

Medication Clinic For Transition of Care From Hospital to Polyclinic



Dr. David Ng Wei Liang, Clinic Head, Toa Payoh Polyclinic
Lim Li Ching, Deputy Director, NHG Pharmacy
Angie Lim, Senior Executive, NHG Pharmacy

Mission Statement

To sustain the improved reduction of prescribing near-misses by 50% from baseline and 100% resolution of Drug Related Problems (DRPs) for patients transiting from hospitals to polyclinics through Medication Clinic in Toa Payoh (TPY) Polyclinic.

We also aim to replicate the success of the Medication Clinic service to the other polyclinics to provide optimal patient care in the central region of Singapore within 6 months after the pilot.

Team Members

	Name	Designation	Department
Team Leader	David Ng Wei Liang	Clinic Head	Toa Payoh Polyclinic
	Lim Li Ching	Deputy Director	Pharmacy Practice, NHG Pharmacy
	Lim Hui Li, Angie	Senior Executive	Pharmacy Practice, NHG Pharmacy
Team Members	Tracy Gan Seok Bee	Deputy Director	Operations, Service Leadership & Patient Safety
	See Kheng Shiong Joeshin	Executive	Contact Centre, NHG Polyclinic
	Cheryl Char Wai Teng	Senior Pharmacist	NHG Pharmacy (Hougang Polyclinic)
	Tan Shu Ying Valerie	Senior Pharmacist	NHG Pharmacy (Hougang Polyclinic)
	Lee Yanqun Evonne	Sr Pharmacist (Clinical)	NHG Pharmacy (Ang Mo Kio Polyclinic)
	Ma Yuet Ting	Senior Pharmacist	NHG Pharmacy (Toa Payoh Polyclinic)
	Yeo Li Nee	Senior Pharmacist	NHG Pharmacy (Woodland Polyclinic)
	Lee Yin Ping Eunice	Senior Pharmacist	NHG Pharmacy (Yisun Polyclinic)
	Bek Siew Joo Esther	Principal Pharmacist (Clinical)	NHG Pharmacy (Bukit Batok Polyclinic)
	Pang Pei Ching	Senior Pharmacist	NHG Pharmacy (Choa Chu Kang Polyclinic)
	Verlyn Koh Wei Ting	Pharmacist	NHG Pharmacy (Clementi Polyclinic)
	Sim Jun Long Marvin	Senior Pharmacist	NHG Pharmacy (Jurong Polyclinic)
	Chua Jia Jing	Pharmacist	NHG Pharmacy (Pioneer Polyclinic)

Evidence for a Problem Worth Solving

- ✓ Pilot study in TPY done between December 2017 – February 2018 showed that prescribing near-misses was reduced from 18% in the pilot control group to 6.9% in the intervention group.
- ✓ 109 out of 135 identified drug related problems (DRPs) resulted in a total cost-avoidance of SGD\$822,217.50.

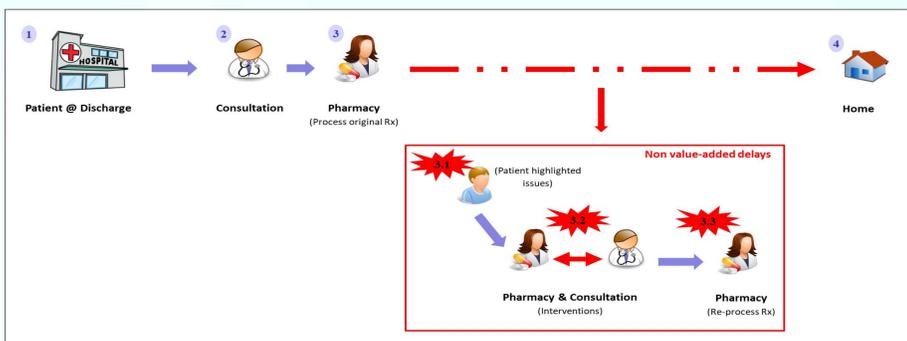
Current Performance of a Process

Post-consultation pharmacy interventions incurred an additional 27:32 mins of unnecessary wait time for patients

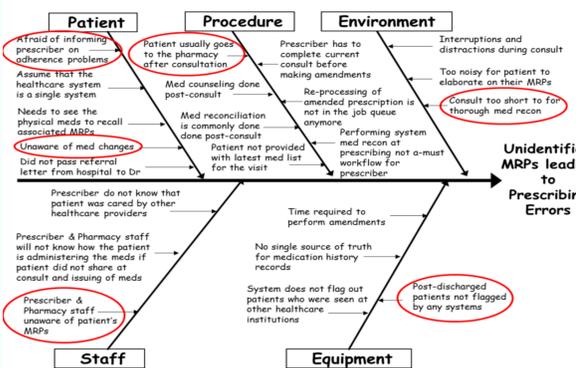


37% of the prescriptions with prescribing near-misses which were identified and resolved at the pharmacy, translated to a potential cost-avoidance of \$225,348.50

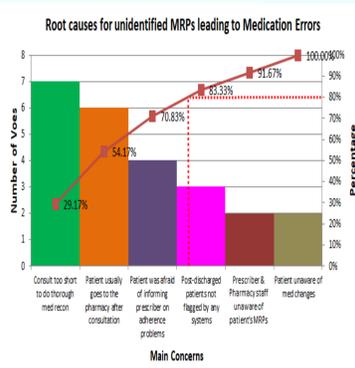
Flow Chart of Process



Cause and Effect Diagram



Pareto Chart



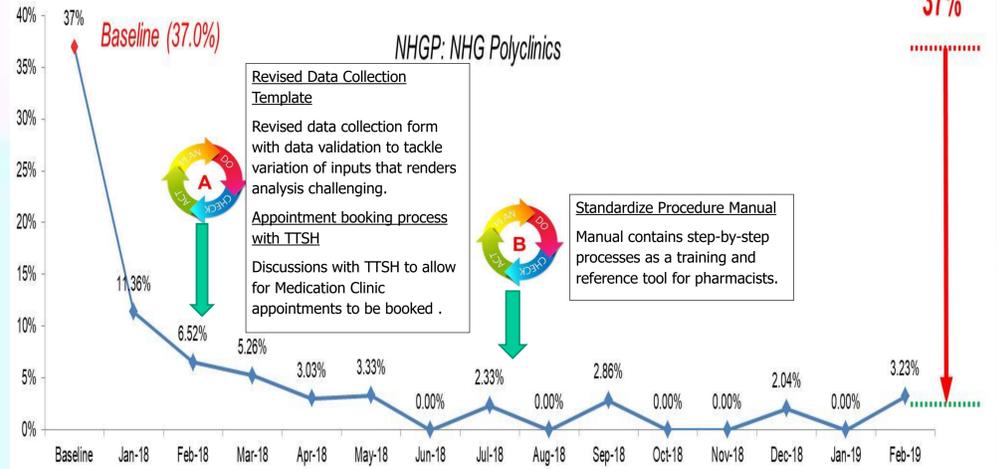
Implementation

PROBLEM	INTERVENTION	DATE OF IMPLEMENTATION
Consult too short to do thorough med recon	Pharmacist to perform med recon	1st December 2017
Patient was afraid of informing prescriber on adherence problems	Pharmacist to check on patient's compliance if patient had excessive balance supply of medications (done during med recon process)	1st December 2017
Patient usually goes to the pharmacy after consultation	For med recon process to be done prior patient get seen by the doctor	1st December 2017

These interventions in the Medication Clinic were spread to other clinics in NHGP and NUP, while outcomes in TPY continued to be measured.

Results

% of Medication Clinic Patients (NHGP) with Prescribing Near-Misses (Jan 18 - Feb 19)

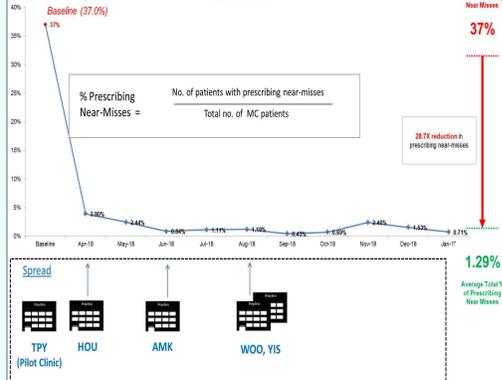


Prescribing near-misses was reduced from baseline* of 37% to a total average of 3% in 14 months.

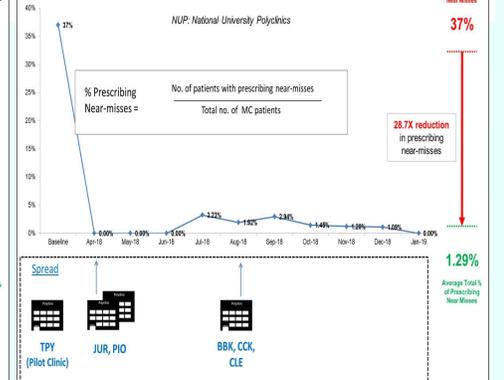
*Control group was expanded from 50 to 100 patients for a more representative baseline.

3.0%
Average Total % of Prescribing Near Misses

% of Medication Clinic Patients (NHGP) with Prescribing Near-Misses (Apr 18 - Jan 19)

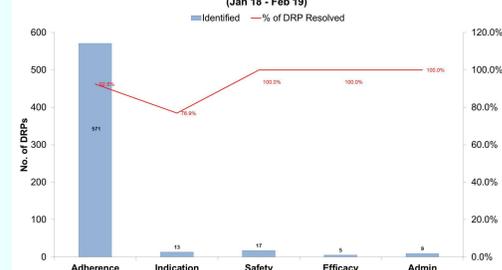


% of Medication Clinic Patients (NUP) with Prescribing Near-Misses (Apr 18 - Jan 19)



The service was spread to all NHG polyclinics from April to August 2018 and positive results were evident across all five polyclinics. Prescribing near-miss rates have reduced by more than 28-fold from baseline of 37% to 1.29%. Results were consistent when the spread was applied cross-cluster to National University Polyclinics (NUP) which also reflected a reduction of prescribing near-misses to 1.29%.

Resolution Rate of DRPs by Category (Jan 18 - Feb 19)



Cost Savings



DRPs identified	Cost-Avoidance
Adherence	USD 2,675,135.00
Indication	USD 60,905.00
Safety	USD 79,645.00
Efficacy	USD 23,425.00
Admin	USD 42,165.00
Total Cost-Avoidance	SGD 3,690,843.00

Based on the cost of per actual recorded ADE# (Cost per ADE = US \$4,685.00, conversion factor of 1 USD = 1.3 SGD), a total of 560 DRPs would have resulted in a total cost avoidance of SGD \$83,690,843.

Bates DW, Spell N, Cullen DJ and et al. "The costs of adverse drug events in hospitalized patients" JAMA 1997; 277 (4): 307-11

Problems Encountered

- For transiting patients to the polyclinic, required laboratory tests need to be ordered by the doctor post med clinic rather than prior med clinic service. This results in unnecessary wait time for the patients.
- For patients who do not require any medication supply on the day of visit, they will not return to the pharmacy. Hence, hardcopy patient medication list which is created after Dr's prescription order may not reach the patient.
- Patients did not bring their own balance medication during their paired appointment visit. Hence, the pharmacist was unable to perform physical medication reconciliation for patient.

Strategies to Sustain

- Lab referral process can be streamlined further if order can be made before patient's visit to the polyclinic.
- Sharing of % reduction of prescribing errors and patient safety outcomes from Medication Clinic service on a regular basis.
- Spread collaboration with NHG hospitals to hospitals from other clusters, including community hospitals.