

five districts. The key factors for the achievement are the support of the MOHFW, rapid scaling up, its timely and coordinated implementation of programme components specially MDA, dedicated programme team and successful partnership. However, recent Mf prevalence is about 1.2–2.8% in some areas after 8–11 rounds of MDA which was about 12–16% at baseline. Failure to achieve the target may be due to high prevalence at baseline, low drug compliance, lack of motivation.

In spite of resource constraint situation, the MDA is continuing which made it possible to stop MDA in about one fourth of endemic region. Also, it is now critical to analyse the situation in districts why Mf prevalence has not come down to expected level.

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Session: *NTDs in Asia and Pacific: Progress towards Elimination and Control*

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Time: 15:45–17:45

Room: Ballroom C

Schistosomiasis control program in China: Towards elimination

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In China, although the documented record indicates that *Schistosoma japonicum* can be traced back almost 2,000 years ago, its public health impact wasn't fully recognized until 1950s, when over 10 million people were infected and > 300 million people were at risk of infection in 12 provinces. In the 1950s, a national control program was instituted and a cascade of control activities had been followed, resulting in a reduction of human cases to < 1 million half century later and elimination of the parasite transmission in five provinces of Southern China.

The implementation of such integrated programs in some areas has yielded great reward – by 2010 transmission of control of *S. japonicum* has been widely achieved in Sichuan, Yunnan Provinces, the mountainous endemic region, as well as in Jiangsu province, a lake and marshland region, marking a milestone in the history of schistosomiasis control in China. An ambitious proposal has been laid out – to eliminate transmission of the parasite in Sichuan and Yunnan provinces, by 2015, and to expand the success to the rest of country to achieve transmission control at the same year. While applauding such success, public health authorities in China have recognized challenges facing them in trying to achieve this goal. Challenges exist in how to effectively reduce prevalence of infection below 1% (transmission control) toward elimination of transmission and, if successful in certain areas, how to solidify such control achievements.

With great control efforts and achievements gained through the national control program, tremendous research work have been also performed and translated from bench into the field, covering a wide range of areas. Many studies were devoted to understand factors responsible for high prevalence of infection in many areas which provide more information to formulate the control strategies, whereas some more recent work have been focusing on evaluation of integrated control, factors governing transmis-

surveillance and response.

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NTD programs in the Western Pacific Region – Challenges & opportunities

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Room: Lotus 1–4

Pilgrimages and mass migrations

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What constitutes a mass gathering is challenging to define. Some sources specify any gathering to be an mass gathering when more than 1000 individuals attend, whereas others require the attendance of as many as 25,000 people to qualify. Irrespective of the definition, mass gatherings represent large numbers of people attending an event that is focused at specific sites for a finite time.

Ensuring a safe environment and provision of health care during mass gatherings can be equally challenging. Among all mass gatherings, the public health issues, associated with the Hajj are clearly the best reported—probably because of its international or even intercontinental implications in terms of the spread of infectious disease. Hajj pilgrimage, which takes place in and around the city of Mecca occurs yearly over 5 days during the final month of the Islamic calendar, attracts 2–3 million visitors, and is the largest annual recurring religious mass gathering in the world.

Mass gatherings pose many challenges, such as crowd management, security, and emergency preparedness. Stampedes and crush injuries are common, the result of inevitable crowding. Outdoor events are associated with complications of exposure, dehydration, sunburn, and heat exhaustion. Other health hazards arise from lack of food hygiene, inadequate waste management, and poor sanitation. Violence is unpredictable and difficult to mitigate whether the mass gathering is a political rally or a sporting competition. With few exceptions, however, the rates of morbidity and mortality resulting from these hazards are rarely increased outside the event.

The potential for the transmission of highly infectious diseases like typhoid, cholera, viral hemorrhagic fevers, invasive meningococcal meningitis, and influenza during mass gathering events is enormous; since almost 90% of the pilgrims travel by air, the rapid dispersion of diseases around the globe is a distinct and deadly possibility. Returnees may assimilate back into their communities before the incubation period is over, unknowingly spreading microbes to their immediate household contacts and eventually to others.

Global mass gatherings, can lead to global hazards. Mitigation of risks requires expertise outside the specialty of acute care medicine, event planning, and venue engineering.

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Urbanization reshaping infectious diseases

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Since 2007 half of the world population is urban. While in Europe and in the Americas over 70% of the population live in cities, most of the rapid urbanization is now taking place in Asian and African countries, many at yearly pace of 4 to 6%. Urbanization leads to major changes in the environment and lifestyle, with significant consequences for health. Overcrowding, pollution, insecurity, transportation difficulties are among common stress factors encountered in fast growing cities in the developing world. Food habits are modified due to social changes and lack of time, which combined with less physical activity lead to the rapid increase of non communicable chronic diseases (NCDs) such as cardiovascular disease, diabetes and chronic pulmonary disease. NCDs add extra burdens on existing infectious diseases, which remain a leading cause of morbidity and mortality. The urban environment influences infectious diseases' profile. Cities can become incubators where all the conditions are met for outbreaks to occur. While malaria transmission is decreasing, dengue fever and chikungunya are on the rise due to a vector well adapted to urban conditions. In slums and areas with poor sanitation, leptospirosis, lymphatic filariasis, leishmaniasis and diarrheal diseases are still prevalent. When access to clean water and proper sanitation become available, hepatitis A transmission decreases. No doubt urbanization can improve access to basic commodities such as water and sanitation, access to health services and prevention such as immunization and health education. Cities provide numerous resources for disease surveillance, control and prevention that are absent in rural areas. These are incredible opportunities for improving the health of urban dwellers and reduce the impact of infectious diseases.

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Ecological challenges and emerging infectious diseases in SE Asia

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SE Asia is a region undergoing profound ecological changes. Infectious diseases exploit the intersections of biological, social, ecological and technological systems in this regional milieu. Several infectious diseases have exacted heavy public health and economic tolls in recent years. The challenges to regional control of infectious diseases are formidable, and range from understanding and influencing the drivers of disease emergence and spread, through improving public health systems' capacity to anticipate, prevent, contain, mitigate and recover from emerging infectious diseases. This paper will reflect on the factors influencing the emergence and spread of livestock-associated zoonoses, attempt to conceptualise a research agenda, and outline some challenging areas of research that might impact upon public health in a timely manner.

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Epidemiology and natural course of chronic viral hepatitis B in Asia

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Updates on pathogenesis of hepatitis B

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