

Contributions of physicians to government-subsidised disease prevention programmes: an appeal for active participation

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Pneumococcal infection, particularly invasive pneumococcal disease (IPD), has placed a substantial global burden of disease.¹ In Hong Kong, from 2007 to 2015, the incidence rate of IPD increased from 1.7 to 2.9 per 100 000 population.² It is one of the leading causes of disability and mortality, affecting individuals aged ≥ 65 years who are at higher risk of complications and premature death.³ The total number of local residents aged ≥ 65 years has already exceeded one million, accounting for approximately 16% of the whole population in Hong Kong.⁴ Due to the ageing population, the incidence of IPD is expected to rise continuously in the coming years.⁵

Evidence has shown that pneumococcal immunisation can effectively decrease the incidence and mortality of pneumococcal infection and IPD among older adults.^{6,7} An earlier large-scale cohort study demonstrated that immunisation was associated with a significant decrease in the risk of pneumococcal infection (hazard ratio=0.56) among patients aged >65 years.⁸ The pneumococcal immunisation can also lower the risks of both myocardial infarction⁹ and ischaemic stroke.¹⁰ Although pneumococcal immunisation is beneficial for IPD and cardiovascular disease control, the programme participation remained suboptimal worldwide.

The uptake rate of pneumococcal immunisation among older adults was only around 61% in the United States during 2013 to 2014.¹¹ In England, the pneumococcal immunisation coverage among older adults was $<70\%$ during 2014 to 2015.¹² In Hong Kong, only one-third of people aged ≥ 65 years received pneumococcal immunisation.¹³

The Hong Kong SAR Government has launched two pneumococcal immunisation programmes to eligible residents in October 2019: the Vaccination Subsidy Scheme and the Government Vaccination Programme.¹⁴ The Vaccination Subsidy Scheme provided a subsidy of HK\$210 (~US\$27) and HK\$250 (~US\$32) for influenza and pneumococcal immunisation, respectively, to eligible older individuals at enrolled private clinics as a measure

to strengthen the preventive strategy for these diseases. It offers subsidies for both the 13-valent pneumococcal conjugate vaccine and the 23-valent polysaccharide pneumococcal vaccine. The Government Vaccination Programme provides eligible individuals with free pneumococcal immunisation at residential care homes for the elderly, designated centres of the Department of Health, and public clinics or hospitals managed by the Hospital Authority.¹⁴

In addition to pneumococcal vaccine, human papillomavirus (HPV) vaccination is currently available under the Hong Kong Childhood Immunisation Programme, wherein eligible female students may receive two doses of 9-valent HPV vaccine in their primary five and six school years.¹⁵ Other examples of Government-subsidised programmes for disease prevention include cervical cancer screening,¹⁶ colorectal cancer screening,¹⁷ and the Smoking Cessation Programme.¹⁸

In this issue of the *Hong Kong Medical Journal*, Man et al¹⁹ report an 8-year large-scale retrospective cohort study that included 792 adult patients in a major hospital. The authors found that the 30-day mortality rates were 11.5% overall and 24.5% in those patients with IPD. Among 170 patients admitted to the intensive care unit, the in-hospital mortality was 31.2%. The study results indicate that older age, the presence of chronic kidney disease, and disease severity are significantly associated with 30-day mortality. The study is limited by the absence of controls for potential confounders and its retrospective single-centre design; thus the generalisability to other settings may require cautious interpretation. This necessitates future evaluations to explore drug resistance patterns and capsular serotypes of pneumococcus. As claimed by the authors, this was the first and largest-scale investigation on pneumococcal disease in Hong Kong showing the significant burden posed by pneumococcal infection. The study exerts a significant impact on clinical care and resource planning for hospitals, given that up to 33% of IPD

patients require intensive care unit care. In view of the public health impact, the role of pneumococcal vaccination in prevention should be enhanced.

Substantial evidence supports the effectiveness of preventive care and disease screening. A meta-analysis of 26 randomised controlled trials consisting of >73 000 individuals found that HPV immunisation can effectively protect adolescent girls and young females from cervical cancer.²⁰ An international study conducted in eight countries by the World Health Organization found that the cumulative incidence of cervical cancer decreased by 94%, 93%, 91%, 84%, and 64% for a screening interval of 1 year, 2 years, 3 years, 5 years, and 10 years, respectively, among women who were screened before age 35 years.²¹ Screening is also beneficial for women aged 61 to 65 years, and is associated with a decreased risk of cervical cancer (hazard ratio=0.42), contributing to a reduction of approximately 3.3 cancer cases per 1000 women.²² Screening by faecal occult blood test and colonoscopy can effectively reduce the risk of colorectal cancer-related death by 33%²³ and 68%²⁴, respectively. Among patients who smoke ≥ 15 cigarettes daily, smoking reduction by 50% can significantly reduce the risk of lung cancer.²⁵

The effect of physician intervention on disease prevention and screening is well documented in the literature. Participation rates of pneumococcal vaccination are associated with physician-delivered routine vaccine and promotion programmes.²⁶ A study among Japanese primary care physicians found that patients who had pneumococcal vaccination were more likely to have received advice from physicians than those who did not receive such advice (80% vs 21%), and a strong association was shown between physician recommendation and patient participation in vaccination with an adjusted odds ratio of 8.50.²⁷ A study in France demonstrated that patients who received recommendations from trusted family physicians were more likely to participate in HPV vaccination programme.²⁸ In Hungary, physicians effectively motivated approximately 27% of women who initially refused to join cervical cancer screening programmes.²⁹ Moreover, higher non-compliance rates were related to family physicians being foreign, at a younger age, and with a longer distance to the clinic from the patient's home.³⁰ A population-based telephone survey in Hong Kong found that people who were recommended by physicians were 23.5-fold more likely to have colorectal cancer screening uptake than those who did not.³¹ A recent study conducted in Canada using large administrative databases highlighted that the uptake of colorectal cancer tests by family physicians was significantly associated with greater uptake by their patients.³² Another study found that clinicians who specialised in respiratory diseases, thoracic surgery, and cardiology were more

committed to encouraging patients to cease tobacco use.³³

We believe that the study by Man et al¹⁹ acts as a call for more active participation by physicians in disease prevention and screening programmes, and appeal for your support. Physicians play an important role in both primary and secondary disease prevention for asymptomatic individuals, including promotion of lifestyle modifications, vaccination for infectious diseases, and screening for early-stage cancer lesions such as cervical cancer and colorectal cancer.

Author contributions

All authors contributed to the editorial, approved the final version for publication, and take responsibility for its accuracy and integrity.

Conflicts of interest

The authors have disclosed no conflicts of interest.

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