

# Resolution of Medication-Related Problems (MRPs) for patients on transition of care from hospitals to primary care; and reduction of prescribing near-misses through Medication Clinic in Toa Payoh Polyclinic



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## Mission Statement

To identify and resolve 100% of non-adherence related MRPs faced by patients on transition of care to primary care and to reduce prescribing near-misses by 50% within 3 months.

## Team Members

	Name	Designation	Department
<b>Project Lead 1</b>	David Ng Wei Liang	Clinic Head	Toa Payoh Polyclinic
<b>Project Lead 2</b>	Lim Li Ching	Deputy Director	Pharmacy Practice, NHG Pharmacy
<b>Project Manager</b>	Lim Hui Li, Angie	Executive	Pharmacy Practice, NHG Pharmacy
<b>Team Members</b>	Tracy Gan Seok Bee	Deputy Director	Operations, Service Leadership & Patient Safety
	Tan Lay Khim	Manager	Operations, NHG Pharmacy
	Gary Wiratama Chandra	Senior Pharmacist	NHG Pharmacy (Toa Payoh Polyclinic)
	Cheryl Char Wai Teng	Senior Pharmacist	NHG Pharmacy (Hougang Polyclinic)
	Anthony Yip Yew Fei	Pharmacist	NHG Pharmacy (Hougang Polyclinic)

## Evidence for a Problem Worth Solving

- Previous research study conducted by NHG Pharmacy and NHG Polyclinics showed that 57.5% of patients transiting from hospitals to primary care had medication-related problems.
- 79.3% of the patients in the study had low to medium adherence to their prescribed medication.
- The adherence-related issues encountered by these patients may have gone unaddressed and hence, unresolved.
- MRPs detected after patients' consultation with the doctor led to interventions downstream. Such interruptions to the doctor's consultation session may cause distraction, leading to further prescribing errors.

## Current Performance of a Process

**Post-consultation interventions** incurred unnecessary wait time for patients.

Mean minimum = 12:06 min  
Mean maximum = 18:26 min  
**Post-consult intervention Mean: 39:38 mins**

**Prescribing Near-Misses for 100 Transition of Care Patients**

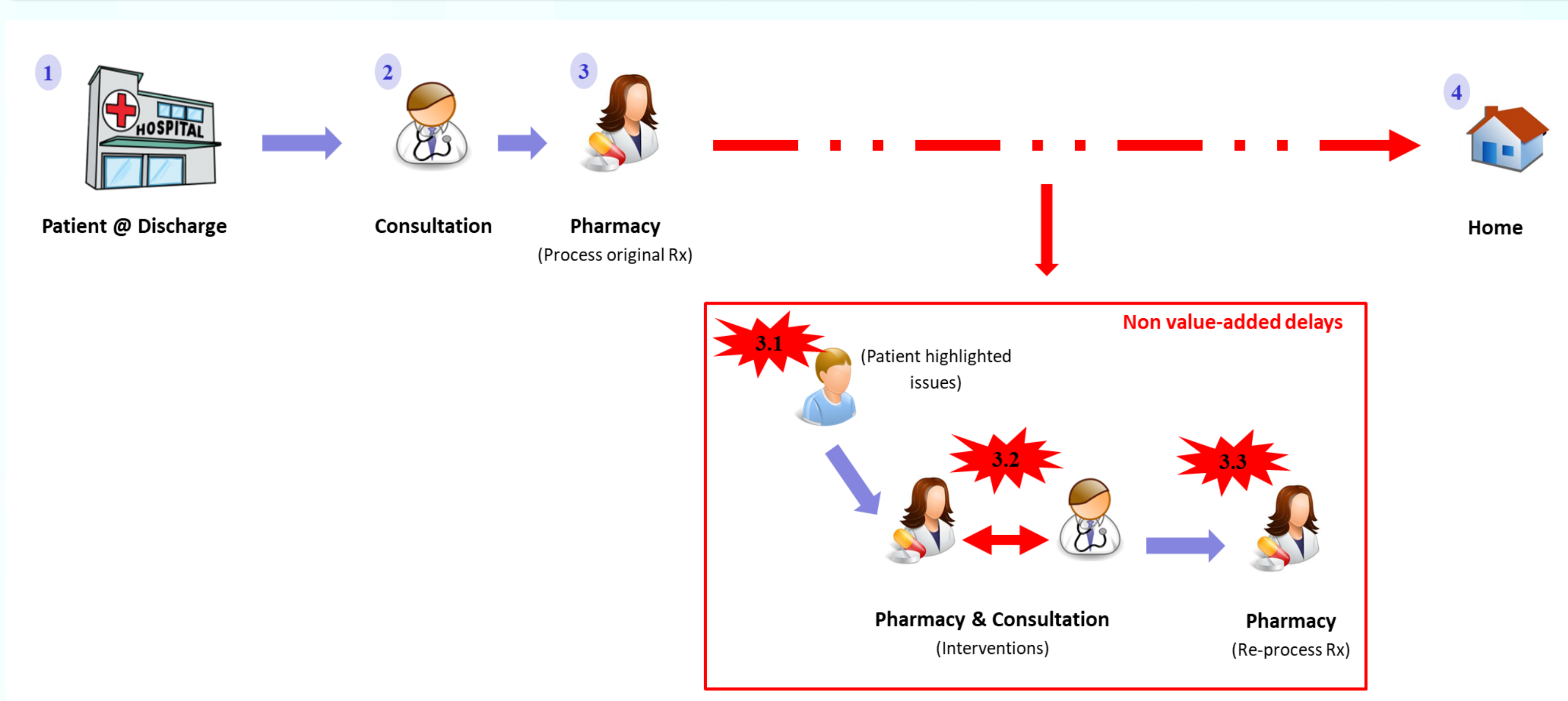
(n=100)

Prescribing Near-Misses: 37.0%

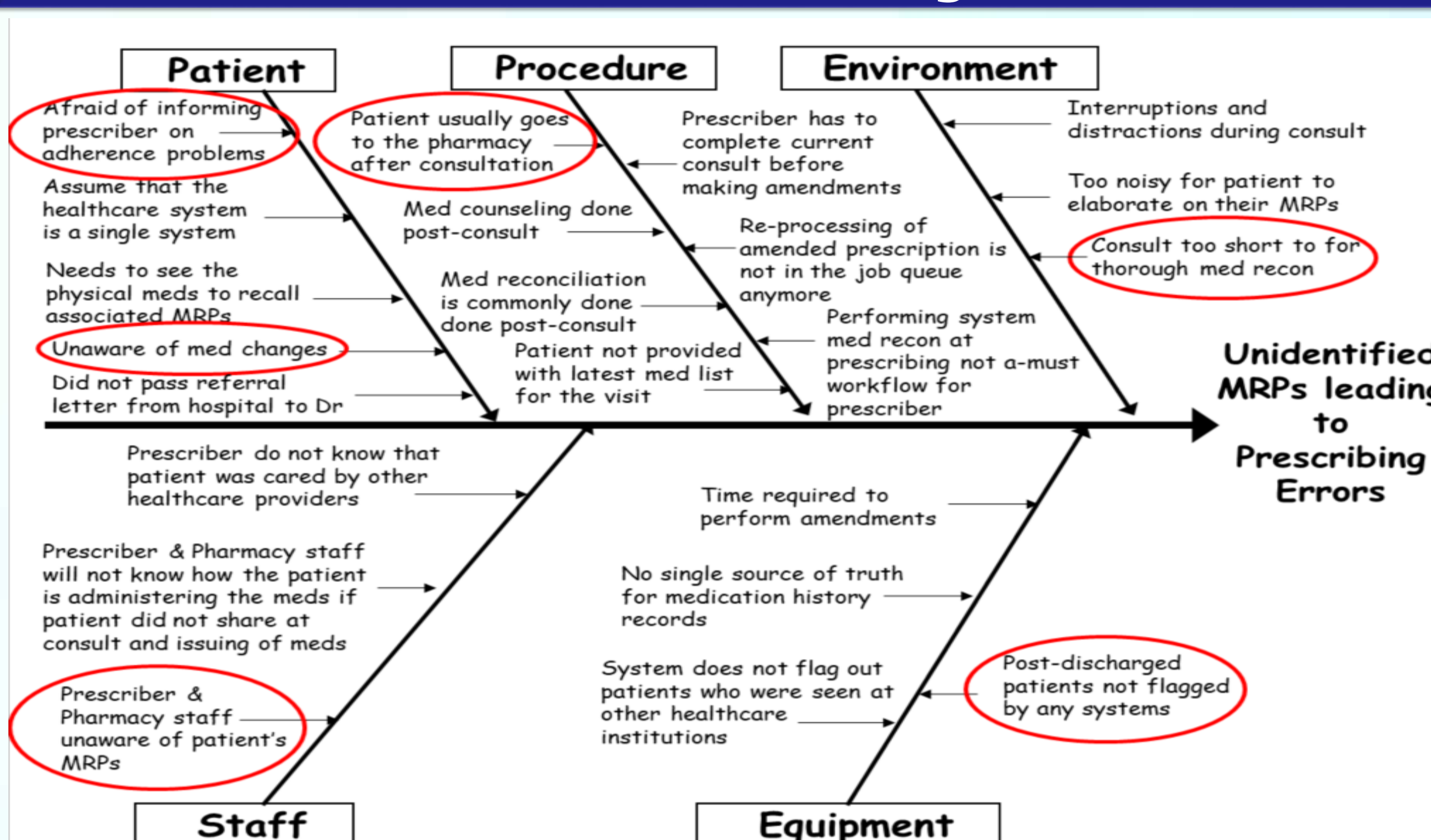
Potential cost of error: \$225,348.50

Prescribing near-misses were identified for 37% of the prescriptions and resolved at the pharmacy. This translates to a potential cost-avoidance of \$225,348.50

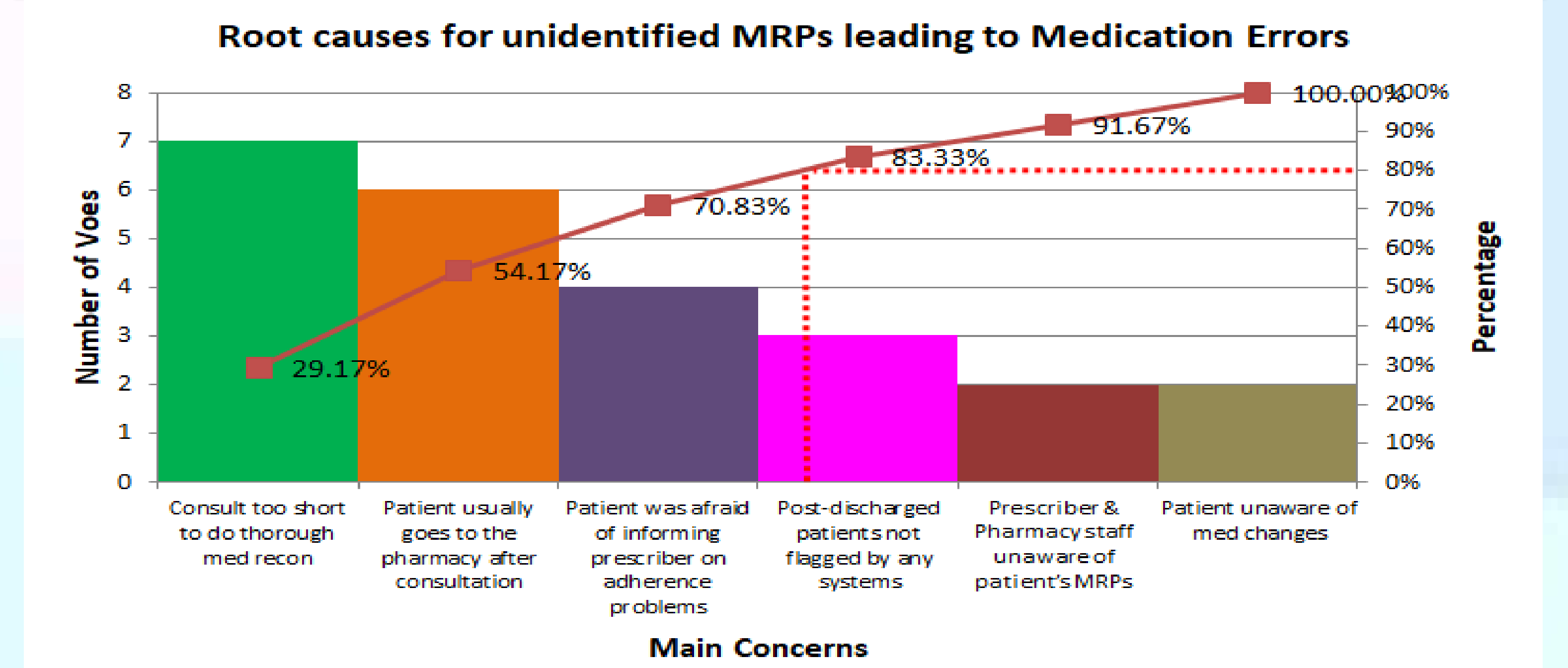
## Flow Chart of Process



## Cause and Effect Diagram



## Pareto Chart

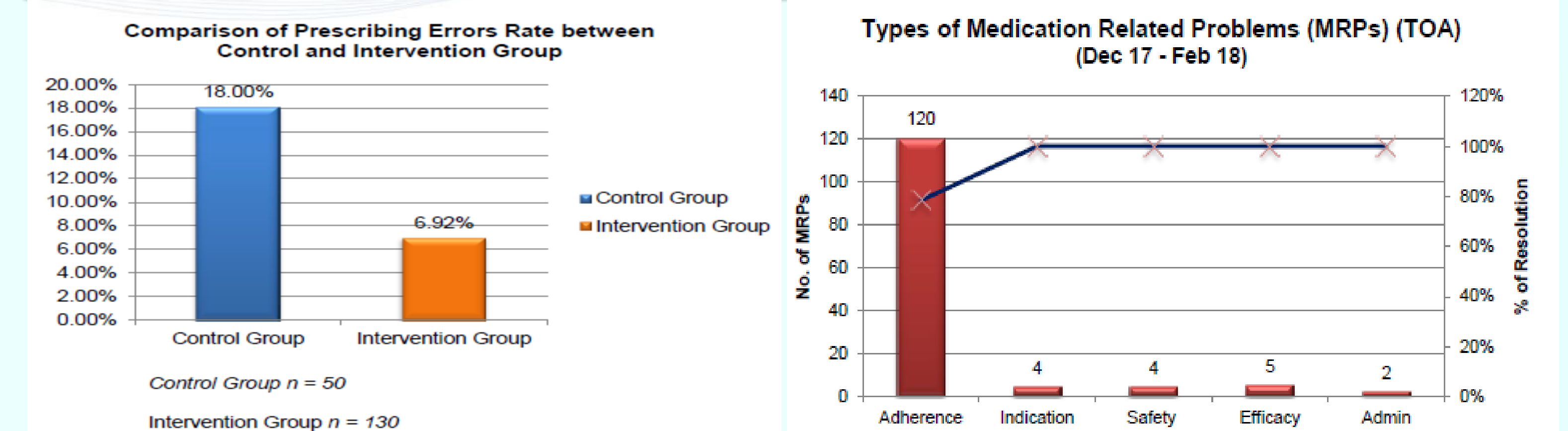


## Implementation

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

Interventions are inter-related and can be implemented at the same time.

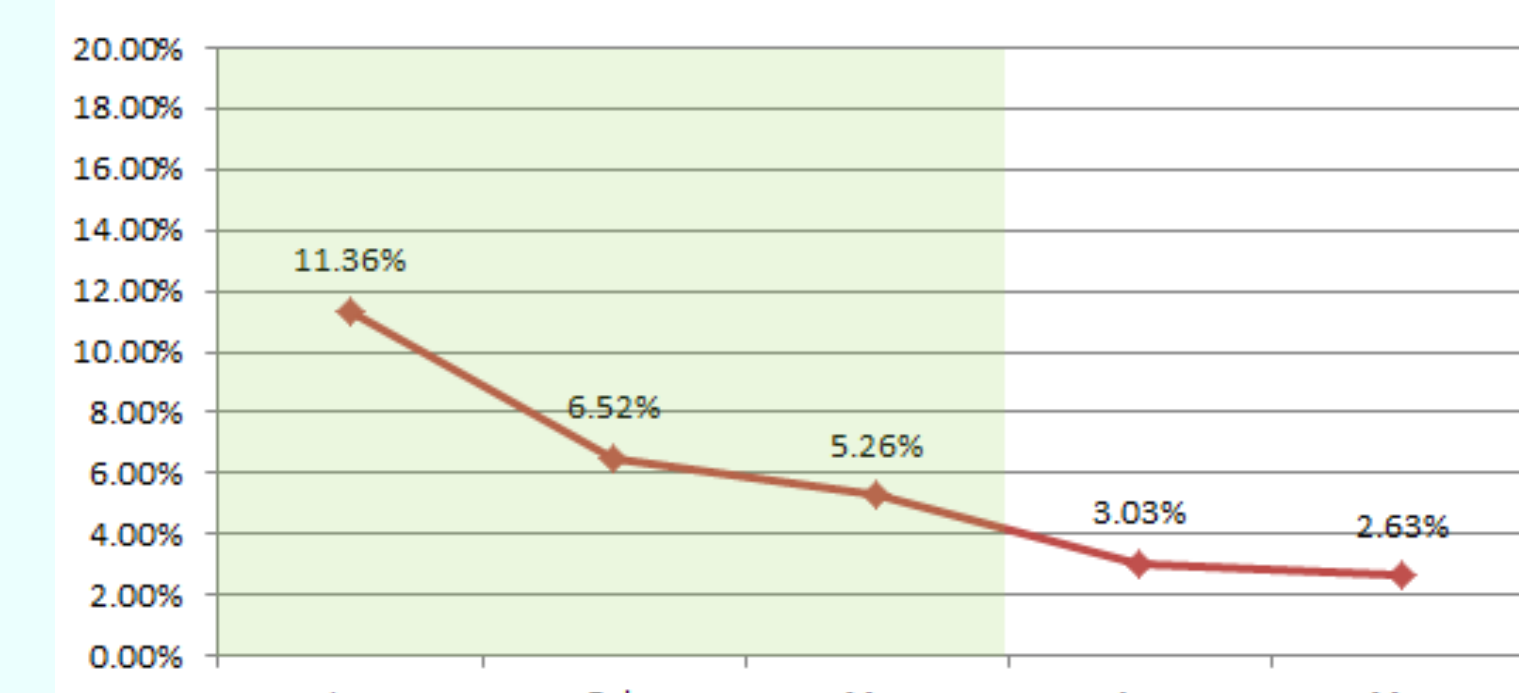
## Results



Prescribing errors were reduced from 18.0% in control group (n=50) to 6.9% in the intervention group (n=130).

100% of the non-adherence related MRPs were resolved compared to the 80.74% resolution rate of adherence related MRPs.

## % of Patients with Prescribing Near Misses (Jan 18 - May 18)



The run chart showed that prescribing near-misses were reduced from 11.36% to 2.63% (76.8% reduction) with the implementation of Medication Clinic, which translated to better quality prescriptions and safer patient care.

## Potential Cost Avoidance

Type of MRPs	Cost Avoidance
Adherence	USD 562,200.00
Indication	USD 18,740.00
Safety	USD 18,740.00
Efficacy	USD 23,425.00
Admin	USD 9,370.00
<b>Total</b>	<b>USD 632,475.00</b>
	<b>SGD 822,217.50</b>

(Conversion factor of 1.3)

## Problems Encountered

- Manual recording of patients' MRPs was time consuming and tedious
- No single source of truth made it difficult for pharmacist to reconcile the medication records
- Patients' MRPs can be difficult to be resolved within the same visit especially if the MRP stemmed from adherence issue(s).
- Hospital-discharged patients who were not referred to NHGP via contact centre appointment booking email workflow may be missed from the paired medication clinic-consultation service

## Learning Points and Strategies to Sustain

- Sharing of % reduction of prescribing errors and patient safety outcomes from the Medication Clinic service on a regular basis
- To engage patients to own their list of medication and inform healthcare providers of changes to their medications.
- Engage hospitals to adopt email appointment booking workflow for discharged patients on follow-up at NHG Polyclinics.
- Medication reconciliation (MR) process can be streamlined further if this is done upstream before patient's discharge from hospital to identify and address adherence issues as far as possible. This would lead to better communication with patients' primary care providers on the follow-up to resolve any adherence-related problems