



Singapore Healthcare Management 2022

# New Model of Care – Virtual Ward for Continuity and Remote Patient Care

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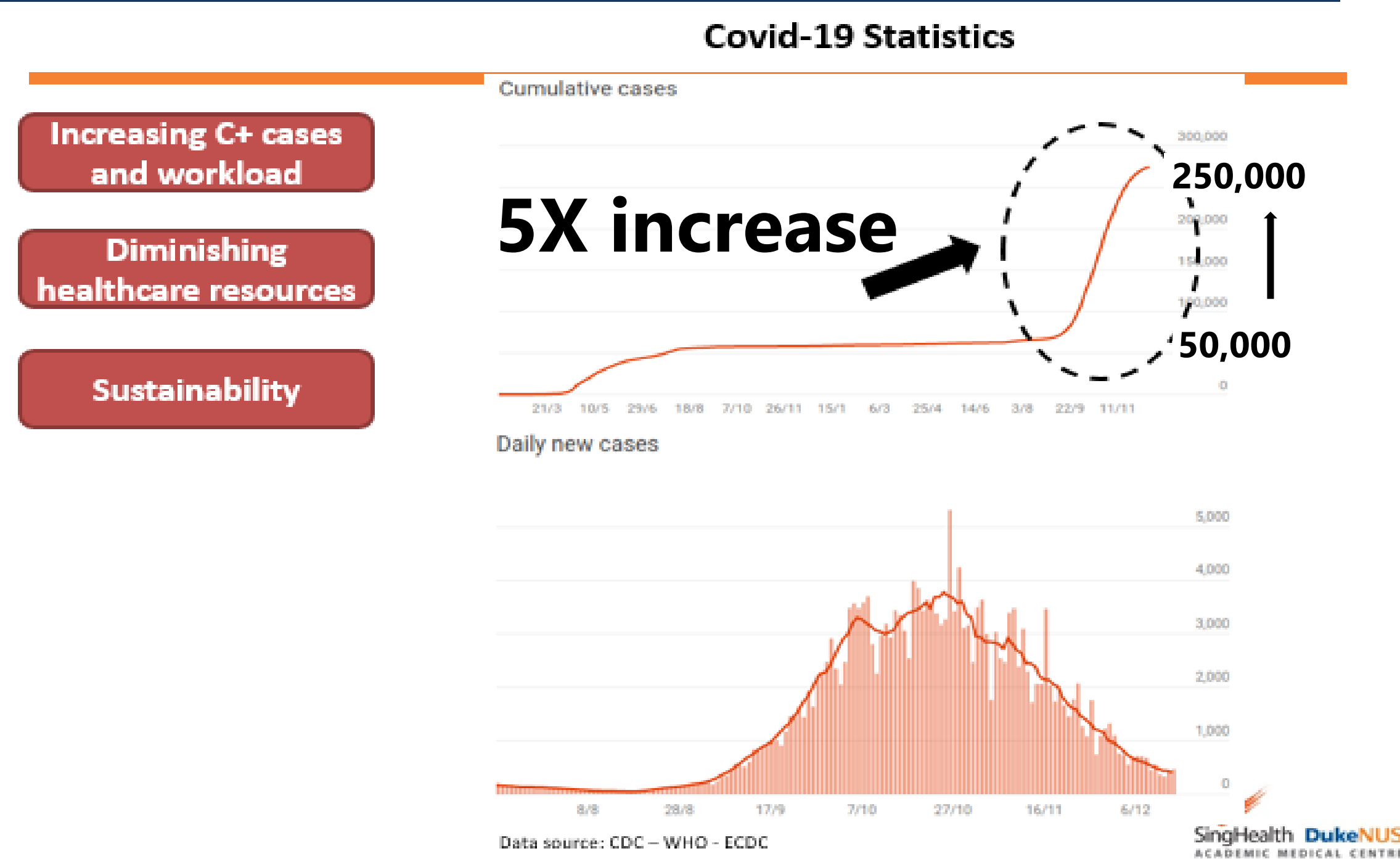
## BACKGROUND

At the peak of the ongoing COVID-19 pandemic, the exponential demand for diminishing healthcare resources have catalysed the SGH@Home COVID **Virtual Ward, an effective and accessible home-based recovery programme** that enables COVID-positive (C+) patients who do not meet the eligibility criteria for standard home recovery programmes to recuperate in the comfort of their homes.

The enhanced Doctor COVID solution comprising **(a) FormSG** for onboarding, symptoms and vital signs gathering, **(b) Dashboard** for patient monitoring, and **(c) Telegram bot** for communication, engagement and education of enrolled patients.

This was agilely developed by the multidisciplinary team comprising personnel from Singapore General Hospital (SGH), Singapore Health Services (SingHealth), and the Agency for Science, Technology and Research's Institute of High Performance Computing (A\*STAR/IHPC) **to serve medically complex C+ patients in just 3 weeks from the formation of team**, while **ensuring the solution is interweaved with the streamlined operational workflow processes and making it sustainable.**

## Need for Home-based management of Complex C+ cases



## AGILE METHODOLOGY

- **REQUIREMENTS GATHERING** – Identify project goals and deliverables.
- **EXPLORE & DESIGN** - Review current workflow processes, developed a set of criteria to identify eligible patients who would benefit from the new model of care – Virtual Ward.
- **DEVELOP & ITERATE** – Continuous improvement to refine and close gaps in order to satisfy evolving needs.
- **DEPLOY & REFINE** – Identified gaps that need to be addressed.

## RESULTS & BENEFITS

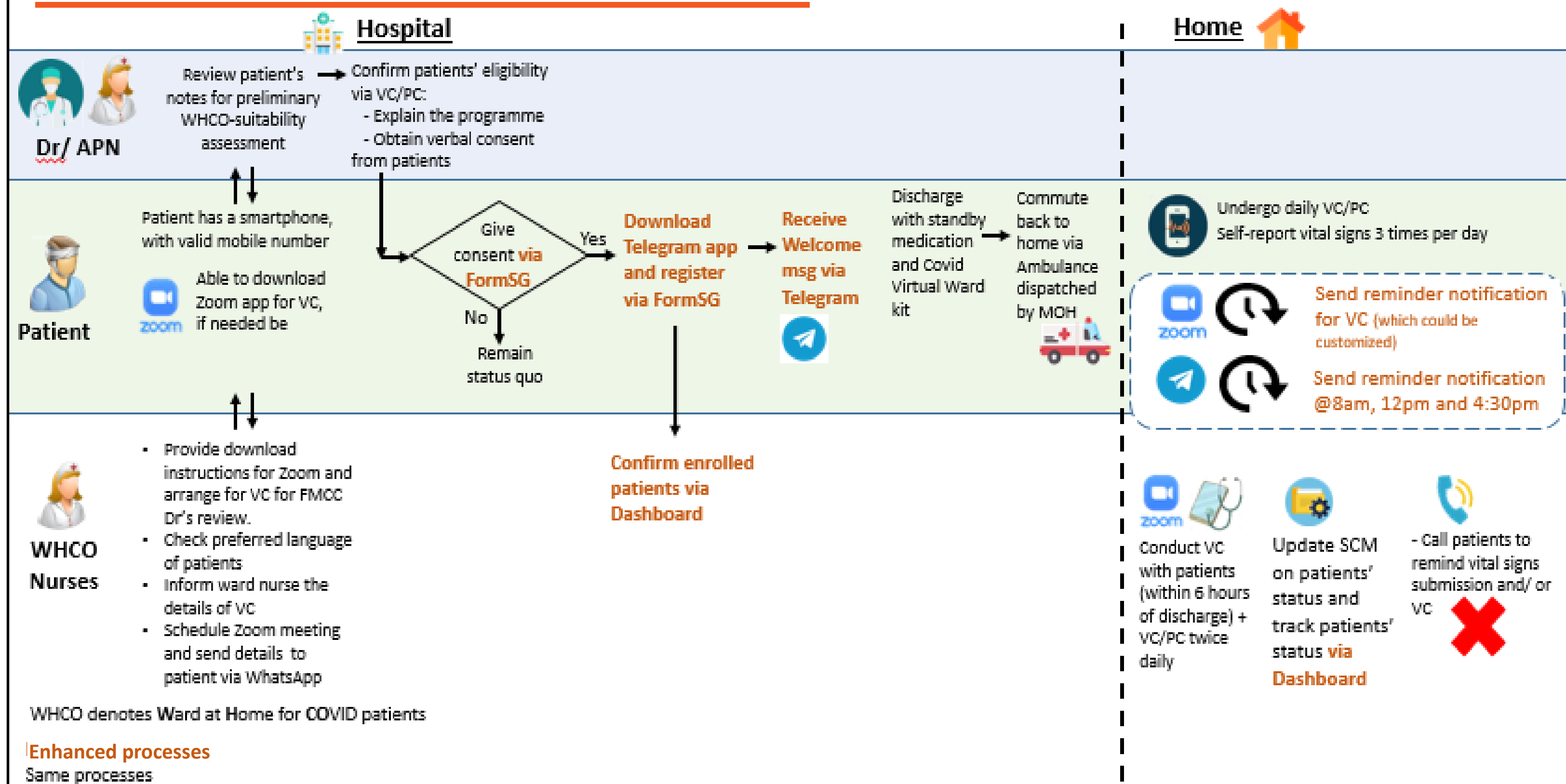
- Improved productivity, with
- ✓ **Patient Consent is digitised and easily retrievable**
- ✓ **Eliminates need to manage patient enrolment manually via Paper / Excel spreadsheet**
- ✓ **Eliminates need to remind patients via text messages and call thus allow healthcare workers to focus on more urgent and higher value added activities**

Within 7 months of project deployment (as of 31 May 2022), and despite of limited healthcare resources, the SGH@Home has:

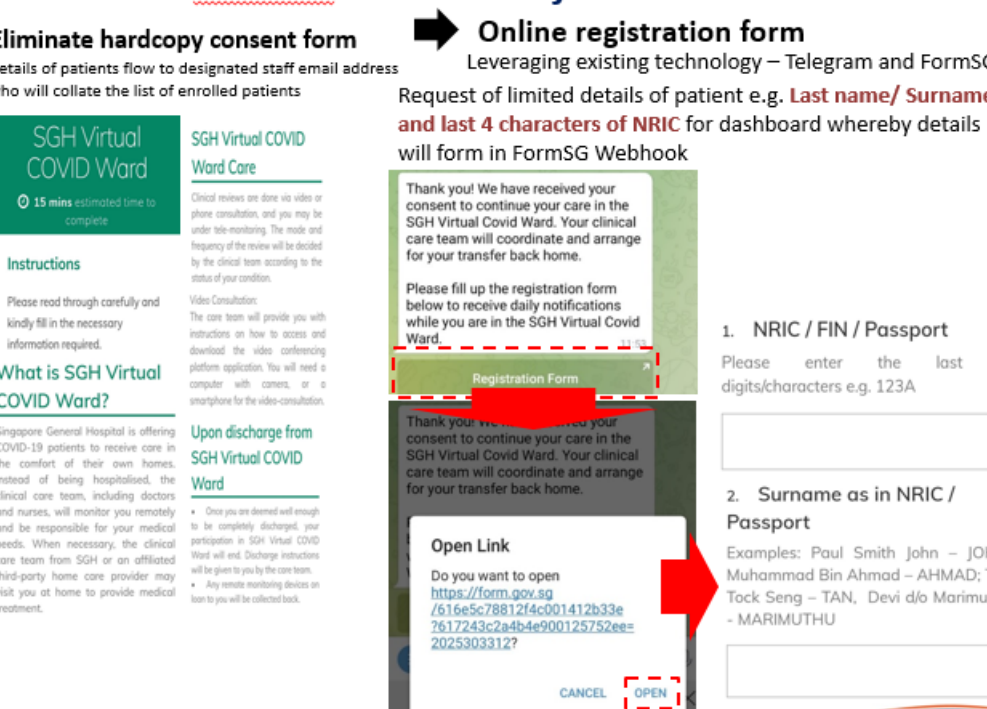
- ✓ **Benefitted 635 patients (as well as their caregivers)**
- ✓ **Gained manpower productivity of 102 man days**
- ✓ **Saved of over \$4.1M from 4,151 bed days**
- ✓ **Conducted over 1,000 video-consult sessions**
- ✓ **Enabled upscale of Virtual Ward capacity**
- ✓ **Facilitated early inpatient discharge**
- ✓ **Improved satisfaction**
- ✓ **Streamlined workflow processes**

**as well as deepen collaboration spirit with partner**

## Streamlined Workflow Processes



## Enhanced DrCovid for Scalability of Virtual Ward



Real time registration, vital signs submissions and automated reminder notifications, interfaced with user friendly dashboard

**“Specially thanks to Doc Grace and Nurse Sharon care during my IO at home. I have been well taken care of... they monitored my condition very closely and provide help when my condition not in stable condition” (Patient 001, Female)**

**“SGH provided very good care and service from the time I was hospitalised to the time I was discharged...The team provided efficient care, helped me recover and prevented my condition from deteriorating.... And followed up on me closely during my home recovery period” (Patient 002, Male)**

## CONCLUSIONS

SGH@Home COVID Virtual Ward initiative has leveraged the original Doctor COVID<sup>4</sup> to better reach out, engage and care for non-Covid-19 patients. The initiative not only benefitted patients, their caregivers and saved scarce isolation bed days in SGH during the pandemic but reduced burnout experienced by healthcare workers who have been fighting against COVID-19 since 2019. **With the streamlined workflow processes, 635 patients had benefited, 102 man-days saved and 4,151 bed days (~\$4.1M) saved within a short span of 7 months.**

The initiative has also **'future-proofed' workflow processes even as new COVID-19 variants surface.** Further, it has been scaled to other healthcare institutions and work is in progress to adapt this model of care for other use cases, making the entire workflow processes sustainable.

<sup>4</sup> Doctor COVID is a Telegram bot first developed in 2020 to improve operations and care for multilingual C+ patients admitted to Community Care Facilities.