

A strategy to make COVID-19 vaccination more accessible to the elderly

Dear Editor,

Singapore embarked on the COVID-19 National Vaccination Programme in early 2021. The main modality employed to achieve the mass vaccinations has been the Vaccination Centres (VCs). These are dedicated facilities created with the sole purpose of providing the public with safe and convenient access to vaccination services.

While the VCs served their function well for most of the resident population, there is a small proportion of individuals who face challenges in going to the VCs for their vaccinations. These individuals are often part of a vulnerable section of society, and hence, there is an even greater impetus to ensure that vaccination services are readily available to them. To address this need, mobile teams were established to bring vaccination services to the doorstep. The concept of mobile teams providing vaccinations is not new, and has been shown to be effective in improving vaccination rates within the community at large, as well as in specific groups such as healthcare workers.^{1,2}

The first Mobile Vaccination Team (MVT) was formed in December 2020 under the purview of the Ministry of Health (MOH), Singapore. While the concept of MVTs has been developed by MOH and their deployment remains centrally managed, these teams are set up and run by private medical service providers. An MVT is led by a registered medical practitioner, and can be deployed in 2 configurations (determined by the projected demand for vaccination services at the chosen site). A full team comprises 4 registered nurses and 3 support staff, while a subteam comprises 1 registered nurse and 1 support staff. A fully configured MVT can vaccinate up to 150 individuals per day.

The Home Vaccination Team (HVT) is a small vaccination team that can be deployed directly to individual residences. This allows the provision of vaccination services to even the most vulnerable persons. A HVT comprises only 2 team members: a registered medical practitioner and a registered nurse. The vaccination capacity of a HVT is extremely limited, and is usually reserved for individuals who are homebound or have significant mobility issues. A HVT can be deployed to up to 12 different residences per day, and the number of persons vaccinated will depend on the number of eligible persons per household visited.

In the initial period, the first MVT deployment was to a nursing home in Buangkok Green Medical Park on 12 January 2021, while the first HVT deployment was to a personal residence on 10 May 2021. Following this, the MVTs were deployed to other nursing homes to assist with on-site vaccination of the residents. This was then expanded to provide on-site vaccinations for major government agencies, statutory boards and other institutions such as the Health Sciences Authority, Ministry of Communications and Information, Singapore Prisons Service, etc. There was also limited deployment to shopping malls prior to the introduction of Vaccination-differentiated safe management measures (VDS). VDS is a set of guidelines that define the safe management measures that can be accorded to individuals who are fully vaccinated. It was first implemented on 10 August 2021.³ Such deployments were planned as a result of a direct request to MOH for vaccination services on-site.

Eventually, the MVTs were deployed to the heartlands to help to encourage vaccinations in specific townships, which were lagging behind in terms of overall vaccination rate. These townships were identified through a combination of data obtained from national databases, as well as feedback from grassroots organisations and local community leaders. For on-site vaccinations, the requesting organisation would provide a suitable space for the deployment, such as a multipurpose hall or function room. Deployments to the heartlands are typically to community spaces such as Community Clubs, Residents' Committees, and even void decks or neighbourhood pavilions within blocks of Housing and Development Board (HDB) flats where the majority of the Singapore population reside.

During each deployment, the COVID-19 vaccines are kept in a high-quality cooler box, thus allowing the vaccines to be maintained at the required temperature of 2–8°C for about 9 hours. A temperature logging device placed within the cooler box provides real-time temperature monitoring and also serves as an alert to any temperature excursions. The main challenge faced by the mobile vaccination teams was optimising supply-and-demand matching. This was largely overcome by keeping accurate and up-to-date nominal rolls of the intended vaccinees (for on-site vaccinations), and ensuring good ground engagement and publicity to the residents at the planned sites of deployments (for MVTs deployed to HDB heartlands).

Table 1. Percentage of COVID-19 vaccine doses administered by Home Vaccination Teams (HVTs) and Mobile Vaccination Teams (MVTs) from 30 December 2020 to 30 March 2022

Age, years	Dose of vaccine administered	HVTs, %	MVTs, %	Combined total, %	Overall national vaccination rate, %
≥80	First	3.2	5.9	9.1	94.6
	Completed primary series	3.3	5.6	9.0	93.9
	Booster 1	3.0	4.1	7.2	78.1
70–79	First	0.6	2.0	2.5	96.5
	Completed primary series	0.6	1.9	2.5	96.2
	Booster 1	0.6	1.7	2.3	85.7
60–69	First	0.2	1.1	1.3	96.9
	Completed primary series	0.2	1.0	1.2	96.7
	Booster 1	0.2	0.9	1.1	87.3

Values for “completed primary series” comprise individuals who had completed vaccine combinations requiring ≥ 2 doses (e.g. Sinovac-CoronaVac 3-dose primary series).

Our records show that the elderly primarily benefited from the mobile team deployments (in particular, persons aged ≥ 80 years). For the period 30 December 2020 to 30 March 2022 and for all persons aged ≥ 60 years, the HVTs and MVTs contributed to 1.1–9.1% of all doses administered, inclusive of primary series and first booster doses (Table 1).

The percentage of individuals vaccinated by the HVTs and MVTs largely corresponds with the national vaccination rate. A possible reason for the decline after the first dose may be that some individuals opted to receive subsequent doses at the VCs, instead of waiting for the opportunistic deployments of the MVTs. Furthermore, as the number of VCs increased over time, visiting a VC gradually became more convenient. The likelihood of this reason may be further supported by the percentages of vaccines delivered by the HVTs that remained largely unchanged for the respective age bands, as we do not expect the mobility status of this group of residents to change significantly over time.

While the overall fraction of the elderly vaccinated by the mobile HVTs and MVTs is not very large, these individuals are at the highest risk of complications from COVID-19 infection. Each elderly person vaccinated contributes to the protection of one at-risk person from hospitalisation and severe disease.^{4,5} The HVTs and MVTs have brought vaccinations closer to the elderly and will continue to play an integral role in our vaccination capabilities going forward.

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