control experience, and relatively few fully trained and accredited public health physicians. This is a major shortcoming in a densely populated territory of over six million people, where the potential for major communicable disease incidents is very high. To redress this, a sustained programme of

training in field epidemiology needs to be rapidly introduced. Elsewhere, field epidemiology training programmes (FETP) have an excellent track record of training high-calibre communicable disease epidemiologists, with good field experience from a variety of scientific backgrounds (medical, nursing, veterinary, biomedical sciences), within a two-year timescale. Examples include the Epidemic Intelligence Service (EIS) in the United States, and the European Programme for Intervention Epidemiology Training (EPIET) in the European Union. Similar schemes are now becoming established in Asia, particularly in Thailand with assistance from WHO. A programme has also recently commenced in Mainland China. The possibility of participating in this programme should be explored, both to enable these skills to be rapidly introduced into the public health services in Hong Kong, and to develop greater collaboration with professional colleagues elsewhere in China.

13.10 In the longer term, the Centre for Health Protection is ideally placed to play a leading role in public health education and training, in collaboration with local universities, the Hong Kong College of Community Medicine, and overseas institutions. There should be specific funding allocation earmarked for this purpose.

- ◆ The Government, HA, universities, training institutes, and private sector employers should ensure that all healthcare workers get basic and ongoing training in infection control and have an understanding of fundamental

epidemiology and public health principles.

- ◆ HA should rapidly address the skills shortages in clinical infectious diseases and critical care medicine.
- ◆ The Government should give a policy commitment to public health training and ensure that priority is accorded in the allocation of resources.
- ◆ The Government should consider establishing a Hong Kong field epidemiology training programme (FETP) as a means of rapidly establishing a cadre of specially trained infectious disease epidemiologists. Public health training collaborations with Mainland China should also be explored.