

To improve the percentage of patients achieving target INR in the Anti-Coagulation Clinic at Jurong Polyclinic

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Mission Statement

To improve the percentage of patients* achieving International Normalised Ratio (INR) within targeted range+ at Jurong Polyclinic Anticoagulation Clinic (ACC) from 47% to 80% within 6 months

- * Patients on lifelong warfarin who attended ≥ 2 consecutive ACC visits
- + Range is patient specific and pre-defined by physician

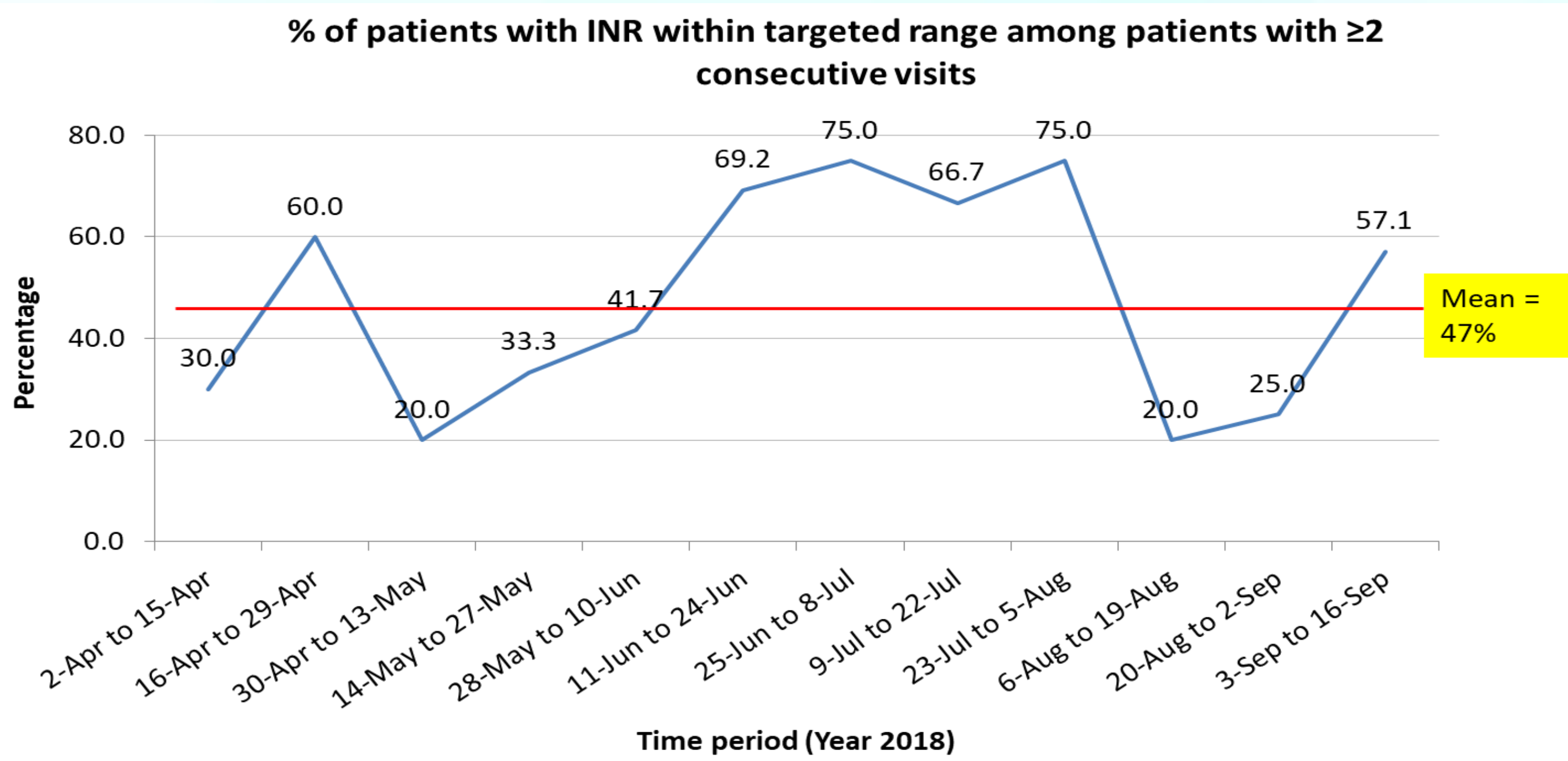
Team Members

Name	Designation	Role in this project
Kim Tan	Senior Pharmacist	Co- Leader
Mah Choon Siong	Senior Pharmacist	Co- Leader
Dr Goh Tien Siong	Senior Staff Family Physician	Member
Marvin Sim	Senior Pharmacist	Member
Nur Farhanna	Pharmacist	Member
Lim Li Ching	Deputy Director, Pharmacy Practice	Sponsor
Evonne Lee	Senior Clinical Pharmacist	ACC Advisor
3 patients with repeated ACC visits	Patient/ Caregiver	Patient/ Caregiver

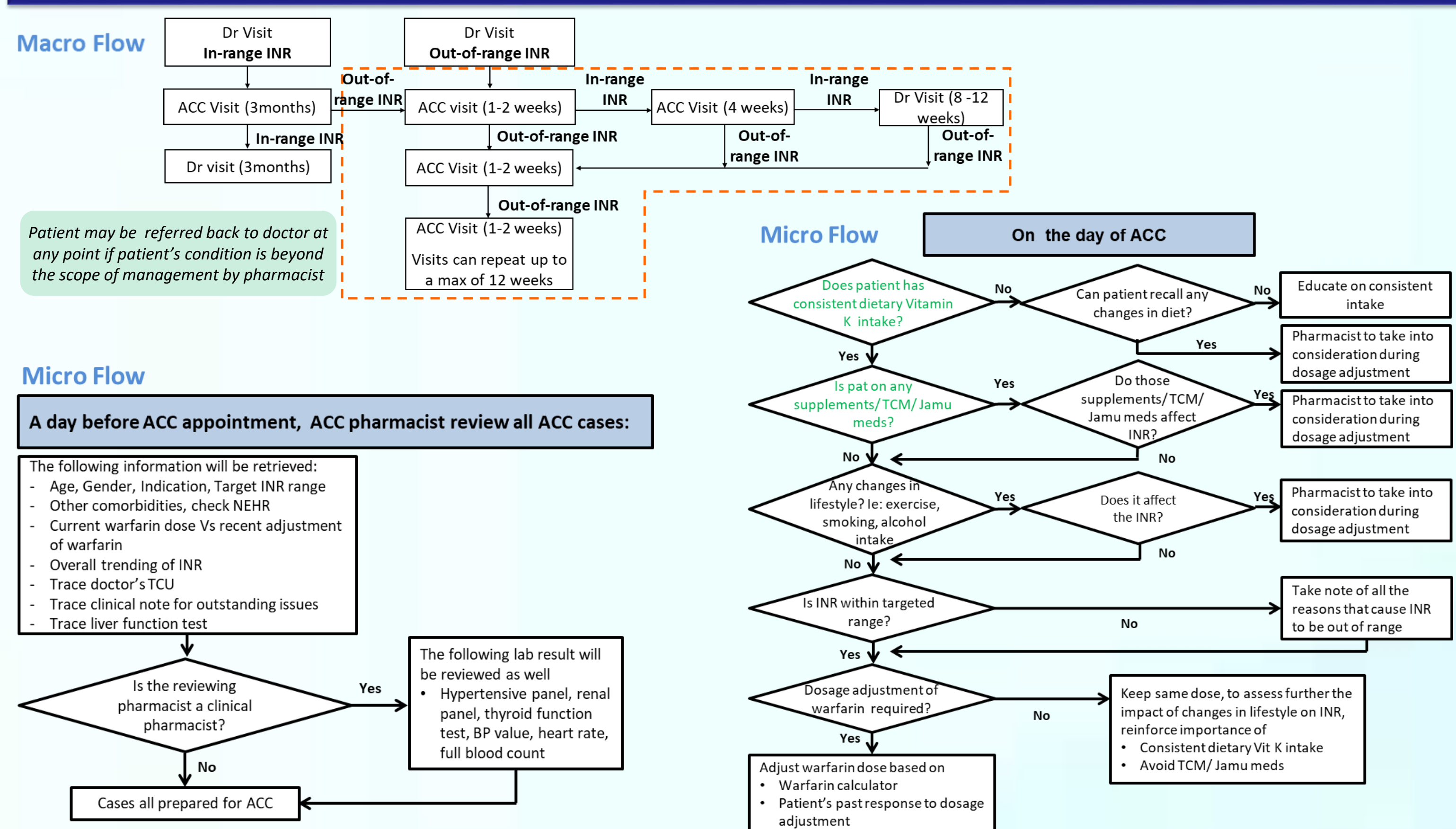
Evidence for a Problem Worth Solving

- Low percentage in patients who achieved their targeted INR range despite repeated ACC visits (47%)

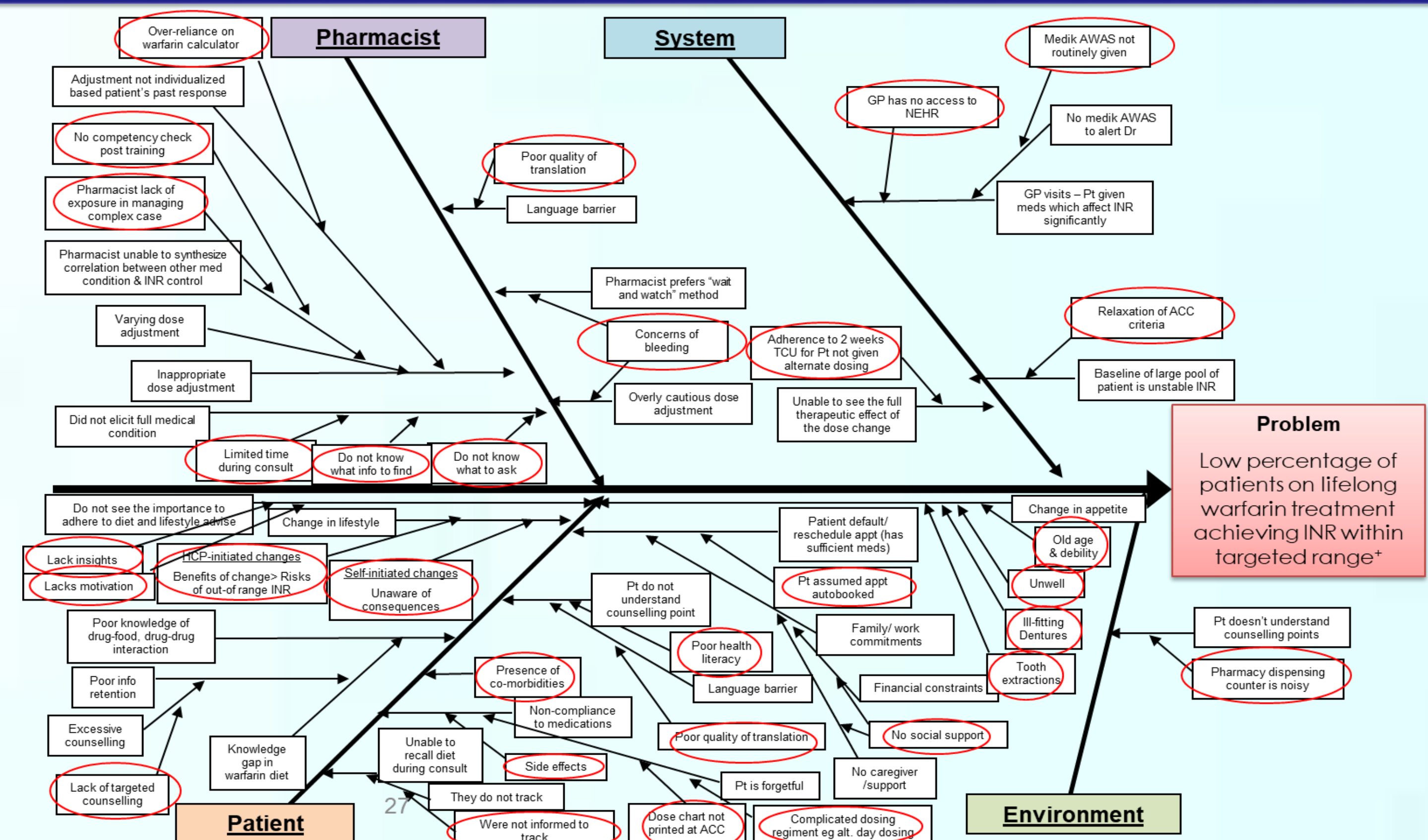
Current Performance of a Process



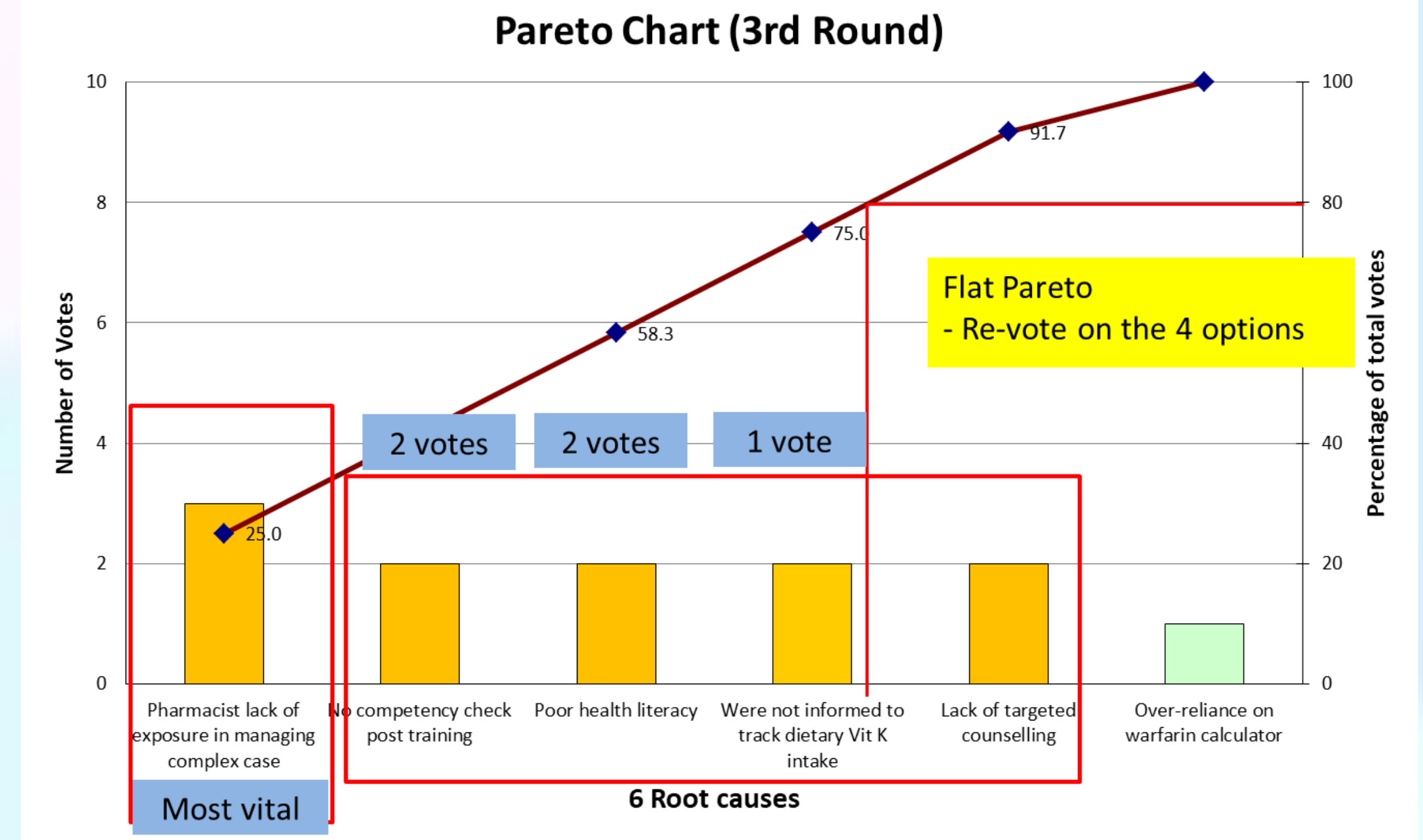
Flow Chart of Process



Cause and Effect Diagram



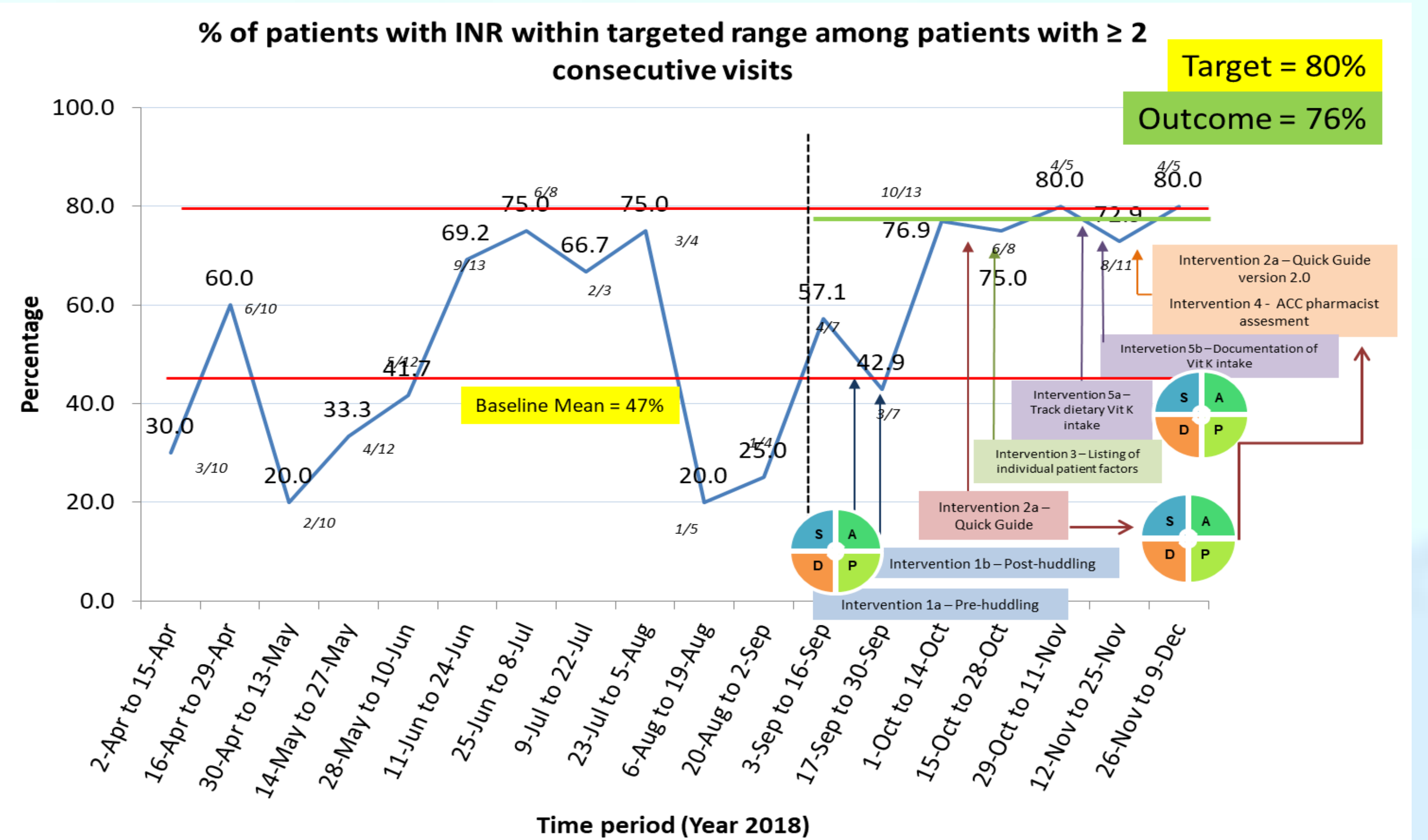
Pareto Chart



Implementation

Cause/ Problem	Intervention	Implementation Date
1. ACC Pharmacist lack of exposure in managing complex cases	1. Huddling pre / post ACC 2. Quick guide on factors affecting INR and monitoring parameter 3. Listing of factors affecting individual pat's INR under "important handover notes" in clinical documentation system (C-Doc)	Roll out by 28th Sept (After 1 round of PDSA) Roll out by 19th Nov (After 1 round of PDSA) Completed by 18th Oct
2. No competency check post training for ACC Pharmacist	4. ACC pharmacist competency assessment through direct observation	Completed by 20th Nov
3. Poor health literacy	5. Inform patient to track portioning of vegetables	Roll out by 15th Nov (After 1 round of PDSA)
4. Patient were not informed to track dietary Vit K intake		

Results



Cost Savings

- Direct cost savings from reduced number of ACC visits and INR lab test: **\$2578/year**
- Pharmacist FTE savings on reduced number of ACC: **1820 minutes/year**
- Estimated cost of avoidance (ECA) based on level 7 of ECA: 52 patients would have avoided thrombotic events by achieving their targeted INR range = **\$355,044/year**

Problems Encountered

- Lack of information on drug interactions between warfarin and local herbs
- Time consuming to clerk through the cases in details during the initial stage to consolidate factors affecting individual patient's INR
- Fish bowl effect when pharmacists were being audited during direct observations

Strategies to Sustain and Spread

- Continuous data collection and display on pharmacy dashboard
- Interventions implemented to be incorporated into training checklist for ACC pharmacist trainee
- Competency assessment through direct observation to be carried out yearly for all ACC pharmacist with internal benchmarking
- Sharing of the project to ACC pharmacist trainer from other branches during the monthly pharmacy meeting
- Formation of spread team