UNIT NO. I

# EMPOWERING THE ROLE OF FAMILY PRACTICE IN VACCINE-PREVENTABLE DISEASES THROUGH HALO

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## ABSTRACT

Vaccination has reduced the disease burden of infectious disease since it was invented.<sup>1</sup> Each person has his or her own unique vaccination needs during the various stages of one's life. What each one needs is determined by one's health, age, lifestyle and occupation at that time.

Strategically, the Centre for Disease Control (CDC) Advisory Committee on Immunization Practices (ACIP) introduced a simple HALO<sup>2</sup> approach to help physicians customise vaccinations for the public with the circumstances and needs of the public in mind.

With the HALO approach, the public is able to discuss with their personal family physician or general practitioner and receive the relevant vaccines to prevent diseases and maintain health.

Keywords: vaccine, immunisation, HALO, health, age, lifestyle, occupation, family physician

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#### INTRODUCTION

Vaccination has proven itself to greatly reduce the disease burden caused by infectious diseases.  $^{1,3}\,$ 

Vaccination schedules for children are now adopted by many countries in the world. In most first world countries, adult vaccination schedules are also making its way to be adopted.<sup>4</sup>

These guidelines and schedules have helped to improve the uptake of vaccines among the young and the elderlies.<sup>5</sup>

In some countries, healthcare systems have introduced subsidies and incentives to encourage adoption.<sup>6,7</sup> In Singapore, most childhood vaccinations have been made freely available at public polyclinics. For those vaccines which are not offered free, parents are able to utilise their Baby Bonus accounts to pay for them.

Adults may also use their Medisave savings to pay for selected vaccines.<sup>9</sup> These vaccines are selected based on the recommendation by the members in the Expert Committee on Immunisation (ECI) at the Ministry of Health (MOH).

LEONG CHOON KIT Family Physician Mission Medical Clinics Tampines Family Medicine Clinic Recently the ECI had also recommended to MOH to offer free Human Papilloma Virus (HPV) vaccines to school going girls attending Secondary One in Singapore.

Despite these efforts, full adoption is still hampered by anti-vaxxer, fake news, ignorance and unaddressed fears and myths regarding vaccination. Public education can be further enhanced to help the public understand the safety of vaccine and importance of disease prevention.

Another important strategy is to devise, adopt and promote a simple strategy such as the Health condition (H), Age (A), Lifestyle (L) and Occupation (O), or HALO approach for short, to aid the busy primary care physician to customise the vaccination needs for their patients.

#### HALO concept and strategy

The HALO concept is designed by the CDC to aid busy physicians to consider the various aspects of their patients' lives when introducing vaccinations. The four areas considered are the patient's health conditions, their age, their lifestyle and their occupations. These four areas will explore the different risks the patients are exposed to and the available vaccines in a practice.

It comes with an easy-to-use chart that can help the physician make an initial assessment decision about vaccinating a patient based on the above four areas.<sup>2</sup>

In many circumstances, the experienced primary care physicians may offer standard vaccinations such as Hepatitis A and tetanus to their patients without deliberately needing to refer to the chart.

However, it is always good to have a standard trend of thinking when offering vaccinations to new patients. One common consideration often missed at primary care level is the immune status of the patients. These include those who are immune-compromised such as those on chronic steroid therapy, post chemotherapy, poorly controlled diabetics and those suffering from HIV infection.

### **Health Condition**

A patient's health condition puts him in a vulnerable position to certain infectious agents. Knowing the health situation and condition at that time will help the practitioner determine the vaccine and protection needed.

Pregnancy is now known to put the pregnant mothers at a more susceptible state to influenza infection and its complications. A booster in the third trimester of the pregnancy will also help boost the mother's DPT antibodies which in turn will help protect the new born against diphtheria and pertussis infection in the first few months of his life.<sup>10-12</sup>

Chronic diseases such as diabetes mellitus, high blood pressure, hypercholesterolaemia, chronic kidney disease, asthma, chronic obstructive lung diseases are just some of the chronic medical conditions that require vaccinations against influenza and pneumococcal infections.<sup>13</sup>

Immunosuppressed states caused by chronic steroid usage, post chemotherapy, HIV infection and diabetes mellitus are valid reasons for vaccinations. However, if their immunity is too suppressed, the recipients may not be able to mount an adequate immune response from the immunisation.

Organ transplant patients are another group of vulnerable patients who will require vaccinations.<sup>14</sup>

# Age

Age is a common consideration for various vaccinations.

Childhood vaccination schedule is widely adopted in many countries and accounted for much of the improvement in health indices for any country.

In recent years, many developed countries have also started to implement and adopt adult vaccination guidelines and schedules.

In Singapore, the adult vaccination guideline was started in 2014 by the professional bodies such as the College of Family Physician Singapore (CFPS), the Society of Infectious Diseases Singapore (SIDS) and various infectious disease institutions such as the CDC in Singapore.<sup>8</sup>

In 2017, Ministry of Health started the Adult Vaccination Schedule <sup>9</sup> and incorporated the essential adult vaccination into the schedule, allowing Medisave reimbursement for eligible adults.

# Lifestyle

Common lifestyle habits such as alcoholism<sup>15,16</sup> and smoking<sup>17</sup> can affect the susceptibility of any person to infection. As such, they are advised to be vaccinated against pneumococcal and influenza infections.

Alternative lifestyle also exposed their participants to various infectious agents that may decrease their immunity to common infections. Some vaccines advised for them include Hepatitis A, Hepatitis B and HPV.<sup>18,19</sup>

Drug users and abusers are the next group to consider for vaccinations. While intravenous drug abusers are now less common in Singapore, drug abusers have turned to newer drugs such as synthetic drugs. They too, will require vaccination against Hepatitis A and B.<sup>20</sup>

# Occupation

In Singapore, there are a few groups of workers who will need special attention.

Healthcare workers  $(HCWs)^{21,22}$  is the first group. It is a common problem in many countries that many HCWs are not vaccinated adequately.

Care givers is a second group of workers who are often neglected for vaccination. Among them, the most common are the domestic helpers who help look after the very young and the very old in our Singaporean families.

A sub group of these care givers include the preschool teachers and the infant and child care centre staff. They can be the reservoir for many viral infective agents.  $^{23,24}$ 

Many Singaporeans travel for their work and leisure.<sup>25</sup> Yet, the vaccination rates among them can be low. It is not uncommon that many fell sick to infectious diseases after returning from their travel.

All Singaporean males serve national service in the uniformed services. They are required to stay in communal living in camps. These services have strict vaccination schedule and protocol to adhere to.

A different kind of communal living here includes nursing homes, orphanages, delinquent homes and reformative centres that may be lacking in vaccination advice and practices.

# Healthcare system National Immunisation Registry (NIR)

Since 2018, the National Immunisation Registry in Singapore has been expanded to include adults.<sup>8</sup>

This central repository of vaccination records from cradle to grave is critical. It helps the practitioner to know the required vaccine that is missed. It also helps the public and the practitioner not to duplicate vaccines and waste resources.

# Adult Vaccination Guidelines and schedule

The adult vaccination guidelines and schedule<sup>8,9</sup> help to reinforce the various vaccinations among the public. It serves as a form of reminder and public education for both the public and the physicians.

Primary care practitioners are also better advised and equipped to convince patients on the various vaccinations.

With Medisave reimbursement for essential vaccines, it helps the public afford the newer vaccines, directly improving uptake and herd immunity.<sup>6,7</sup>

#### Support systems

Besides the option to make use of one's Medisave to pay for the vaccine, the professional bodies also play a huge part in encouraging vaccine uptake and dispelling myths against vaccine.

These professional bodies can be supported by government bodies and pharmaceutical companies. With the endorsement by government bodies and resources from both, the professional bodies can then extend their reach to their members and all members of the public.<sup>26</sup>

Information Technology support in the form of a central registry, a phone application for accessing this registry and providing reminders are equally important.<sup>27,28</sup> Some overseas studies have shown that reminders through Short Message Service have improved uptake of vaccines as well as completion of vaccination schedules.

One fine example in Singapore is the health application run by the Health Promotion Board (HPB). With personal health information readily available at their finger-tips, our public can now make informed choices and decisions on vaccination.

#### **Role of Family Physician / General Practitioner**

The future of all healthcare system lies on the foundation of primary care. Family Physicians (FPs) and General Practitioners (GPs) are among the main players in any primary care system.

FPs and GPs play a critical role in vaccine adoption in the medical front line. They must be well acquainted with the advances and latest guidelines in vaccines.

However, studies have revealed that the quality of care in the areas of providing vaccines is varied and largely dependent on individual practitioners.<sup>29</sup> It is also known that many primary care practices do not stock the entire arsenal of vaccines needed in the community.<sup>30</sup>

Their jobs can be supported and backed up by their professional bodies and governmental bodies. One example is the regular letter of advice and reminder by the Ministry of Health on annual influenza vaccination. It serves as an official recommendation where primary care physicians can use to back up their advice, and also as a reminder for them to stock up on the necessary vaccines in their practices.

## CONCLUSION

Vaccination has significantly reduced disease burden. Primary care physicians like FPs and GPs play a critical role in advising and encouraging uptake of vaccines.

The HALO strategy and tool offers the busy FP and GP an easy-to-use strategy to individualize the myriads of vaccines available to the individual patients according to their health conditions, age, lifestyle and occupation.

# **DECLARATION OF INTERESTS**

The author declares no conflict of interest in relation to this article

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#### LEARNING POINTS

- Vaccination plays an important role in reducing disease burden caused by infective agents.
- Vaccine advice should be individualized.
- The HALO strategy and tool is a useful strategy to navigate the various needs and vaccines required.