



Setup of SGH COVID-19 Vaccination Clinic @ Bowyer

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Aim

To support national COVID-19 vaccination effort, catering to staff and high risk patients.

Background

In Dec 2020, Singapore started providing COVID-19 vaccination for healthcare and essential workers. Subsequently, in Apr 2021, this was extended to Singapore Citizens, Permanent Residents and Work Pass holders. In order to support the national efforts, SGH was tasked to offer COVID-19 vaccination to patients. Doctors will enroll their patients for COVID-19 vaccination during their outpatient visits based on risk profile. The vaccination team subsequently expanded the service to accept referrals from inpatient wards for suitable patients that fulfill vaccination criteria.

The Hunt for a suitable location

The team started the hunt for a possible location to setup COVID-19 Vaccination Centre. 3 options within Outram Campus were shortlisted. They were Ward @ Bowyer (Ward 88), ex-LIFE Centre and Singhealth Tower Function Room.

There were many considerations for the venue selection. It must be easily accessible to patients, well ventilated, spacious and able to segregate into 4 different zones. These main zones are Registration, Vaccination, Observation and Discharge. Patients at each zone require different levels of care and were to be handled by different groups of staff. Other planning requirements include catering for essential areas such as Vaccine Preparation Room, Sick Bay, Resuscitation Room and plan out an Evacuation Route. Compliance to safe management measures (SMM) must not be neglected as well. The COVID-19 Vaccination Clinic was to be created with a high level of safety standards and operational readiness so as to cater to the needs of our patients.

Ward @ Bowyer was eventually selected as the venue. Whilst it had the space required for SMM and segregation of patients, it was designed as a ward along with the beds which required us to innovate with the use. However the existing physical infrastructure and equipment can be reused, there was sufficient space to accommodate the number of vaccination stations to meet the expected capacity required with allowances to expand further if needed (117 Seats with 4 Wheelchair Bays).

Setup of Clinic

Early engagement with respective SGH stakeholders namely Facilities Management & Engineering (FME), Environmental Services (ES), ALPS Non-Pharma and Pharma Logistics (ALPS), Infection Prevention & Epidemiology (IPE), Workplace Safety & Health (WSH), Security, Info Tech (IT), Finance, Human Resource (HR), Nursing, Specialist Outpatient Clinic (SOC) and Singhealth Facilities Development (FD) were essential for the setup and operationalization of the COVID-19 Vaccination Clinic. Table 1 shows the collaborative roles of the respective stakeholders.

Facilities Management & Engineering	<ul style="list-style-type: none"> Removal of beds to create vaccination stations Installation of partitions to create wheelchair-friendly vaccination stations Installation of handrub holders at various locations Demarcate floor markers for segregation of patients Installation of privacy screens into rooms Installation of additional power points for equipment at respective locations Installation of fans for extra ventilation Installation of handrail in each cubicle of the common washroom Installation of locks for toilets located in the different zones Fire Safety training 	
Environmental Services	<ul style="list-style-type: none"> Daily housekeeping Daily wipe down of vaccination stations, waiting & observation areas chairs, self-registration stations, computer terminals Wipe down all areas of Ward 88 prior to the start of vaccination clinic Reinstate general waste and biohazard bins in the disposal room Wipe down of vaccination station after each isolated case Pest control 	
ALPS Healthcare	<ul style="list-style-type: none"> Issuance and top-up of medical and non-medical supplies Procurement of non-standard items 	
Infection Prevention & Epidemiology	<ul style="list-style-type: none"> Survey of clinic setup and provide areas for improvement Regular audits of staff and compound 	
Workplace Safety & Health	<ul style="list-style-type: none"> Survey of clinic setup and provide areas for improvement Regular audits of staff and compound Ensure compliance of SMM and Workplace Safety 	
Security	<ul style="list-style-type: none"> Facilitate and reprogram card access to Ward 88 operational hours Patrol Ward 88 and compound exterior Provide CCTV coverage to important areas 	
Info Tech	<ul style="list-style-type: none"> Configure Citrix SCM to document and print certification for COVID-19 vaccination Installation and reconfiguration of IT equipment for vaccination clinic operations Installation of additional network points Provide on-site support 	
Finance	<ul style="list-style-type: none"> Creation of Organization Unit and setup in Outpatient Administrative System (OAS) Creation of service code for COVID-19 Vaccination Approval of unbudgeted funds Facilitate procurement of essential items, equipment and installation for the facility Reconciliation of monthly expenses 	
Human Resource	<ul style="list-style-type: none"> Hiring of temporary staff 	
Doctors & Nursing	<ul style="list-style-type: none"> Doctors screen for cases with possible contraindications and attend to patients with post-vaccine adverse reactions Provide nursing manpower as vaccinators 	
Specialist Outpatient Clinic	<ul style="list-style-type: none"> Setting up of directional signage Creation and maintenance of appointment resource Administrative support 	
Facilities Development	<ul style="list-style-type: none"> Facilitate on procurement process of sheltered walkway Installation of sheltered walkway 	

Table 1: Various collaboration with SGH and Singhealth stakeholders

Due to the nature of COVID-19 vaccine, a 30-minute observation period was required. The team explored ways to error-proof this process and tap on existing resources and IT systems. A solution was found using the cluster 1-Queue (1Q) system where patients transferred to the "Observation" station but could not be called and discharged until a 30-minute period has elapsed. To further error-proof the process, such patients who can be discharged are highlighted in a different colour (Figures 1 & 2). For patient safety, this feature ensures a mandatory post-vaccination observation.

Complete

Complete & Call Next

Call Next

Missed Queue

Hold

Requeue

Message

Adhoc call

Call Nurse

E-Charge

Waiting (5)

Pending (0)

Missed (0)

Hold (0)

Upcoming List

Completed List

Grab Queue













Action	Service Station	Q No	NRIC	Name	Patient Alert	Appt Time	Reg Time	Transferred From	Transfer Time	Check-in Time	Time to Arrive	Payment Class	Resource	Appointment Remark
  	Vaccination Recovery (30) AM	A4417				10:40	08:34	Vaccination Room (V)	08:44	08:44	10:40	SUB	VACCINATION CLINIC @ BOWYER	Dose 1
  	Vaccination Recovery (30) AM	A3803				08:38	08:38	Vaccination Room (V)	08:45	08:45	08:30	SUB	VACCINATION CLINIC @ BOWYER	1st dose
  	Vaccination Recovery (30) AM	A3970				08:40	08:39	Vaccination Room (V)	08:49	08:49	08:40	SUB	VACCINATION CLINIC @ BOWYER	Dose 1
  	Vaccination Recovery (30) AM	A5718				09:10	08:51	Vaccination Room (V)	08:58	08:58	09:10	SUB	VACCINATION CLINIC @ BOWYER	1st Dose

Figure 1: 1Q system. Observation station screen displaying different colours.

Complete

Complete & Call Next

Call Next

Missed Queue

Hold

Requeue

Message

Adhoc call

Call Nurse

E-Charge

Waiting (1)

Pending (0)

Missed (0)

Hold (0)

Upcoming List

Completed List

Grab Queue

Action	Service Station	Q No	NRIC	Name	Patient Alert	Appt Time	Reg Time	Transferred From	Transfer Time	Check-in Time	Time to Arrive	Payment Class	Resource	Appointment Remark
<div><div><div></div><div></div><div></div></div></div>	W88, Monitor (30mins)													

Message

Has not fulfilled the minimum duration.

OK

Figure 2: Error message when 30-minute duration is not met.

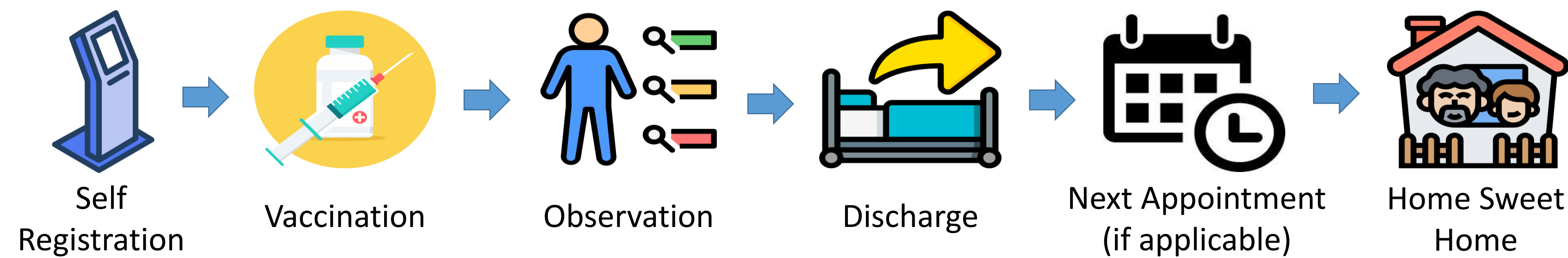


Figure 3: Patient's Journey at SGH COVID-19 Vaccination Clinic @ Bowyer




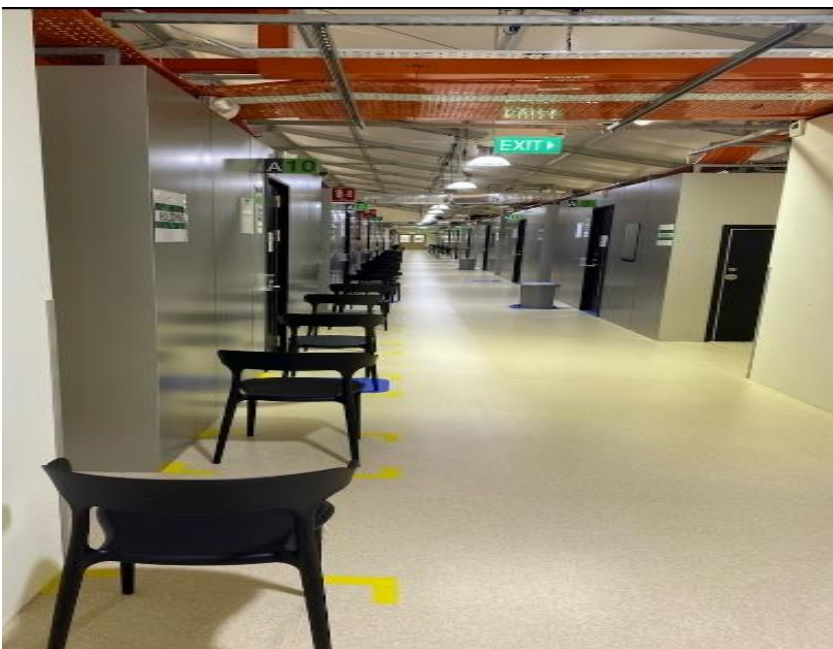










Registration		Exit	
			
Self-Registration Station	Sheltered walkway	Exit to DMC	
Vaccination Zone			
			
Holding Area	Vaccination Waiting Area	Vaccination Room	Wheelchair Vaccination Area
Observation & Discharge			
			
Observation Zones		Discharge Counter	
Doctors & Nursing Stations			
			
Medical Officer Room	Resuscitation Room	Sick Bay	Preparation Room

Figure 4: Key service areas in SGH COVID-19 Vaccination Clinic @ Bowyer

Results

SGH COVID-19 Vaccination Clinic was setup and operational in 10 working days. We were able to provide a total capacity of 520 vaccinations per day. We had given a total of 28,028 doses between Mar'21 to Jun'22 for our patients and staff.

Conclusion

The patient journey was made simple and seamless for patients coming for vaccination. This was achieved through careful planning of the setup of the clinic and with advice from MOH and SingHealth Vaccination Operations Group (VOG). The process to setup the SGH COVID-19 Vaccination Clinic was not an easy one. Many current hospital processes had to re-engineered to cater to the requirements by MOH. By working as a multi-department team, we were able to create a clinic with a system to cater to staff and patient vaccinations whilst ensuring that all patients' needs and expectations are well taken care.