

ABSTRACT

Prevention of disease is one of the key functions of primary care. Vaccines have earned their place in preventing communicable diseases. The rate of uptake of vaccines does not always match with knowledge.

There are barriers which the healthcare professionals need to address. In the new era of IT, innovation and policy change, many ideas can be pursued to improve vaccination uptake in the community.

There is a group of our population who will need our special attention to vaccinate. They are the healthcare workers, caregivers, the foreign domestic helpers, the immunocompromised, and the pregnant mothers.

There are many areas we need to work on to improve our vaccination rate. Primary Care Research will provide the evidence and guide the refinement of these programmes.

Keywords: Prevention; Barriers; Enablers; Special Groups; Primary Care Research;

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INTRODUCTION

Prevention of disease is one of the key roles of primary care. As a nation advances, its socio-economic situation improves and, with a better-educated population, both mortality and morbidity rates for communicable and non-communicable diseases also correspondingly decline.

The rates of decline for communicable diseases correspond well with the introduction and acceptance of vaccinations.

Access to previously elusive medical information has now been made easier and faster by the introduction of the internet. However, social media also allow common people to express any medical opinion which they believe to be true, even when without basis.

This leads to unsubstantiated information circulating widely, rapidly, and permanently. The unsuspecting public will be misled by this information. As a result, we are now facing outbreaks of previously controlled infectious diseases such as diphtheria, pertussis, and measles in many parts of the world.

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STANDARD OF PRIMARY CARE SERVICES

Under the WHO Health for All initiative, the healthcare delivery system is divided into primary, secondary and tertiary care. Each of these care components complements one another to deliver the optimal service to the populace.

A mark of quality of any primary care services is often its standard of preventing both communicable and non-communicable diseases. So, in any primary care facility such as a General Practitioner's clinic, one should expect it to promote and provide all forms of preventive advice and services, including vaccinations for children, adults, and special groups.

Some of the candidates within the category of special groups would include caregivers, domestic helpers, pregnant mothers, and immunocompromised patients.

BARRIERS TO VACCINATION

Despite strong evidence supporting vaccination, the uptake is generally weak. This is especially so among newer vaccines.

Vaccines

Some of the barriers faced at the primary care level are the potential side effects of the vaccine, high cost of new vaccine, poor accessibility of vaccines and all kind of myths regarding the conspiracy of vaccines surfacing in the internet and social media. See Table 1 and 2.

Perceptions of cost of vaccine

Healthcare policies such as the use of Medisave and free childhood vaccinations in Singapore have improved affordability. But, at the same time, it has given the public a wrong perception of the real cost of the vaccines. This misperception affects vaccination uptake.

Business models of vaccination

Private primary care facilities in Singapore are run as businesses. All the usual factors affecting the cost of running a business affect the primary care practitioners and determine if the service should be provided.

The short expiry of vaccines, the need and cost of providing a cold chain, and the no-return or non-exchangeable policy makes it costly to provide vaccination services.

Many private primary care providers in Singapore do not charge a consultation and injection fee when they vaccinate their patients. This is thus not a viable business model.

Other requirements

Some vaccines such as the influenza vaccines need to be done on an annual basis. Some may require pre-testing of the antibodies and antigens. Each type of vaccine also follows a different schedule and protocol. This is confusing and makes it difficult for adult patients.

Reminder system

Added to that, most private primary care providers do not operate a reminder or an appointment system. Many patients also do not keep these appointments. Once they miss their appointments, the entire schedule has to be restarted.

Legitimacy

Until four years ago, there was no consensus on adult vaccination. Much of what is done in the adult population is dictated or driven by pharma, their sales and marketing campaigns, and disease outbreaks such as SARS, dengue and flu. Much of it is reactive and not pro-active.

SUGGESTED SOLUTIONS

There are not many studies available to prove any particular solution is superior. However, we can consider some of the following ideas being used in various places.

System Change — Primary Care Network

There are studies demonstrating that a system of recall and reminders improves vaccination rates among children¹. While the same system of reminder and recall has not been studied among adults and has not been conclusively shown to be effective, we can still consider them in our own practices.

In Singapore, we can ride on the existing structure of the Primary Care Networks.

In January 2018, the Primary Care Network (PCN) was started with support from the Agency of Integrated Care (AIC) and funding from the Ministry of Health (MOH). The first task of the PCN is to improve the care of three chronic diseases, namely diabetes mellitus, hypertension, and hypercholesterolaemia.

Vaccinations against influenza and pneumococcal infections are recommended by the Ministry of Health for vulnerable adults such as those suffering from diabetes mellitus and those who are above 65 years old. Although these vaccines do not form part of

the quality markers under the Chronic Disease Management Programme, they can be included by the individual PCN headquarters as their individual key performance index (KPI).

Under the PCN structure, the Primary Care Co-ordinators (PCC) can remind their patients on the need to be vaccinated. They can also help track the clinics' vaccination rates, allowing comparison within the PCN. As part of their routine, the PCC

will also monitor and remind patients to return to the clinics for vaccinations.

In busier clinics, nurses employed by the PCN may also help to administer the vaccines. For those vaccines which require pretesting of antigen and antibody levels, these nurses can also help to take blood for tests.

National Immunisation Registry

The purpose of the National Immunisation Registry is to have a centralised database of the vaccinations received by the public. This registry which is accessible to both patients and practitioners provides an easy access to past vaccination records. This will help the public be interested in their vaccination status. It also allows the practitioners to check and offer booster shots if required.

This registry has recently included the adults in our population. It will need time to prove its worth. The registry will also work well only if every vaccination received by the patients is promptly recorded.

As the National Electronic Health Records (NEHR) system matures and is more widely implemented, all the vaccines administered will be made known to all its users.

Adult Vaccination Schedule

The Ministry of Health in Singapore started an Adult Vaccination Schedule in 2017. The vaccines included in the recommended schedule are now claimable from the national health saving scheme called Medisave.

With additional funds available from Medisave, the newer and more expensive vaccines have now been made more affordable. We shall see if the improved affordability will translate to higher take-up rates.

Ministry of Health — Advice on Vaccination

The vaccination advisory sent out regularly by MOH to Primary Care Practitioners has been useful. It updates practitioners on the latest composition of the influenza vaccines and reminds them of the criteria for vaccination.

MOH also sends out emails every month informing practitioners on the trends of various infectious diseases occurring in Singapore.

Adult Vaccination Guidelines

Since 2014, the Society of Infectious Diseases Singapore, Institute of Infectious Diseases and Epidemiology, College of Family Physicians Singapore, and the chapter of Infectious Disease Physicians have collaborated and published a comprehensive guide to the vaccinations available in Singapore for adults.

Skills Courses and CMEs

The College of Family Physicians Singapore has featured infectious diseases and vaccines regularly in her publications as well as skills courses. These serve as updates for the primary care practitioners. The workshops during the skills courses will also help practitioners familiarise themselves with the various unique situations faced at the primary care level.

Purchase of Vaccines

Vaccines are expensive to stock. Most GP clinics do not have enough volume to benefit from the economies of scale. However, with innovative ideas for procurement maximised and enabled by IT, newer models of delivering vaccines to GP clinics should be explored.

Public Education and Campaigns

Ultimately, the decision to take up any vaccinations is up to the individual. Public education targeting all ages and educational levels must go on throughout the various infection seasons. The channels for this can include public health talks, and information dissemination via the internet and social media. It can also come in the form of lessons and projects as part of a school's health education programme².

Advocacy and professional groups can also chip in to educate the public. In the age of fake news, professional bodies can use their media presence to share evidence demonstrating effectiveness, efficiencies and side effects of the various vaccines. This will help the public stay away from dubious sources of information.

SPECIAL GROUPS

Healthcare workers (HCW) are the ones who are often forgotten when it comes to vaccinations. They are also often the ones who are most vulnerable but most resistant to the adoption of vaccinations.

Primary care providers are the first point of contact and line of care to many, including foreign domestic helpers, caregivers to the very young and the elderly, the immunocompromised in the community, as well as expectant mothers. They can be a conduit for many infectious agents to these groups.

Besides the primary care providers, caregivers and foreign domestic helpers are often the ones introducing pathogens to the ones they look after. Vaccinating them will reduce a significant source of pathogens.

Working with our specialist colleagues, we can administer vaccines to the stable but potentially immunocompromised patients in the community. This is a difficult group of patients to help because the timing of vaccinating them is important. However, administering the appropriate vaccines at the right time can be vital to the patients.

Finally, expectant mothers are now known to be vulnerable to the influenza viruses. Primary care practitioners should offer influenza vaccinations, among others, during pre-pregnancy visits and family planning visits. As there is a resurgence of diphtheria and pertussis in some regions in the world, it is now recommended that expectant mothers be given boosters for DPT during the third trimester of the pregnancy.

PRIMARY CARE RESEARCH

Primary care research is lacking in many areas, including the effectiveness of various programmes in Singapore. We need to spend some effort in collecting and publishing some of these data on the above suggestions. With more evidence, we can sharpen our promotion efforts. On the other hand, we will also be able to trim away programmes that have been proven to be less effective.

CONCLUSION

Vaccines have earned their place in preventing communicable diseases. The rate of uptake of vaccinations do not always match with the knowledge. There are many areas we need to work on to improve our vaccination rate. Primary care research will provide the evidence and guide the refinement of these programmes.

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you can do to improve adult

Table 1. Barriers to vaccine uptake

Vaccines	New vaccines Side effects of vaccines
Disease	Disease not perceived to be imminent
Healthcare policy	Affordability
Internet and social media	Hard to verify truth and myths Anti-vaccine lobby groups
Public	Poor public education and insights into medical information as a whole
Business	Difficult business model

Table 2: Solutions to improve vaccine uptakes

Healthcare policy	Adult vaccination schedule allowing medisave claims National Immunisation Registry extended to include adults Regular circulars and directives on immunisation Reports on infection surveillance
System	Primary care network (PCN) allows allied health professionals to promote and administer
References	The Adult Vaccination Guidelines helps to give practitioners the legitimacy to vaccinate
Professional	Skills courses and updates are useful
Public	Campaigns and marketing strategies Public education Health education in schools
Business	A more friendly business environment and system will be helpful
Research	Primary care research should be embarked to demonstrate its effectiveness and efficiency