To Reduce Patients' Waiting Time by Improving the Efficiency of OPAS Packing Workflow at Bukit Batok Pharmacy

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Mission Statement

To reduce patients' waiting time in Pharmacy by improving the efficiency of Outpatient Pharmacy Automation System (OPAS) packing workflow in Bukit Batok Pharmacy.

NO.	MEASUREABLE OUTCOMES	BASELINE DATA	TARGETS	TARGET % REDUCTION	TIMEFRAME FOR COMPLETION
1	95th percentile Fulfillment Time	20 min	13 min	35%	Jan 2016 (10 months)
2	95th percentile Waiting Time	31 min	25 min	20%	
3	% of Rx done in Rxpress (OPAS Adoption Rate)	54%	> 90%	NA	Jan 2016 (10 months)

Team Members

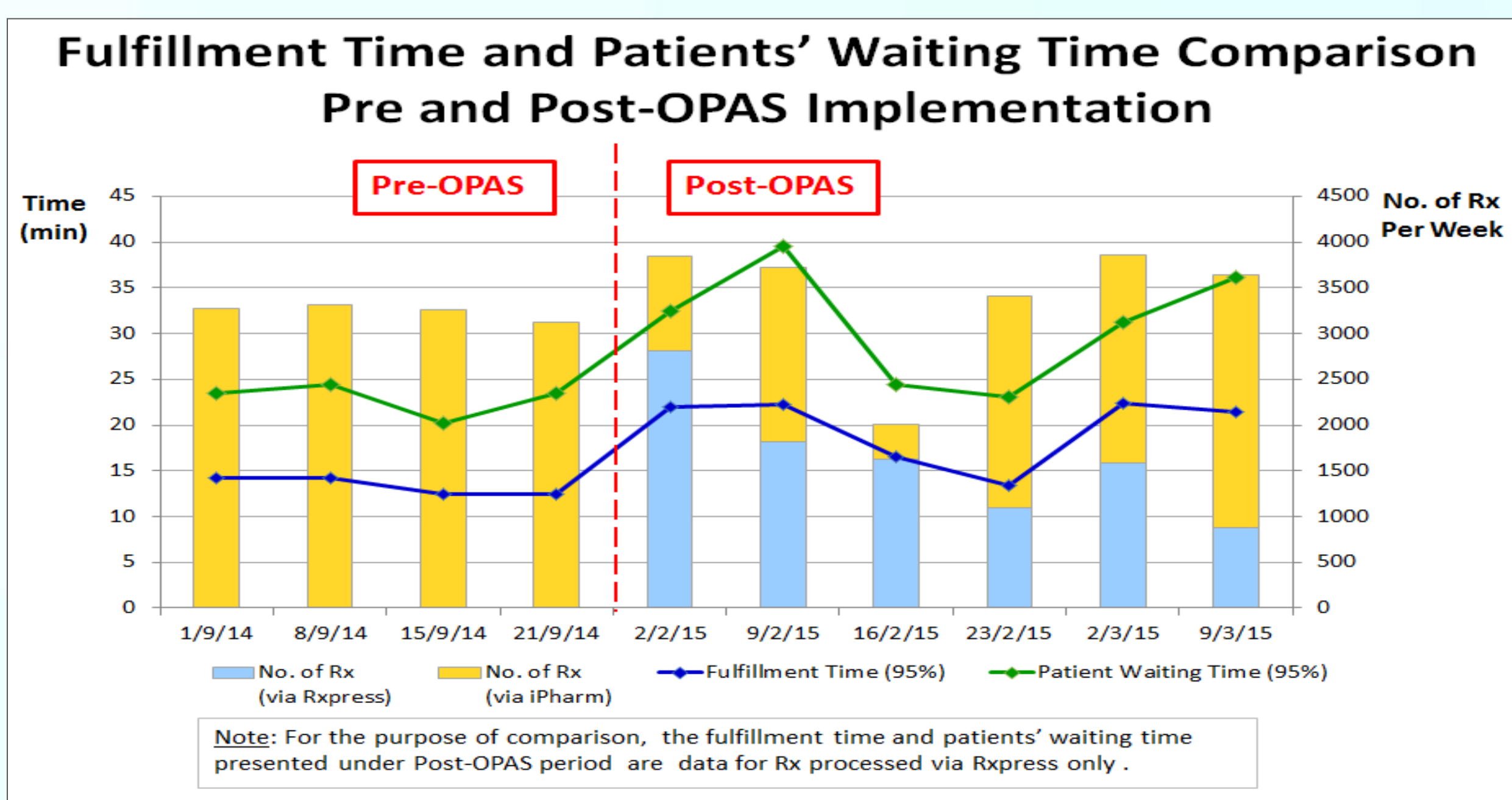Siah KY, Cherlyn Chua PL, Sharon Tan HX, Evelyn Soh SH, Ong WT, Chow SM

Evidence for a Problem Worth Solving
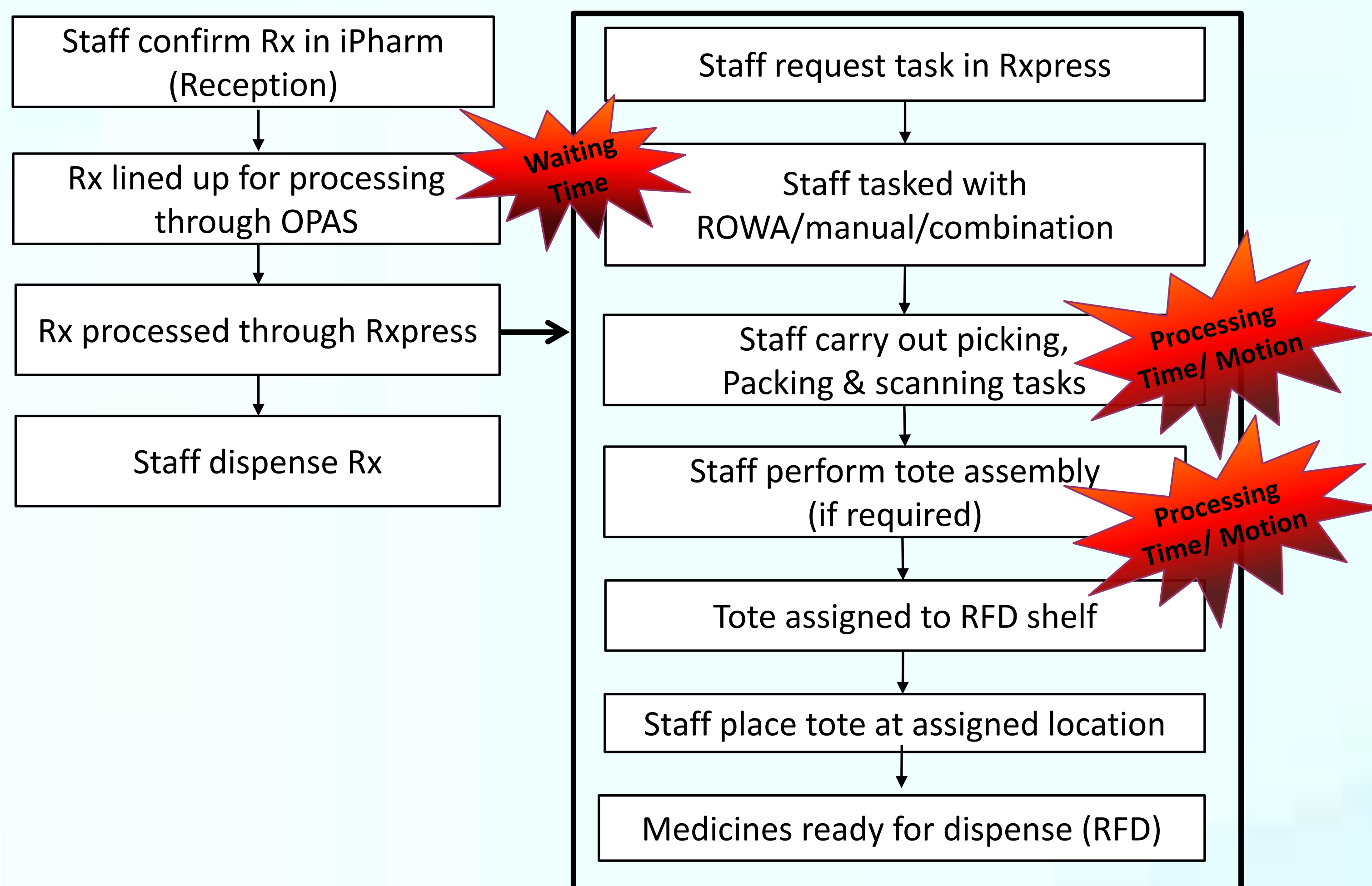
Comparing pre-OPAS and post-OPAS data:
1. Increase in 95th percentile fulfillment time by 54%.
2. Increase in 95th percentile patients' waiting time by 35%.
3. Daily frustrations among staff and resource limitations.

PARAMETERS	PRE-OPAS	POST-OPAS
95th percentile fulfillment time	13 minutes	20 minutes
95th percentile patient waiting time	23 minutes	31 minutes

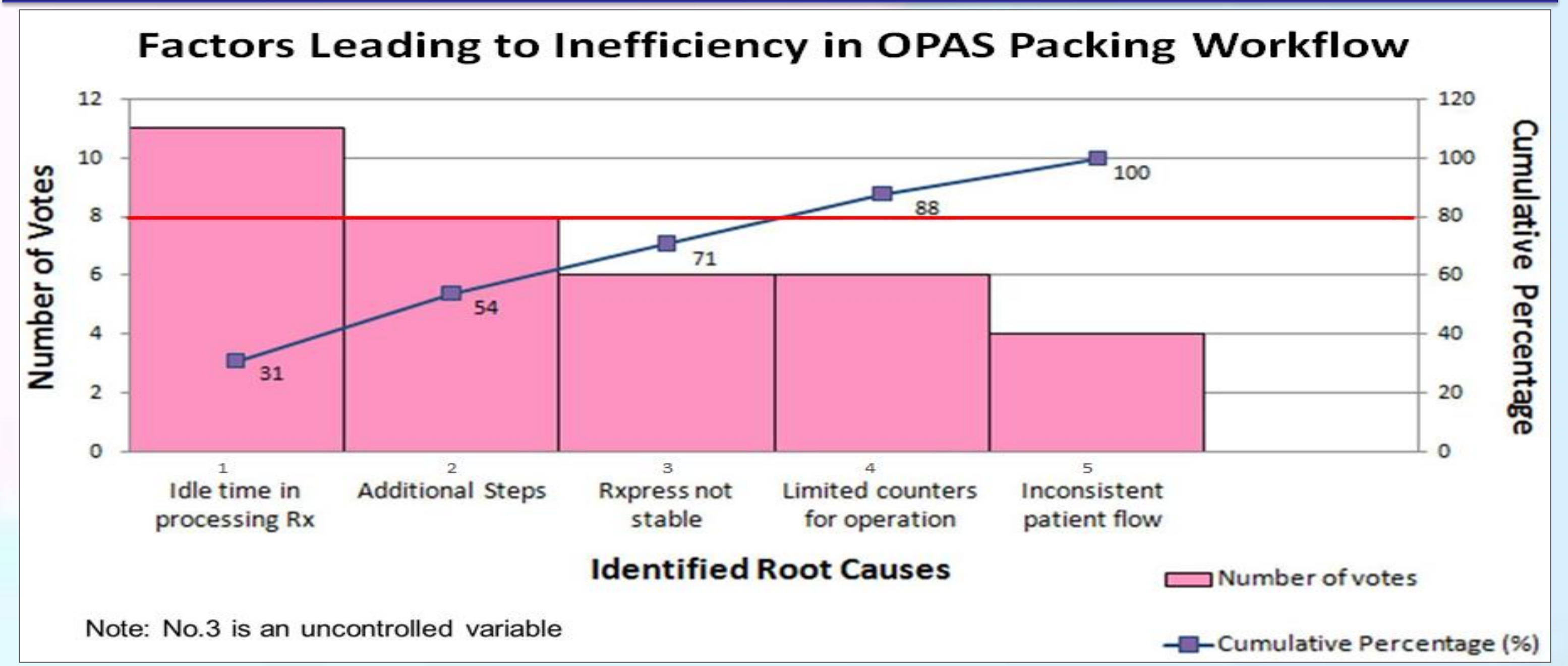## Current Performance of a Process

Fulfillment Time and Patients' Waiting Time Comparison Pre and Post-OPAS Implementation

Note: For the purpose of comparison, the fulfillment time and patients' waiting time presented under Post-OPAS period are data for Rx processed via Rxpress only.

Flow Chart of Process

Staff confirm Rx in iPharm (Reception) → Rx lined up for processing through OPAS → Rx processed through Rxpress → Staff dispense Rx

Staff request task in Rxpress → Staff tasked with ROWA/manual/combination → Staff carry out picking, Packing & scanning tasks → Staff perform tote assembly (if required) → Tote assigned to RFD shelf → Staff place tote at assigned location → Medicines ready for dispense (RFD)

(Waiting Time) (Processing Time/ Motion) (Processing Time/ Motion)

Cause and Effect Diagram

System, Staff, Environment, Process → Inefficiency in OPAS Packing Workflow

Pareto Chart

Factors Leading to Inefficiency in OPAS Packing Workflow

Note: No.3 is an uncontrolled variable
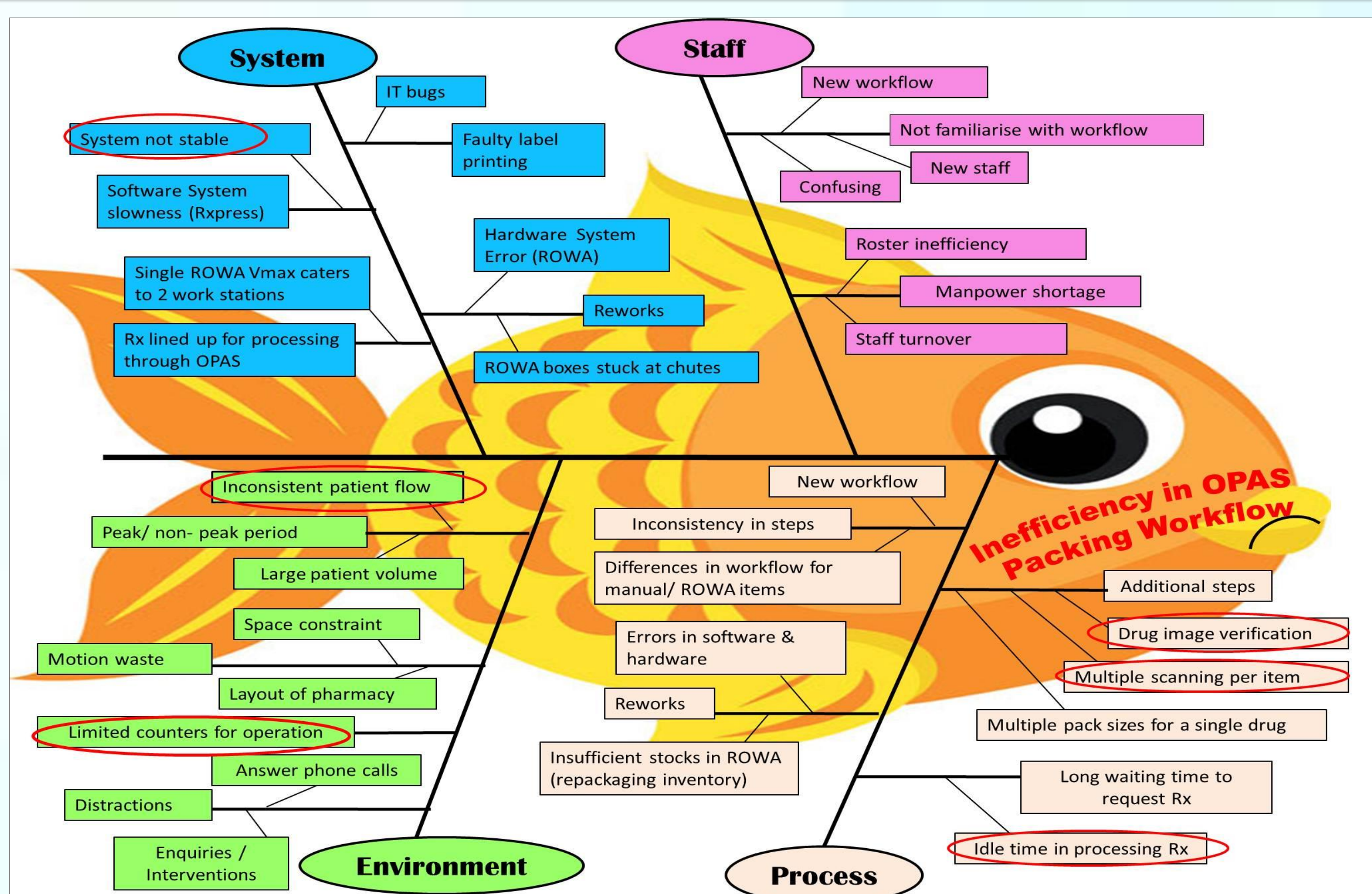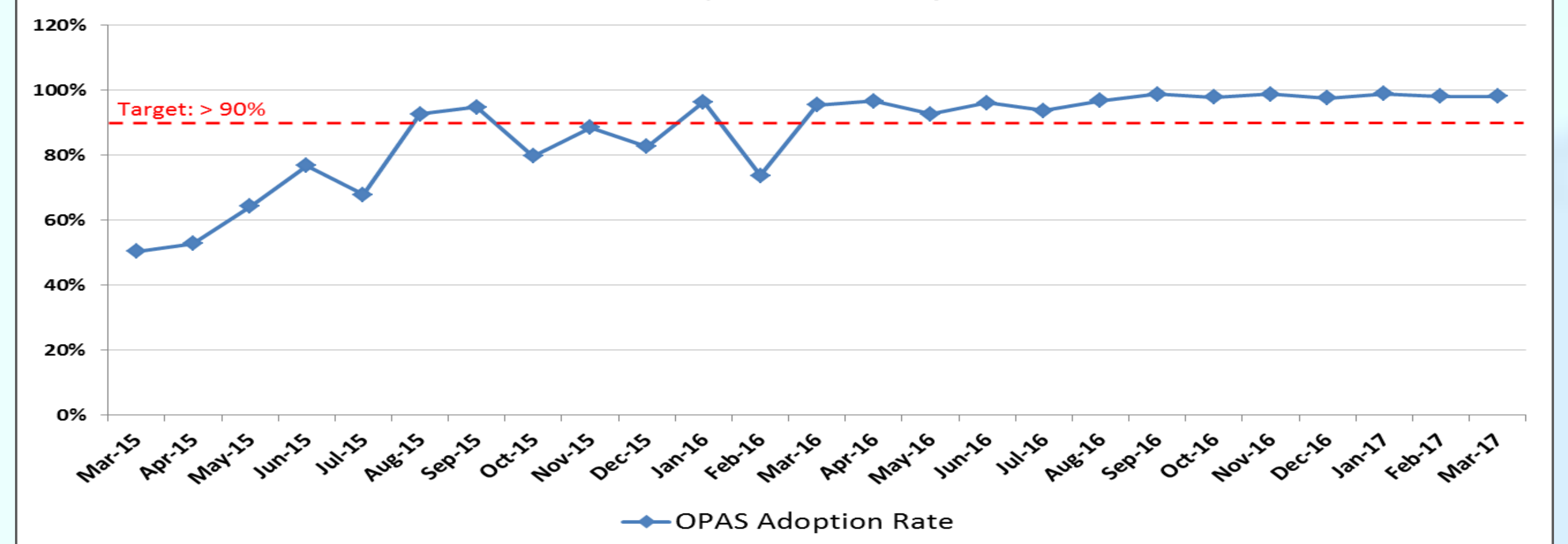
Implementation

ROOT CAUSES	PROPOSED COUNTERMEASURES	DATE OF IMPLEMENTATION
Additional steps in OPAS packing workflow: -Multiple scanning per item -Drug image verification prompt	1) "Drop-All-Print-All" Method - All ROWA boxes are dropped and labels printed upon task request - Scanning frequency reduced from 3 to 2 times per item	19/03/2015
	2) Turning off drug image verification function for manually-picked items	17/04/2015
Idle time in processing Rx	3) Redesigning the OPAS packing workflow - "Request-Pull" method - Reallocation of tasks for all counters at the packing area	05/05/2015
Limited/ sub-utilizing of counters for operation		

Results

Monthly Data of 95th Percentile Fulfillment Time, 95th Percentile Patients' Waiting Time and No. of Prescription (Rx) Processed by OPAS Workflow
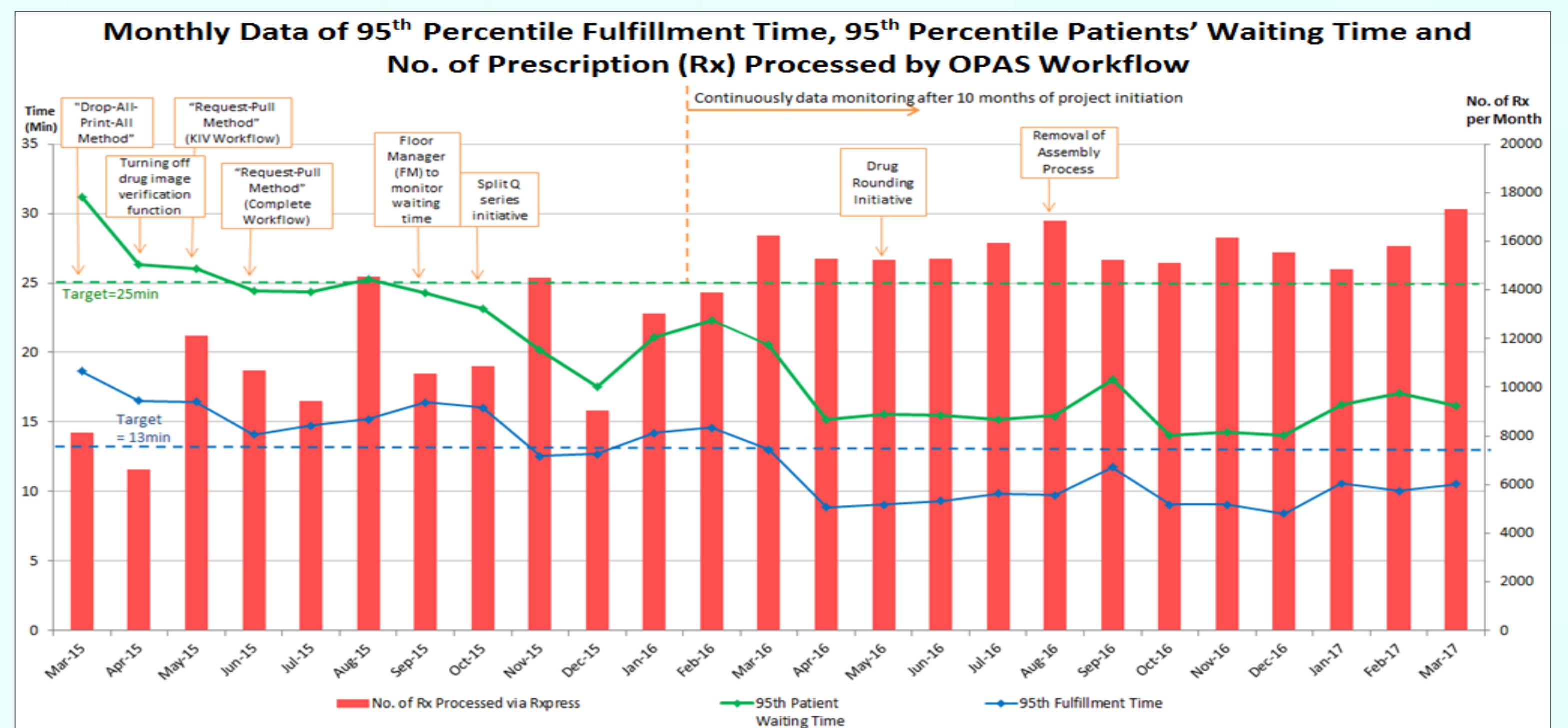
BBK Pharmacy OPAS Adoption Rate

MEASURABLE OUTCOMES	TARGETS	% TARGET REDUCTION	TARGETS ACHIEVED?
95th percentile Fulfillment Time	13 minutes	35%	✔
95th percentile Waiting Time	25 minutes	20%	✔
% of Rx done in Rxpress (OPAS Adoption Rate)	>90%	NA	✔

Cost Savings

Estimated Manpower FTE savings in a year = 3.5 Pharmacy Technician FTE
→ better resource utilization for value-added patient care activities e.g. dispensing, specialized counseling, medication review, and operational work.

Problems Encountered

- Instability of ROWA (hardware) & Rxpress (software).
- Additional IT problems surfaced upon new system configurations.
- Inadequate experience especially among new staff.
- Tedious manual data collection.

Strategies to Sustain

✓ To enforce implemented countermeasures to all staff by continuous training and reminders.
✓ The new OPAS workflow was propagated to other branches of NHG Pharmacy i.e. Hougang, Woodlands, Yishun, Toa Payoh and Chua Chu Kang.
✓ Developed BBK OPAS Quick Training Guide for staff reference.