MALAYSIAN INFLUENZA WORKING GROUP

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# Position Paper On Influenza Vaccination In The Elderly

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## Influenza Vaccination In The Elderly

Influenza is a highly contagious viral infection which infects 5-15% of the world population annually. This translates into an annual global burden of nearly 1 billion infected individuals, with 250,000 to 500,000 deaths. It is transmitted via respiratory droplets or through direct contact with infected individuals and contaminated objects. This mode of transmission is very similar to the COVID-19. Influenza is not limited to temperate countries, it also occurs in tropical countries with high temperature and humidity. In these countries, influenza is recorded throughout the year with various patterns of seasonal peak.[1,2]

## Influenza Immunisation Is An Important Public Health Agenda

There are 3 types of influenza viruses circulating in humans - type A, B and C. Of these, only type A and B cause significant disease and outbreaks. Within these viruses, antigenic drifts, and sometimes antigenic shifts, occur in a continual fashion. Hence, different strains of influenza may be predominant during different seasons. Immunity acquired from the previous seasons, either through natural infection or vaccination may not confer enough protection for the currently circulating influenza strains. As a result, it is advisable to renew influenza vaccination annually.

Although most infected persons will recover without any sequelae, a large number of individuals still suffer from this disease due to the extent of its spread. The World Health Organization (WHO) estimates that every year 3 - 5 million influenza cases end up with severe disease~~s~~, leading to significant number of deaths. Most of these deaths occur among the elderly (65 years or older).

There is a good reason to expect that influenza will continue to circulate amidst the COVID-19 pandemic. Indeed, co-infection of influenza and COVID-19 has been reported. How these 2 diseases interact when coexisting is unclear. It is often not possible to distinguish one from the other clinically.

While effective and safe COVID-19 vaccines are yet to be produced in significant quantities, influenza vaccines are readily available for protection against influenza. Widespread influenza vaccination is deemed crucial during the COVID-19 pandemic in order to prevent potentially serious consequences when co-infection occurs.

## The Burden Of Influenza Infection In The Elderly

## (65 Years Of Age And Older)

The health impact of influenza differs between different age groups. For young and healthy individuals, influenza generally does not cause severe disease. However, it tends to be more serious with poor outcomes among the elderly (especially those above 65 years old) and in those with significant comorbidities. The elderly accounts for 54% to 70% of influenza-related hospitalisation and 71% to 85% of influenza-related deaths.[3]

## Immunisation Strategies

The strains of influenza virus in the vaccine predicted for the coming season is usually based on surveillance data obtained from the previous season. The WHO will release these recommendations in February and September each year prior to the production of northern and southern hemisphere influenza vaccines, respectively.

Influenza vaccines have been used since the 1930s.[4] Vaccines are registered and licensed for use in the elderly as trivalent or quadrivalent formulations, with and without the use of an adjuvant.

Trivalent influenza vaccine (TIV) contains inactivated influenza viruses from A(H1N1), A(H3N2) and a B-lineage virus (either Yamagata or Victoria lineage).

On the other hand, the quadrivalent influenza vaccine contains 2 strains of inactivated influenza A and both lineages of influenza B.

Despite the theoretical better coverage of quadrivalent influenza vaccine, WHO does not prefer one influenza vaccine product over another.

## Benefits Of Vaccination In The Elderly

It is common for the elderly to have multiple comorbidities. Influenza vaccinations are effective in reducing incidences of pneumonia and hospital admission. Large scale cohort studies have shown that risk of mortality was reduced by 25% with vaccination. Lower admission rates for stroke and heart failure were also noted for the vaccinated individuals.[5,6] Not only that, it may confer protective effect against acute myocardial infarction.[7]

## Safety Of Influenza Vaccines In Elderly

Information about adverse events after influenza vaccination for the elderly is less well known compared to younger adults and children. In general, influenza vaccines are well-tolerated and safe in the elderly and immunocompromised individuals, with the majority of adverse events resolving within 3 days.

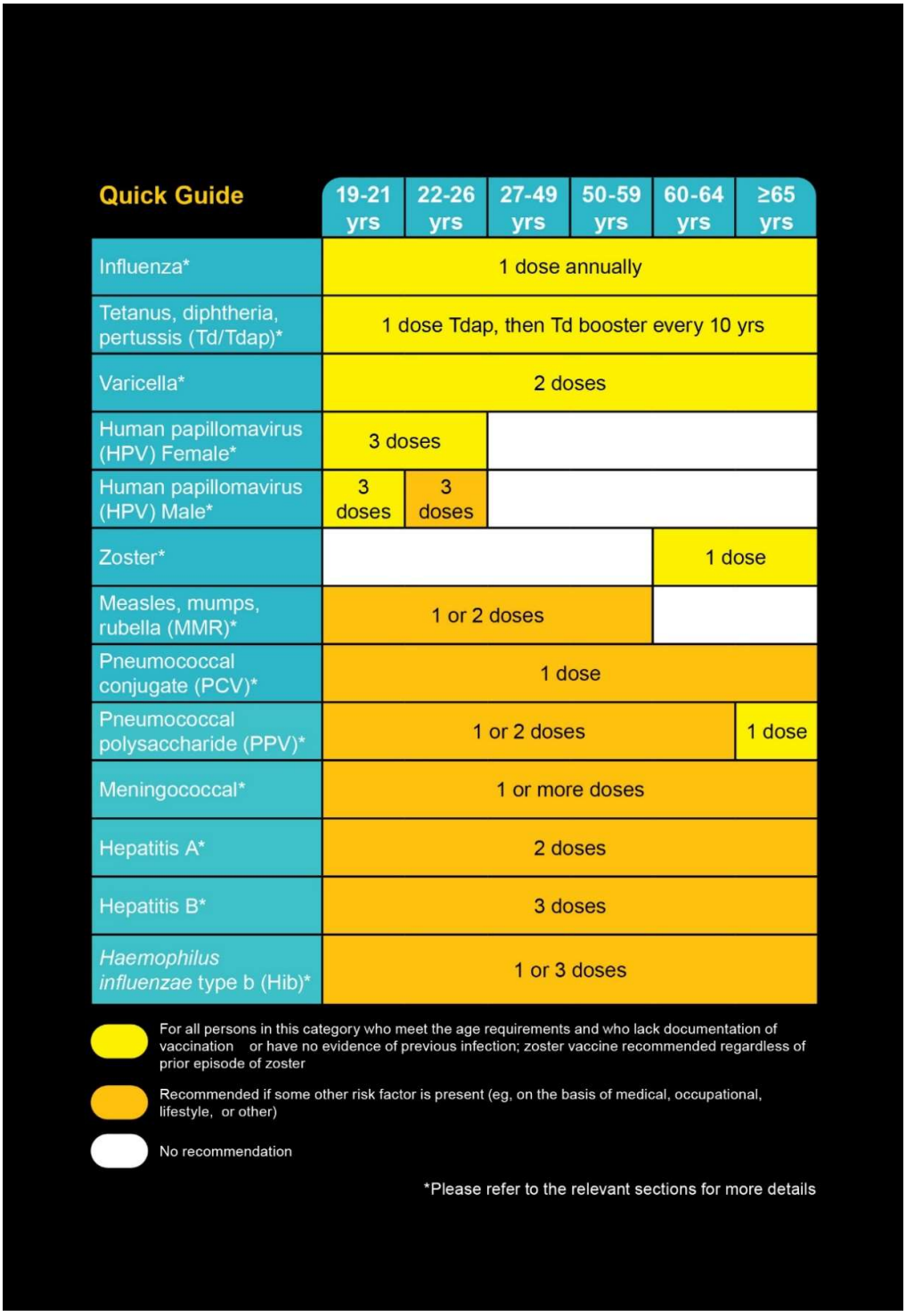
In a large clinical trial, 23% of the patients aged 60 years and older had at least one adverse reaction compared with 14% of the placebo group. This was mainly local reactions (17.5% vaccines vs 7.3% placebo) while no difference (11.4% vs 9.4%) in systemic reactions was observed.[8] Erythema was more frequent following high-dose vaccine compared to the standard-dose and injection-site reaction was more frequent with intradermal compared with intramuscular vaccination. The commonest systemic reactions (not significantly increased compared with the placebo group) within 7 days after vaccination are malaise, fever, cough, coryza or nausea.[9]

There are also no signs of adverse events from concomitant vaccination with other adult formulations of vaccines (pneumococcal or zoster) compared with separate administration in the elderly.[10,11] People with severe egg allergy should be vaccinated under a supervised medical setting.

## Recommendation:

1. Influenza vaccination is safe and effective and should be recommended to all of those aged 50 years old and older
2. Either trivalent or quadrivalent influenza vaccines, with or without the use of adjuvant may be recommended for the elderly
3. Vaccination should be done yearly, with no specific preferred month or season.
4. There is currently no evidence to support or refute the benefits of twice-yearly vaccination
5. Subject to vaccine availability, there is no preference of one influenza vaccine over another
6. Influenza vaccination can be given during the same clinical encounter with other vaccines such as zoster, pneumococcal polysaccharide or pneumococcal conjugate vaccine.

## Adult Immunisation Guidelines



| Quick Guide | 19-21 yrs | 22-26 yrs | 27-49 yrs | 50-59 yrs | 60-64 yrs | ≥65 yrs |
|---|---|---|---|---|---|---|
| Influenza* | 1 dose annually | | | | | |
| Tetanus, diphtheria, pertussis (Td/Tdap)* | 1 dose Tdap, then Td booster every 10 yrs | | | | | |
| Varicella* | 2 doses | | | | | |
| Human papillomavirus (HPV) Female* | 3 doses | | | | | |
| Human papillomavirus (HPV) Male* | 3 doses | 3 doses | | | | |
| Zoster* | | | | | 1 dose | |
| Measles, mumps, rubella (MMR)* | 1 or 2 doses | | | | | |
| Pneumococcal conjugate (PCV)* | 1 dose | | | | | |
| Pneumococcal polysaccharide (PPV)* | 1 or 2 doses | | | | | 1 dose |
| Meningococcal* | 1 or more doses | | | | | |
| Hepatitis A* | 2 doses | | | | | |
| Hepatitis B* | 3 doses | | | | | |
| *Haemophilus influenzae* type b (Hib)* | 1 or 3 doses | | | | | |

For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection; zoster vaccine recommended regardless of prior episode of zoster

Recommended if some other risk factor is present (eg, on the basis of medical, occupational, lifestyle, or other)

No recommendation

*Please refer to the relevant sections for more details

(Malaysian Society of Infectious Diseases and Chemotherapy, 2020, *Guidelines for Adult Immunisation 3rd Edition*)

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