

**Project Title**

1 Bill 1 Queue

**Organisation(s) Involved**

Tan Tock Seng Hospital, Integrated Health Information System (iHis)

**Project Category**

Technology and Automation, Process Improvement, Productivity

**Keywords**

Process Improvement, Productivity, Technology and Automation, Workflow Redesign, Outpatient Management, Patient-Centred Care, Patient Billing, Clinic Service & Medication Payment, Queue Management System, Pharmacy, Waste Reduction, Time Saving, Cost Saving, Resource Reallocation, Tan Tock Seng Hospital, 1-Bill 1-Queue, Specialist Outpatient Clinic, System Application and Product, Patient Journey, Patient Experience, Patient Satisfaction, Single Point Billing, Reduce Touch Point, IPharm System, Integrated Health Information System, Minimize Billing Errors, Consolidated Billing, Credit Card Terminals Integration, Self-Registration Kiosks, Tested Workarounds, Minimal Capital Investment, Change Management

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NATIONAL HEALTHCARE INNOVATION AND PRODUCTIVITY MEDALS 2017  
PRIMARY AWARD: AUTOMATION, IT, ROBOTICS INNOVATION

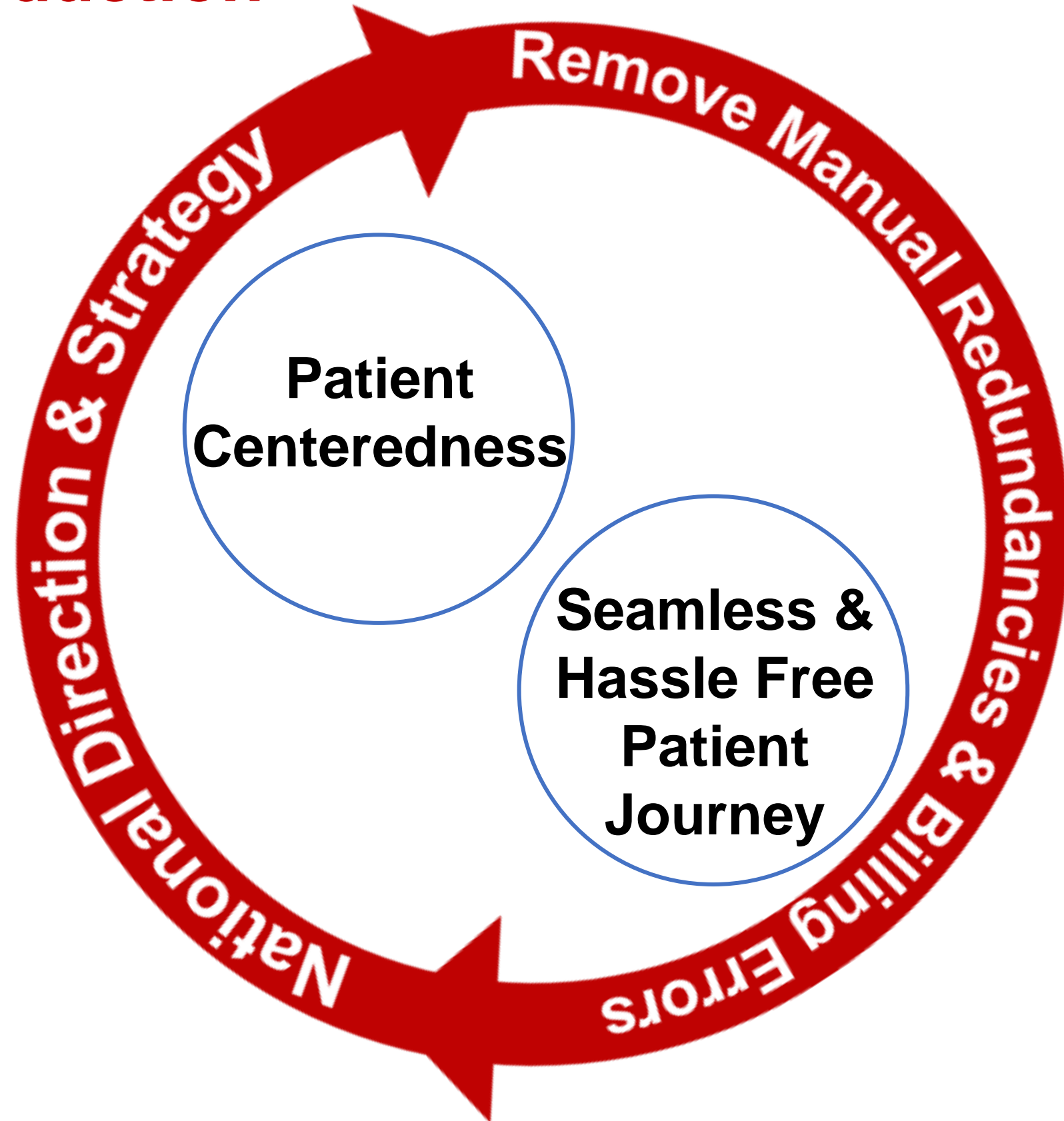
# 1-BILL, 1-QUEUE

Project Lead: Michael Leow

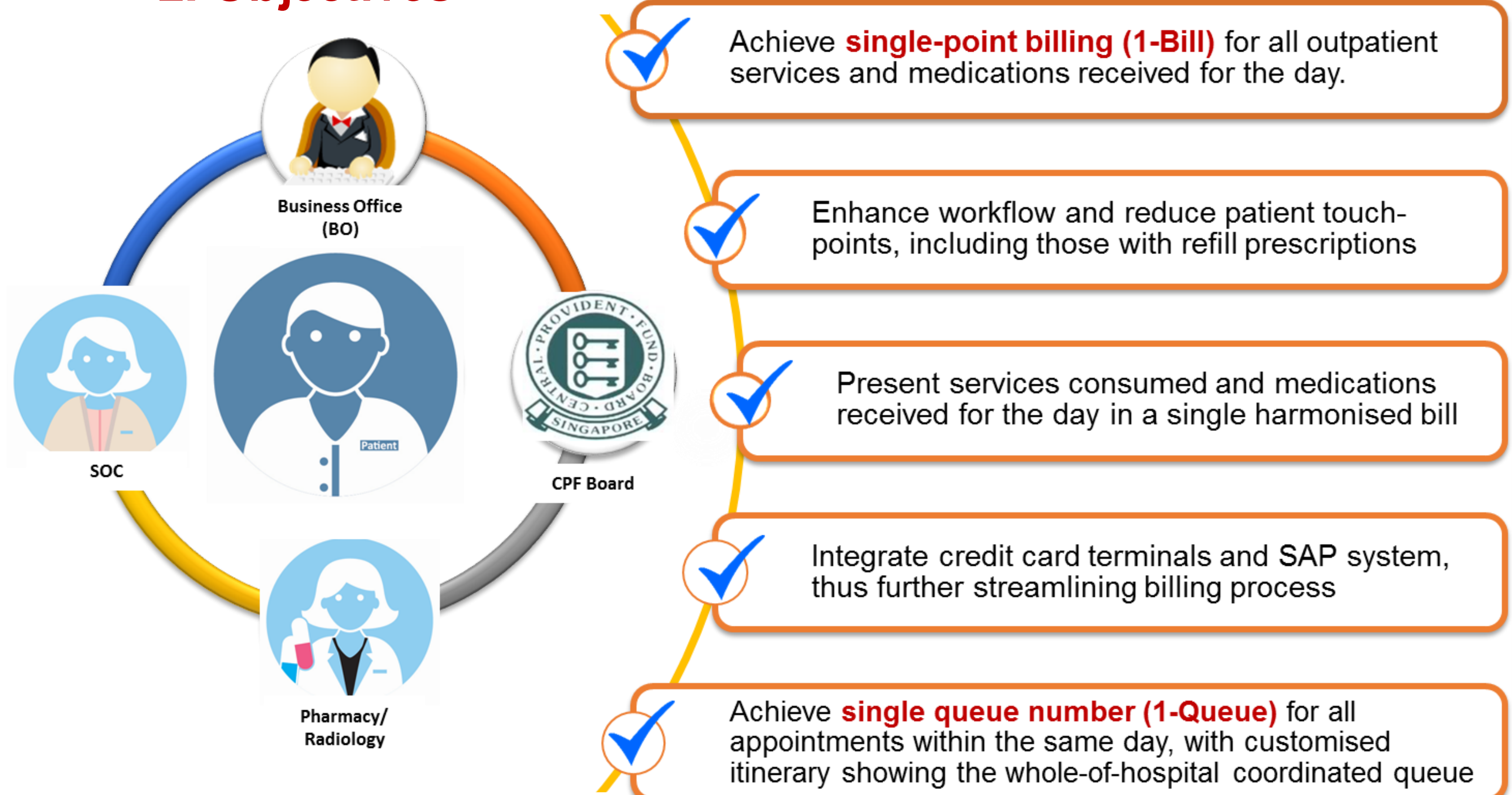
Facilitated by: Outpatient Management Unit Specialist Outpatient Clinic Means Testing (OMU SOCMT) & Medical Centre (MEC) Masterplan Teams

Partnering Stakeholders: Operations, Specialist Outpatient Clinics (SOCs), Pharmacy, Diagnostic Radiology, Business Office (BO) and Integrated Health Information Systems (IHIS)

## 1. Introduction

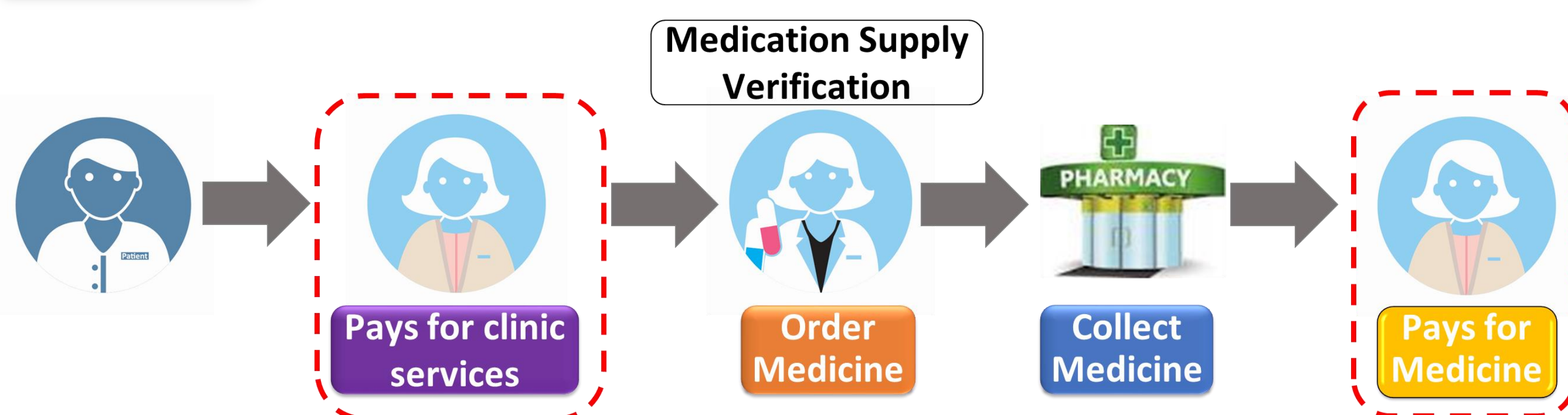


## 2. Objectives

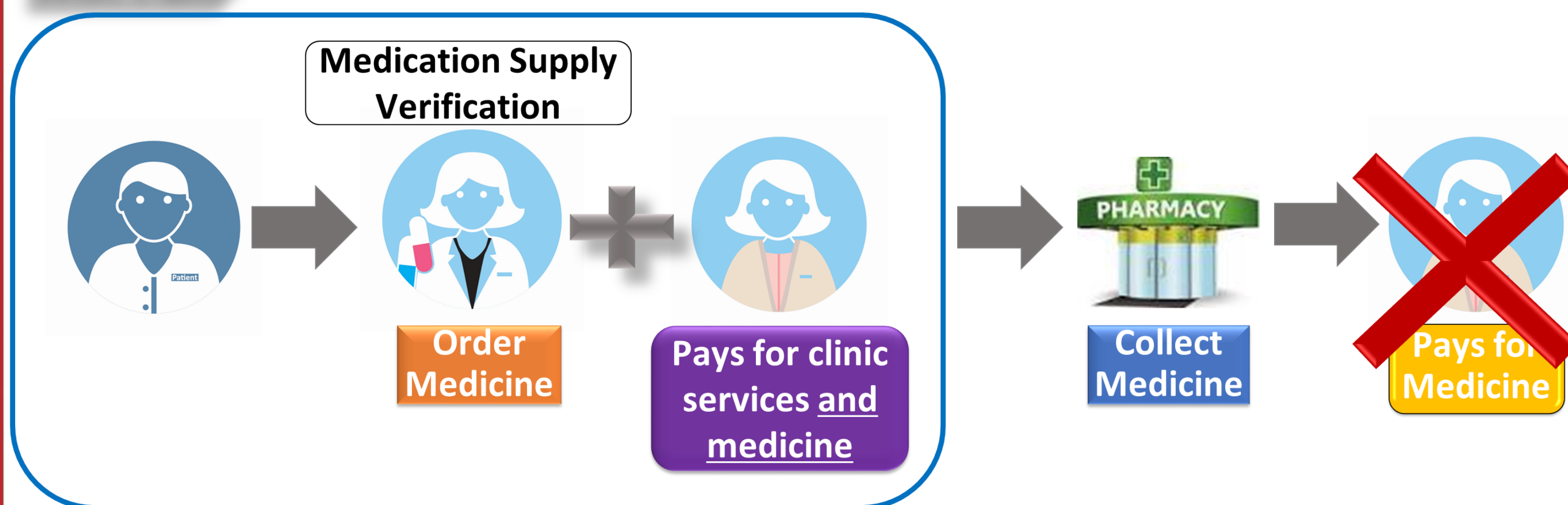


## 3. Strategy for Change Management

### Before 1-Bill



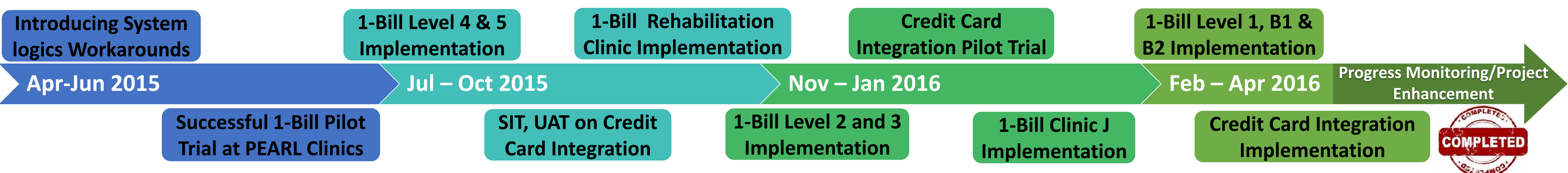
### With 1-Bill



The workgroup identified system gaps and addressed stakeholders' concerns with evidenced and tested workarounds. Then, pilot trials were conducted, and changes were implemented in phases. The care journey redesigns are:

- Patients now see pharmacists for medication orders first, and subsequently pay **for both clinic services and medication together** as 1-Bill. Before 1-Bill, patients pay for clinic services, proceed to see pharmacists and then make a second payment for medication orders.
- IT systems were enhanced so as to integrate credit card terminals and SAP system and achieve smooth flow of medication charges between SAP and lpharm systems for 1-Bill.
- An intelligent 1-Queue management system was built to achieve **single queue number with customized itinerary**.

1-Bill, 1-Queue is a hospital wide large-scale, technically challenging and complicated project that marries both front line patient journey with backend process. Moreover, a diversity of stakeholders in outpatient areas is involved. Therefore, the team is organized into five sub-workgroups each consists of a designated lead and appropriate representatives from identified stakeholder departments. The project duration was time bound to one year from April 2015.



## 4. Results

With outpatient care redesigned into 1-Bill, 1-Queue, patients can self-register via self-registration kiosks instead of waiting to be served at registration counters. **One touch point was removed** from the end-to-end outpatient care journey. All claims submission manual redundancies and data entry errors were eliminated. In collaboration with Clinical Research and Innovation Office, 207 surveys were analysed, where patients showed very positive feedback to 1-Bill, 1-Queue.

## 5. Measureable Outcomes

Projected base savings from first year (Expected to increase year-on-year due to increasing workload/transactions):

- Removed manual redundancy at Business Office: 1.8FTE
- Reduced billing processes at Pharmacy: 0.5FTE
- Reduced administrative processes at SOC: 0.2FTE
- Reduced billing processes and errors at SOC: 1.4 FTE
- Reduced manual registration at SOC: 7.4FTE

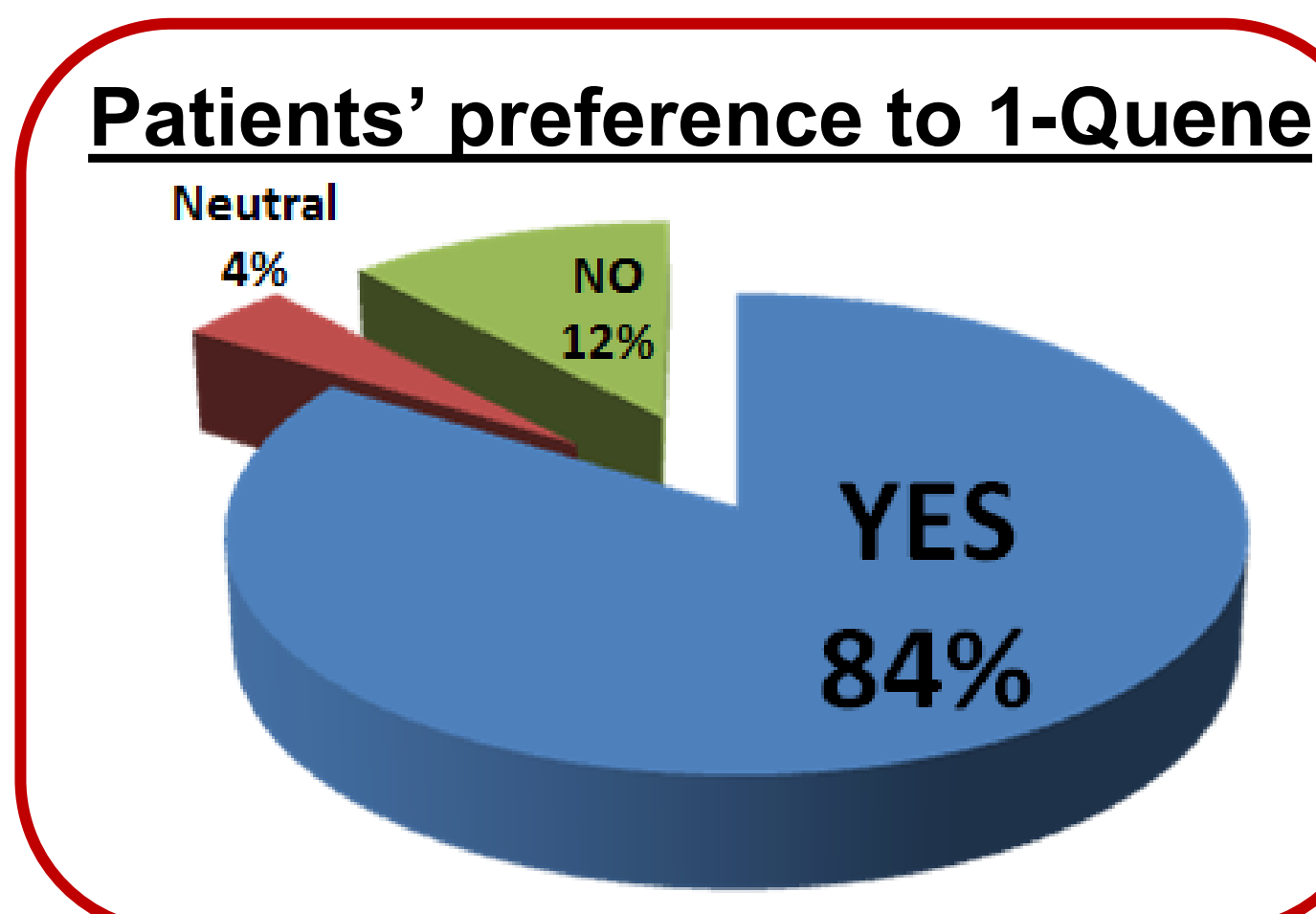
Total FTE savings to TTSH: **11.3 FTE**

Total cost savings to TTSH: **SGD460,591**

**Cost Avoidance: SGD200,000** for system enhancement to operationalize Flexi-Medisave claims submission.

**Patient's Perspective:** Time saved from enhanced refill prescription workflow: **25 minutes per patient**

## 6. Survey Analysis and Patient Verbatims



"This is so much faster! I get to save a lot of time in my visit this time."

"This process should be the way to go!"

"All the items are now reflected in 1-Bill - this is so much clearer!"

## 7. Conclusion & Sustainability

The cost savings/avoidance from 1-Bill require **minimal capital investment**. They were largely achieved by hospital-wide process re-arrangement and resource reallocation. The process of change management was also challenging as every clinic has its own uniqueness on the ground, posing difficulties in integration of the 1-Bill, 1-Queue workflow.

The savings are sustainable as the project team studied intensively system specifications and billing process at both SOC and Pharmacies. Process changes are fully implemented after stakeholders buy-in, training and piloting. The project is in-line with TTSH healthcare cluster's direction to use SAP as the single billing module. "1-Bill, 1-Queue" will also steer TTSH towards the national strategy of 1 consolidated bill.