Tan Tock Seng Hospital Pharmacy Telehealth Initiatives

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BACKGROUND

Pharmacy has adopted Telehealth in its various clinical services since 2020:

- Blood Pressure (BP) Remote Monitoring
- INR (International Normalised Ratio) Remote Monitoring
- Smoking Cessation Clinic (SCC) Remote Monitoring

Patients on BP medications, Warfarin (a blood thinner that is dose-adjusted using INR), or smokers often require weekly or even fortnightly clinical care. Telehealth services can thus ease patient's care journey. Face-to-face (F2F) visits can be cumbersome and costly to both patient and healthcare. Hence, there is a need to prove the effectiveness of these services to improve the uptake of pharmacy telehealth services.
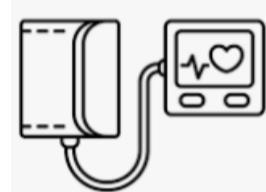
OBJECTIVE

To investigate the effectiveness of Tan Tock Seng Hospital (TTSH) Pharmacy Telehealth initiatives.

METHODS

The clinical outcomes for BP Remote Monitoring, INR Remote Monitoring, and SCC Remote Monitoring were compared to their respective face-to-face (F2F) visits.

BLOOD PRESSURE REMOTE MONITORING

At 2-month follow up, the mean reduction in systolic BP (SBP) was lesser for hypertensive patients at the doctor's F2F visits as compared to those attending the BP Remote Monitoring service.

| N = 31	Average BP at the start of follow-up	Mean SBP reduction at the end of 2 months
F2F visits	162/78 mmHg [BP range: 142-212/67-101 mmHg]	4 mmHg
BP Remote Monitoring	164/86 mmHg [BP range: 102-245/61-125 mmHg]	31 mmHg

INR REMOTE MONITORING

The percentage within therapeutic range for INR was comparable between F2F visits and those attending the INR Remote Monitoring service.

Percentage within therapeutic range for INR	Year 2021	Year 2022	Year 2023
F2F visits	63.6%	64.8%	62.7%
INR Remote Monitoring	66.9%	60.3%	66.7%

Benefits of Remote Monitoring (RM): Time Saving

Per patient: Typical wait time for a F2F Anticoagulation Clinic (ACC) consultation

ACC pharmacist consultation wait time: **14.4mins** (2020)
+
Dr approving prescription: **≥ 30mins** (2017)
+
Pharmacy wait time: **≥ 30 minutes** (2020-2021)
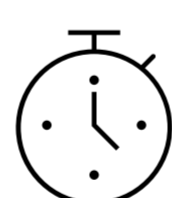
RM patients are seen at allocated timing and medicines are delivered to them. This reduces the need to wait for consultation and medication.

Average time saved per patient: **74 minutes per visit**

SMOKING CESSATION CLINIC REMOTE MONITORING

The quit rates and reduction rates for smokers attending F2F visits and SCC Remote Monitoring service were comparable at 3-month and 6-month.

N = 25	F2F visits	SCC Remote Monitoring	OR (95% CI)
Quit rate at 3 months, n (%)	4 (16)	3 (12)	0.716 (0.143-3.589)
Quit rate at 6 months, n (%)	4 (16)	6 (24)	1.658 (0.405-6.785)
Reduced rate at 3 months, n (%)	11 (44)	6 (24)	0.402 (0.120-1.349)
Reduced rate at 6 months, n (%)	8 (32)	9 (36)	1.195 (0.370-3.858)

CONCLUSION

TTSH Pharmacy Telehealth initiatives were effective and demonstrated **Better Care** and **Better Health** (patients achieved BP target goals, therapeutic INRs which translated to lower risks of bleed and thrombus formation, and smoking cessation), and **Better Value** (patients received timeliness care at their convenient time and comforts of own home and reduced indirect costs such as transport cost) when compared to F2F visits.

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