COMMENTARY

The prevention of communicable diseases in Hong Kong

WL Lo

Some of the recent communicable disease problems in Hong Kong are summarised to illustrate the strengths and weaknesses of how Hong Kong currently controls and prevents communicable diseases. Suggestions on how Hong Kong could improve the control and prevention of communicable diseases are made.

HKMJ 1998;4:419-22

Key words: Communicable disease control

Introduction

The 1997 avian influenza (H5N1) outbreak heightened awareness of the need to monitor and control the spread of communicable diseases. The high profile involvement by the United States Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) in the investigation of the outbreak has led to a call for the setting up of a local disease control centre, so as to enable the Hong Kong Special Administrative Region to more effectively handle its own communicable disease problems without overrelying on outside experts. While it is worth further exploring the idea, however a local CDC is definitely not the complete answer to local communicable disease problems.

The nature of communicable diseases

As was well illustrated by the H5N1 incident, communicable diseases are not a purely medical or scientific problem; they can cause problems that may have far-reaching consequences in every sector of society. Communicable diseases can create considerable political and financial problems.

Because of the increasing use of air transportation, communicable diseases can be rapidly introduced from one country to another—within hours. Consequently, communicable diseases are not only local problems but are potentially national, international, and global problems. The effective control and prevention of communicable diseases requires the concerted effort of local communities and the cooperation of the international community.

The prevention of communicable diseases

Primary prevention aims to impede communicable diseases from arising. Secondary prevention aims to impede the spread of a communicable disease from an infected person. Primary prevention is therefore directed at the protection of non-infected persons. The most notable example of primary prevention is the prevention of vaccine-preventable diseases by vaccination. The elimination of non-human sources of infection and the abolition of the routes of disease transmission are also included under primary prevention. In comparison, secondary prevention is directed at the early detection, isolation (if necessary), and treatment of infected persons.

Prevention must also obstruct the importation of communicable diseases. However, even in the most affluent and advanced countries it is not possible to absolutely prevent the introduction of communicable diseases from elsewhere. A more realistic goal is to establish a system that is capable of detecting and responding effectively to an outbreak of a communicable disease as soon as one is introduced into Hong Kong.

The use of vaccines

Hong Kong has a well-established childhood vaccination programme. The uptake rates for childhood vaccinations are among the highest in the world. But a

Room 102, Kamming House, 49-51 Queen's Road Central, Hong Kong
WL Lo MB, BS, FRCP (Edin)

Correspondence to: Dr WL Lo

gap in the programme surfaced in 1997 in the form of a rubella outbreak involving thousands of people, predominantly males in their teens and twenties. Another gap was subsequently revealed by the Department of Health when it announced that approximately 15% of Hong Kong teenagers are not immune to measles, despite the fact that most of them should have been vaccinated for measles at the age of 1 year. A measles-mumps-rubella (MMR) vaccination campaign was launched to cover the age groups at risk and the vaccination schedule was increased to the administration of two doses of MMR at the ages of 1 year and 7 years. The predicted measles outbreak has not occurred, probably because of the timely intervention.

There is, however, no structured vaccination programme for adults. The issue of continuing the childhood vaccination programme into adulthood has not been addressed. The recent introduction of free influenza vaccination to all residents of homes for the elderly by the Department of Health in response to outbreaks of influenza in these homes illustrates that crises are often dealt with in an ad hoc manner.

A comprehensive assessment of the vaccination needs of the adult population is long overdue. Financial considerations may have deterred the Hong Kong Government from making a comprehensive review of adult vaccination needs. As a review of the financing of the health care system in Hong Kong will soon be made, this would be an opportune time to review the financing of preventive medicine and, in particular, vaccination financing. Even if full financing for a universally free adult vaccination programme is not made available, significant improvement can be achieved by giving a clear message to the public that certain vaccines are recommended for adults, together with a schedule on how these vaccines should be administered. Every primary health care provider can then follow the schedule, educate their patients and contribute to an increase in the uptake of vaccines by adults. Every health care worker should make it their mission to impress on clients, at every possible contact point, the importance of adequate vaccination and to give vaccines whenever the opportunity arises. The public should be encouraged to keep their own vaccination record and to have it reviewed and updated at appropriate intervals.

The vaccination needs of various occupational groups have not been addressed in a systematic manner. As a matter of priority, a vaccination programme should be designed for and provided to the following groups: health care workers, other workers in health care settings, childcare workers, workers in hostels (particularly those in homes for the elderly), food handlers, teachers, members of the disciplinary forces, and university students (especially those who are staying in hostels). All employers should be informed of the vaccination needs of their employees. For the self-employed, the Government should take steps to inform them of their vaccination needs directly or inform them through their unions and professional organisations.

It has almost become fashionable, especially in more affluent countries, for people to query the value of vaccination and to exaggerate any deleterious side effects. Health care workers need to develop confidence in what they are doing by acquainting themselves with the facts regarding the successes of vaccination programmes, so that they are able to satisfactorily reply to anyone challenging the value of vaccination.

The elimination of non-human sources of infection

The elimination of non-human sources of infection can be very effective and sometimes dramatic. The most notable recent example is the successful control of the H5N1 influenza outbreak by the complete destruction of the 1.3 million chickens in Hong Kong. The control of a cholera outbreak in 1997 by the elimination of a probable source of contaminated food from a food-processing factory is another example. However, it is not always possible, or necessary, to eliminate the sources of infection. For example, it is not feasible to eliminate the sea as a source of *Vibrio cholerae*. Monitoring the coastal waters for the presence of *V. cholerae* is, therefore, not useful in the control of cholera. Instead, control measures should be focused on wholesale and retail seafood markets and catering premises. Similarly, it is not necessary to check all poultry farms for the presence of *Salmonella* species. Control measures should be focused on the relevant slaughtering and cooking processes. The elimination of a source of infection does draw a lot of attention and requires the commitment of an enormous amount of resources.

It has to be remembered that everyone in Hong Kong can contribute towards the elimination of sources of infection in their own environment. The collective contribution of the public can be even greater and more cost effective than high-profile government efforts. The most notable examples are the adequate cooking of food, proper refrigeration and storage of food, and the elimination of stagnant water from the home

environment to stop mosquito breeding. The value of public education cannot be overstated.

Abolishing the routes of disease transmission

It is easy to forget the importance of having a safe water supply that is completely separate from the sewerage system, in safeguarding public health. The question of whether widespread transmission of disease will occur is often asked during cholera outbreaks. The answer can always be a confident no, if the standard of the water supply is maintained. Even though the filthy state of the Hong Kong harbour and typhoon shelters does call for an improvement in the sewerage system, the high standard of the water supply has effectively abolished the most important route of widespread cholera transmission—namely, faecal contamination of drinking water.

Despite a superb water supply system, food-borne infection remains high on the list of notifiable diseases. This has partly to do with the eating habits of Hong Kong people, as eating uncooked or undercooked seafood has become fashionable over the years and has become more affordable. Raw seafood is offered in all kinds of eating premises—from Japanese restaurants to streetside eating stalls. It is difficult to control the standard of hygiene at all eating places. After all, even the most expensive restaurant will not be able to guarantee that their fresh lobsters have not been caught in water teeming with *V. parahaemolyticus* and *V. Cholerae*. The hotpot can also be a risky food type. Too many hungry people crowded around a small pot, all trying to cook pieces of semi-frozen meatballs, will turn the boiling water lukewarm. Hunger will tempt people to eat food when it is undercooked and it is easy to ingest a few live *Salmonellae* organisms at the same time. To reduce the incidence of food-borne infections, Hong Kong people need to change their eating habits. Public education is of utmost importance in abolishing this route of disease transmission.

The early detection of communicable diseases

The hospitals and clinics of the public and private sectors have and will continue to serve as the catchment network for communicable diseases. Most of the local population has access to at least some of these facilities. If all health care staff at treatment facilities are aware of their role in the control and prevention of communicable diseases, Hong Kong will have a sufficiently effective network for early disease detection. The public should be encouraged to seek treatment early and staff at treatment facilities should be encouraged to notify the Department of Health promptly when a communicable disease of public health importance is suspected, whether the disease is notifiable or not. Hospitals and clinics should continuously be supplied with the most current information on prevalent communicable diseases so that they know what symptoms to look for.

The public should be similarly educated so that they understand the benefits of adopting preventive measures and are aware of when they should seek treatment. Ideally, people should be so educated that they appear soon enough to facilitate the early detection of a communicable disease but do not present themselves unnecessarily, consequently over-whelming the medical system. At the peak of the 1997 H5N1 influenza outbreak, the public was made aware of the disease through intense press coverage. Unfortunately, however, they were not informed of the most important symptom of the disease—the presence of a high and persistent fever. As a result, all the accident and emergency departments of the public hospitals were overwhelmed by the appearance of anxious patients with minor respiratory illnesses. The importance of giving balanced information to the public about a communicable disease cannot be overemphasised.

Institutions that are prone to communicable disease outbreaks such as schools, homes for the elderly, childcare centres, hostels, and social service centres should have direct access to community physicians with the Department of Health. Reports on the presence of communicable diseases from these institutions should be made at the earliest instance so that control measures can be initiated without delay. The institutions should also seek advice from the community physicians on ways to prevent the transmission of communicable diseases.

Towards better prevention of communicable diseases

The most powerful resources Hong Kong has in the control and prevention of communicable diseases are a functioning public health system, a well-educated population, and a free press. In the control of communicable diseases, the greatest enemies are complacency, a lack of vision by policy makers, and a reluctance to make any necessary changes. The H5N1 influenza outbreak was a timely reminder that we are the masters of our own destinies. No foreign experts could have made the difficult decision of killing all

the chickens for us. This decision had to be made locally. Even though the most advanced technologies may not be available here, the strong political determination shown during the crisis was crucial to resolving the problem. Without political determination, the complete destruction of the chickens could not have been carried out; the embargo on poultry importation could not have been enforced; the surveillance of poultry—both locally and in mainland China—could not have been conducted to such an extent over such a short period of time; and information about the outbreak would not have been so openly disclosed to the public.

However, political determination should not be reserved for crisis management. Political will is needed to improve the public health infrastructure so that it can meet the challenge of coping with existing and emerging communicable diseases. It is imperative that public health matters be given a high priority by the Chief Executive and his inner cabinet, the Executive Council. The establishment of a separate Health Bureau and the post of Secretary of Health would give recognition to the increasingly complex and specialised nature of health and related issues. A more powerful Department of Health with increased resources and better coordination with the Hospital Authority, other government departments, the private medical sector, and academics, could function as the unequivocal leader of a team responsible for the control and prevention of communicable diseases. This 'top-down' approach has to be coordinated with a 'bottom-up' approach whereby the people of Hong Kong are encouraged to feel for the environment, to critically review their personal habits and lifestyle, to understand their own health needs, and to take the initiative in improving personal and public health. This is the Healthy City Concept of the World Health Organization; its development would significantly contribute to the better control and prevention of communicable diseases in Hong Kong.

Where then is the local CDC? If the vision of this paper is shared by all and translated into concrete action, most of the desired functions of a CDC will have already been incorporated into our medical system. The debate on whether a local CDC is needed may no longer be relevant.