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Toa Payoh Polyclinic, National Healthcare Group Polyclinics

Mission Statement

100% of patients in Toa Payoh Polyclinic on warfarin should be reviewed by the Anti-Coagulation Clinic (ACC)* for warfarin education at least once a year**, from the current mean of 49.6%^, over a period of 6 months.

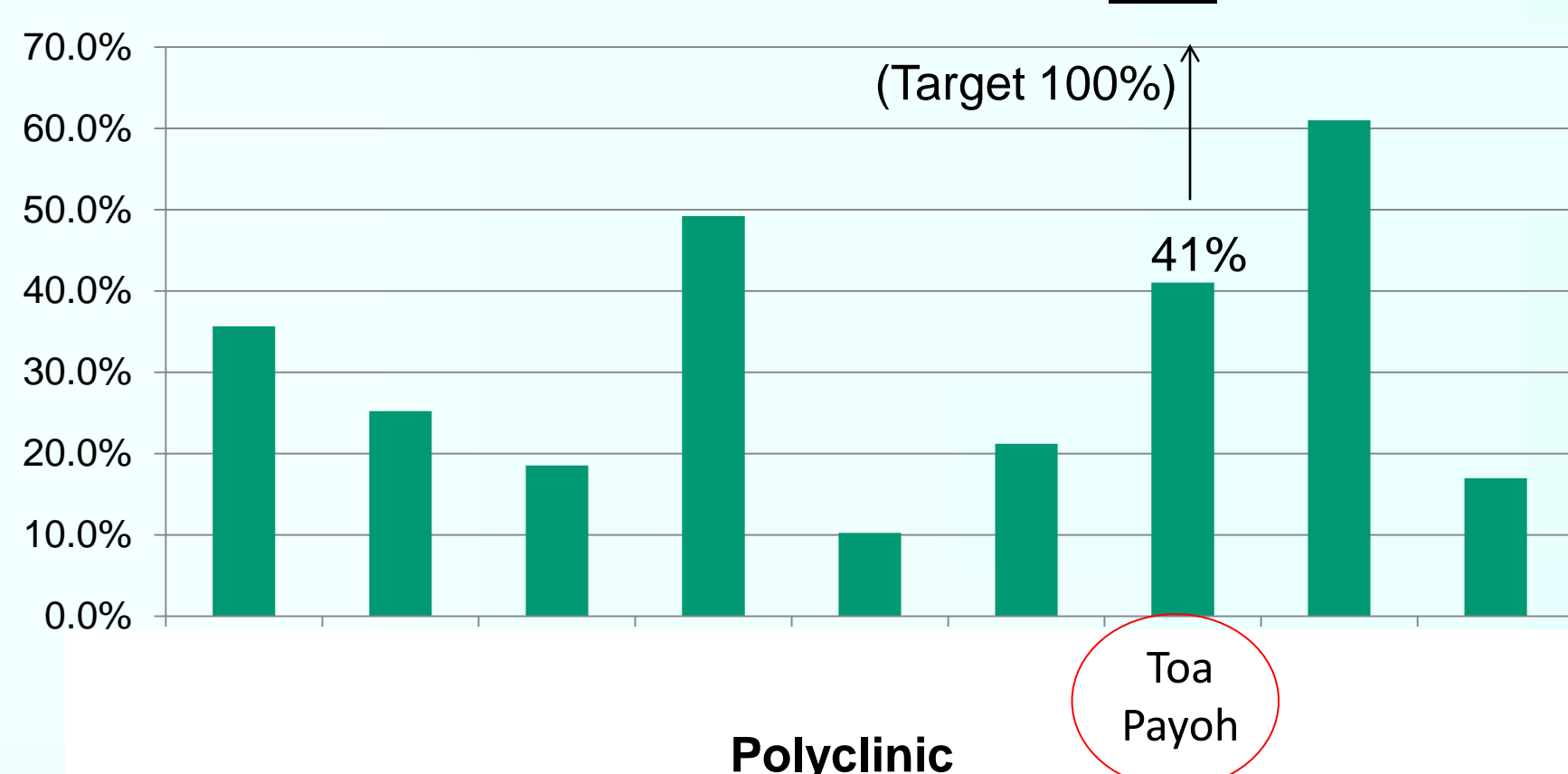
Team Members

Name	Designation	Department	Role
1 Dr Tan Khai Wei	Family Physician	Medical	Leader
2 Gary Wiratama Chandra	Senior Pharmacist	Pharmacy	Member
3 Weng Wanyu	Clinical Pharmacist	Pharmacy	Member
4 Phua Guay Gen	Pharmacy Technician	Pharmacy	Member
5 Norlela Bte Abd Hamid	Patient Service Associate	Operations	Member
6 Chia Sok Pheng Serene	Laboratory Senior Staff	Laboratory/ Diagnostics	Member
7 Dr Tung Yew Cheong	Head, Toa Payoh Polyclinic	Medical	Sponsor/ Facilitator

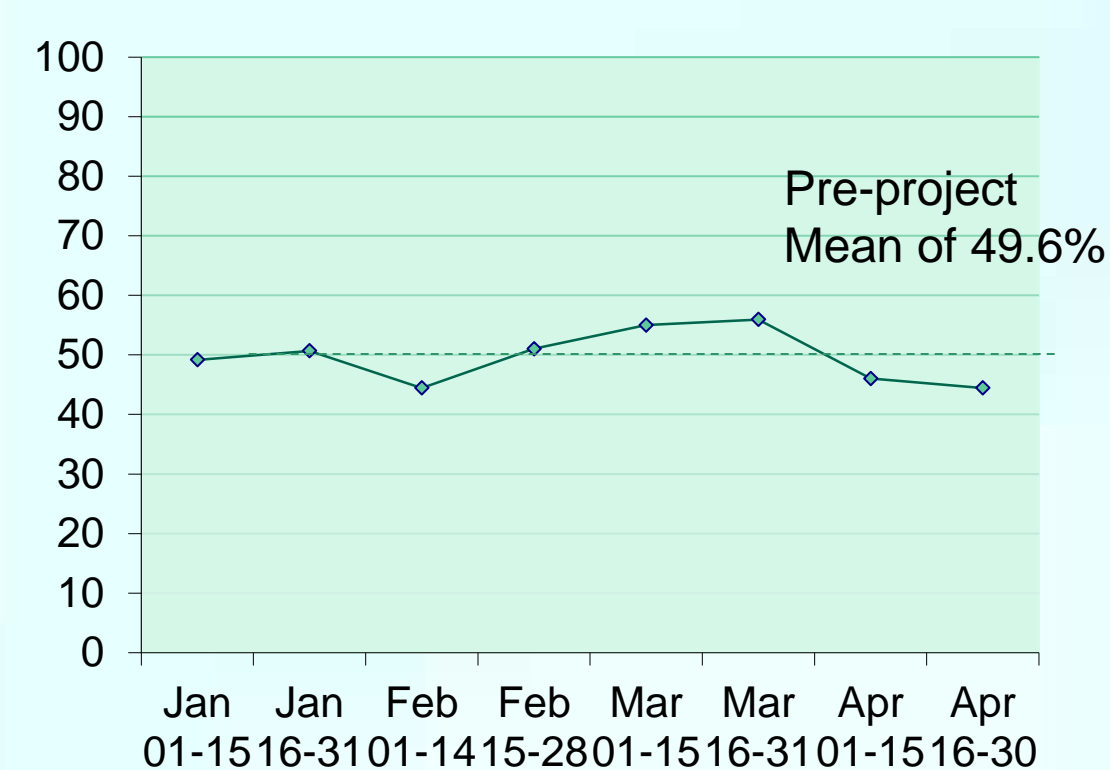
Evidence of a Problem Worth Solving

A Comparison between Different Polyclinics in National Healthcare Group Polyclinics (NHGP), 2013

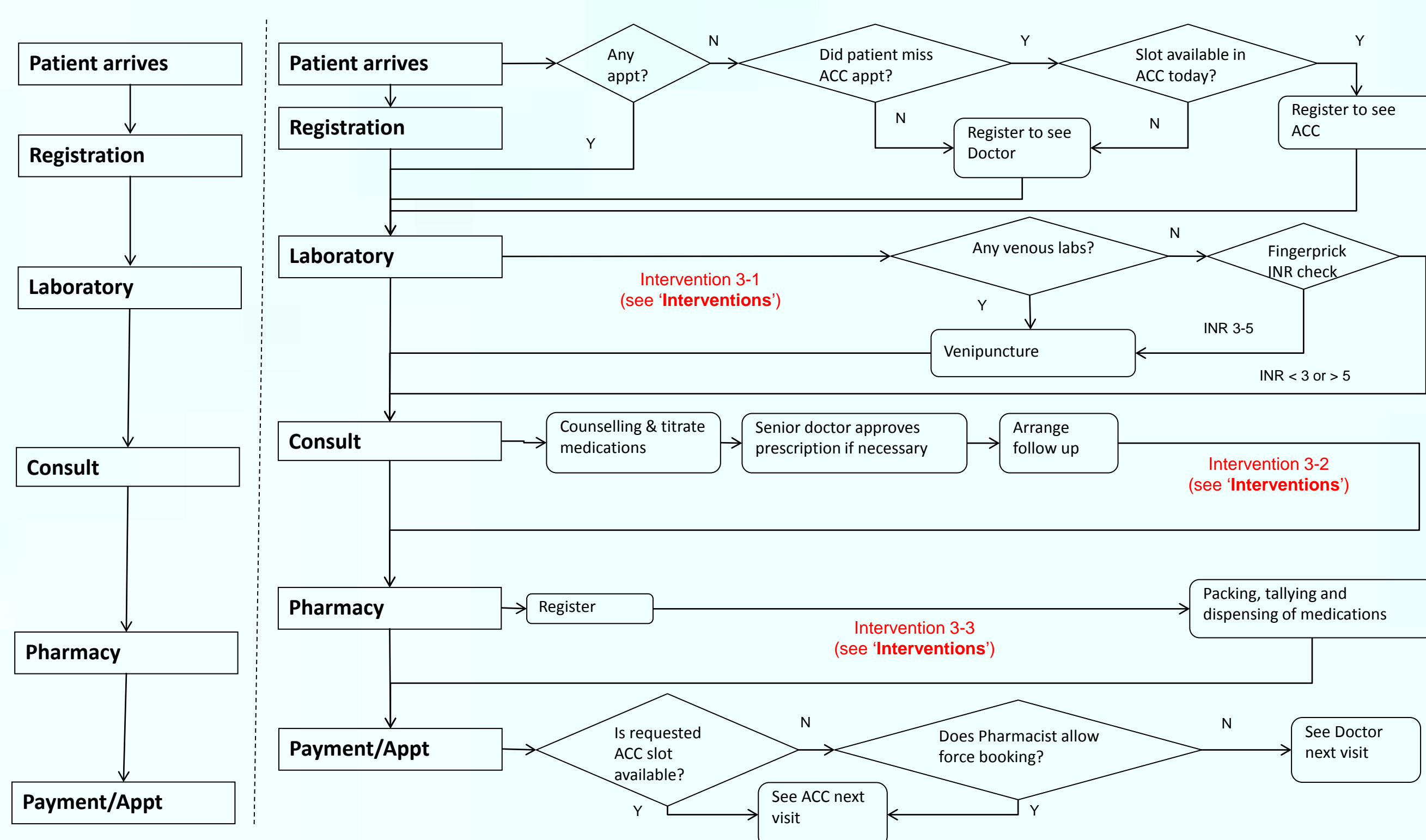
Percentage of Unique Patients on Warfarin who have seen the ACC at least once in 2013



Pre-project Run Chart for Patients on Warfarin who were seen by ACC at least once a year, in Toa Payoh Polyclinic (Jan – Apr 2014)



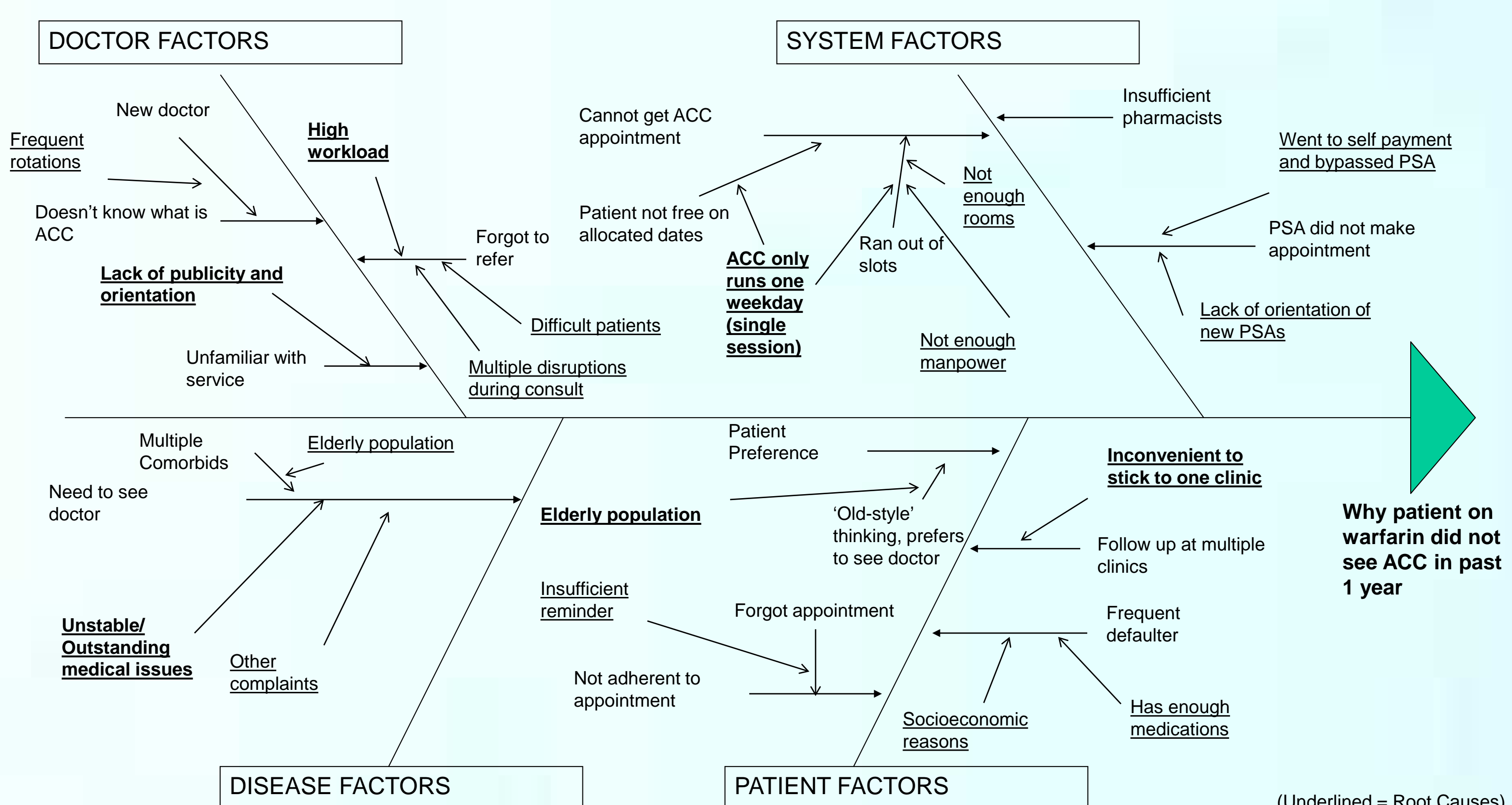
Flow Chart of Process



Patient Survey Result

- An opportunistic patient feedback session was conducted for 12 patients
- Results:
 - 12 of 12 patients didn't know about the ACC because 'doctor did not refer'
 - In addition:
 - 2 also needed to see a doctor for poor control of chronic diseases

Cause and Effect Diagram



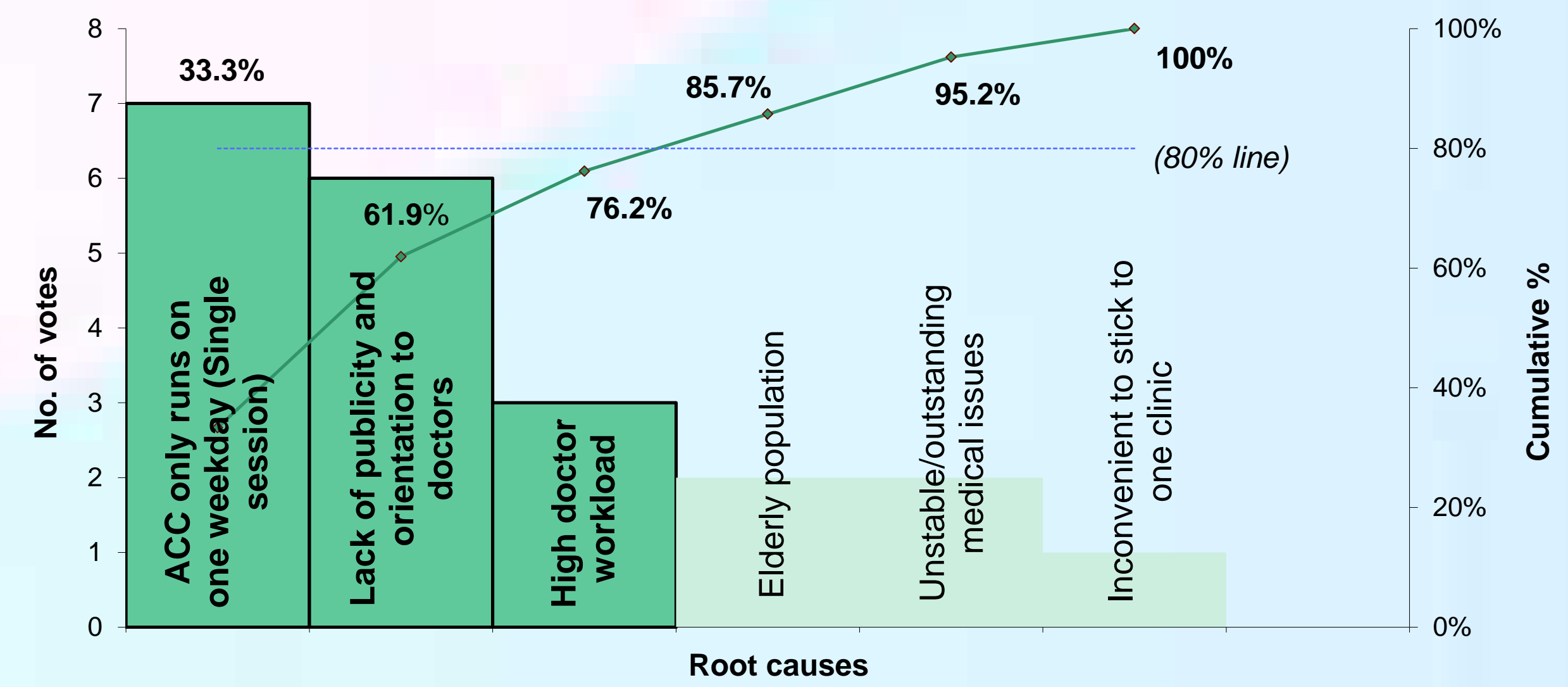
* Based on existing evidence:
 1. Evaluation of differences in percentage of International Normalised Ratios in Range between Pharmacist-Led and Physician Led Anticoagulation Management Services. Gupta V et al. J Pharm Pract. 2013 Dec.
 2. Health care expenditures and therapeutic outcomes of a pharmacist-managed anticoagulation service versus usual medical care. Hall D et al. Pharmacotherapy, 2011. Jul;31(7):686-94.
 3. Comparison of an anticoagulation clinic with usual medical care: anticoagulation control, patient outcomes, and health care costs. Chiquette E et al. Arch Internal Med, 1998 Aug 10-24; 158(15): 1641-7.

** Based on April 2008 NHG Pharmacy policy stating that pharmacists are required to provide education to patients on warfarin at least once a year.

^ Mean data from January 2014 to April 2014 for Toa Payoh Polyclinic

Pareto Chart

Pareto Chart for why Patients on Warfarin are not seen by the ACC Pharmacist at least once a year

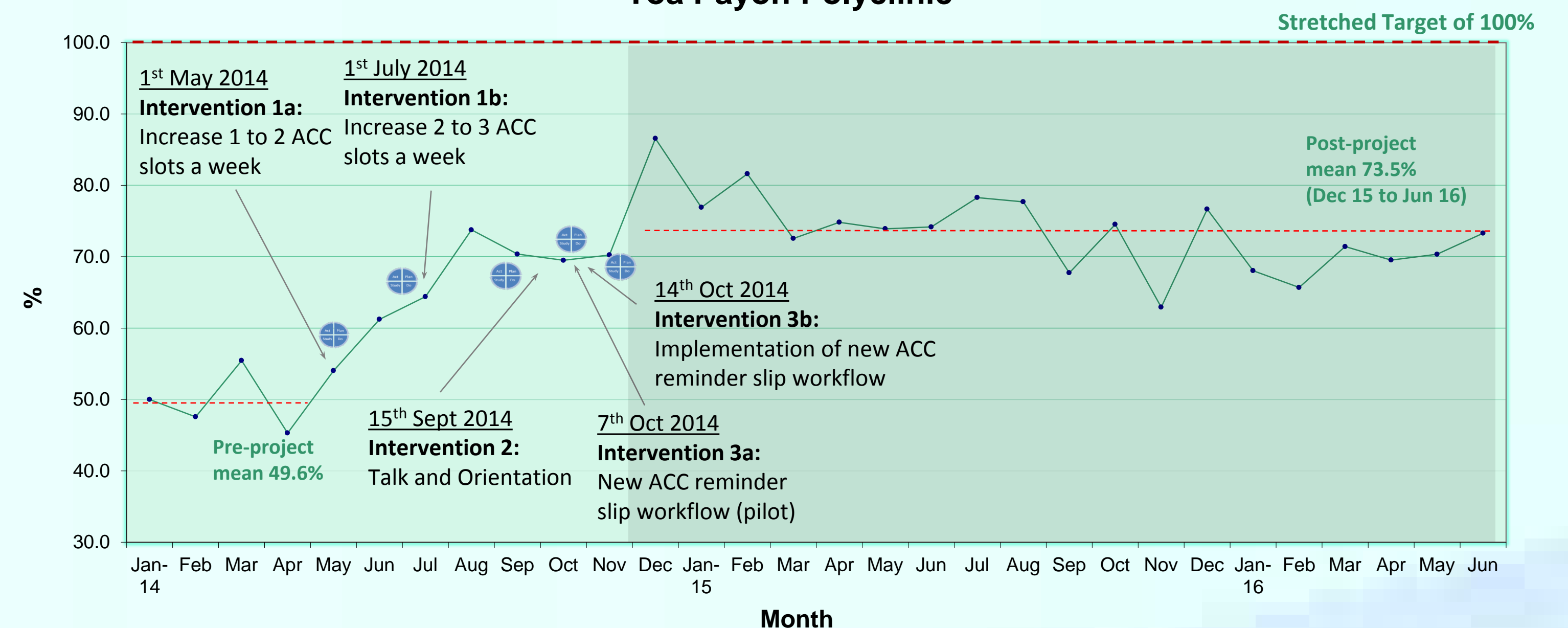


Interventions

ROOT CAUSE	PLANNED INTERVENTION / PDSA CYCLE	DATE OF IMPLEMENTATION
1 ACC only runs one weekday	• Opening of more slots - Started system to monitor ACC clinic utilisation rate and kept around 70-80%	• May (1a) and July 2014 (1b)
2 Lack of publicity and orientation to doctors	• Talk to raise awareness - Studied rate of missed referrals after talk to ensure talk was effective • Incorporated into new doctors' orientation slides (post project)	• September 2014 - Missed referrals studied 2 weeks pre and post talk • December 2014
3 High doctor workload	• Shift workload elsewhere with usage of 'ACC Reminder Slip' (see flow chart) 3-1. At LABORATORY – patients coming for International Normalised Ratio (INR) test get 'ACC Reminder Slip' stapled to appointment card on arrival by laboratory Patient Service Associate (PSA) 3-2. At CONSULT – Slip is removed after consult 3-3. At PHARMACY – Pharmacist/ Pharmacy Technician will call to check with doctor regarding ACC referral, if slip is still present AND patient is not referred to ACC	• October 2014 - Pilot (3a) was conducted 1 week before actual roll out (3b) - Feedback session carried out post pilot

Results

Run Chart for % of Patients on Warfarin who were seen by ACC at least once within the last year in Toa Payoh Polyclinic



Lessons Learnt /Benefits

- Right siting of patients at ACC for warfarin education**
 - Warfarin education done more routinely by ACC pharmacist than doctors
 - Allows doctors more time to focus on patients with other clinical issues
- In addition to warfarin education, regular siting of patients at the ACC can have more potential benefits**
 - Potentially similar, if not better clinical outcomes in ACC compared to physician clinics - shown in overseas studies 1,2,3
 - More time spent within target INR
 - Less emergency department visits and hospital admissions
 - Cost savings to patient seeing ACC 2,3

Strategies to Sustain and Spread

- Sustaining**
 - Ongoing orientation for new doctors
 - Closed loop system where patient enters the system with an 'ACC Reminder Slip' and leaves the system only when the 'ACC Reminder Slip' has been removed (and intention to refer verified if necessary)
 - Continued ACC utilisation monitoring and regular feedback from pharmacists for further refining of processes
- Spreading**
 - Senior management buy in
 - Work with NHG Pharmacists regarding manpower requirement
 - Identify clinics which may benefit most in terms of increased ACC referrals
 - Evaluate aspects of this project that need modification at these clinic levels