

To Increase the Proportion of Gout Patients Achieving Target Serum Uric Acid by 12 Months of Follow-Up

Dr Koh Li Wearn

Department of Rheumatology, Allergy & Immunology (RAI)

Mission Statement

To increase the percentage of newly diagnosed gout patient in TTSH RAI SOC to achieve target serum uric acid of below 350µmol/L* from 37% to 50% by 12 months of follow-up

* 2 levels of uric acid measurement done

Team Members

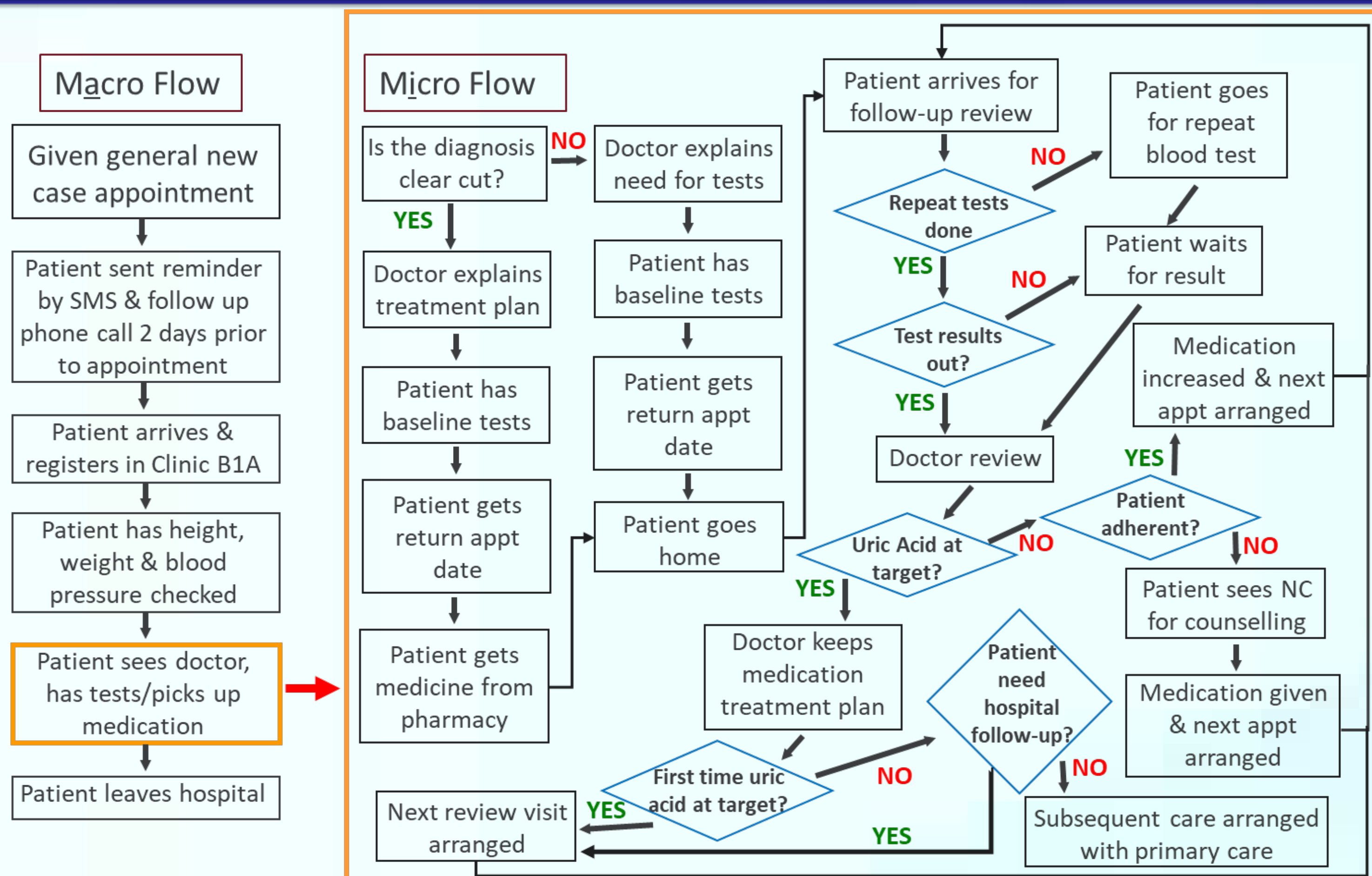
	Name	Designation	Department	
Team Leader	Dr Koh Li Wearn	Senior Consultant	RAI	
Team Members	Ms Xanthe Chua Bee Ling	Advance Practice Nurse		
	Ms Elsa Su Meizhen	Nurse Clinician		
	Dr Justina Tan	Senior Consultant		
	Ms Ang Bee Hwee	Principal Pharmacist		Pharmacy
	Mr Cheng Donghao	Operations Executive		Operations
	Dr Xu Chuanhui	Senior Resident		RAI (MOHH)
Dr Paula Tjokrosaputro	Senior Resident			
Sponsor	Adj A/Prof Kong Kok Ooi (HOD of RAI)			
Mentors	Adj A/Prof Hawkins Robert & Adj Asst Prof De Partha Pratim			

Evidence for a Problem Worth Solving

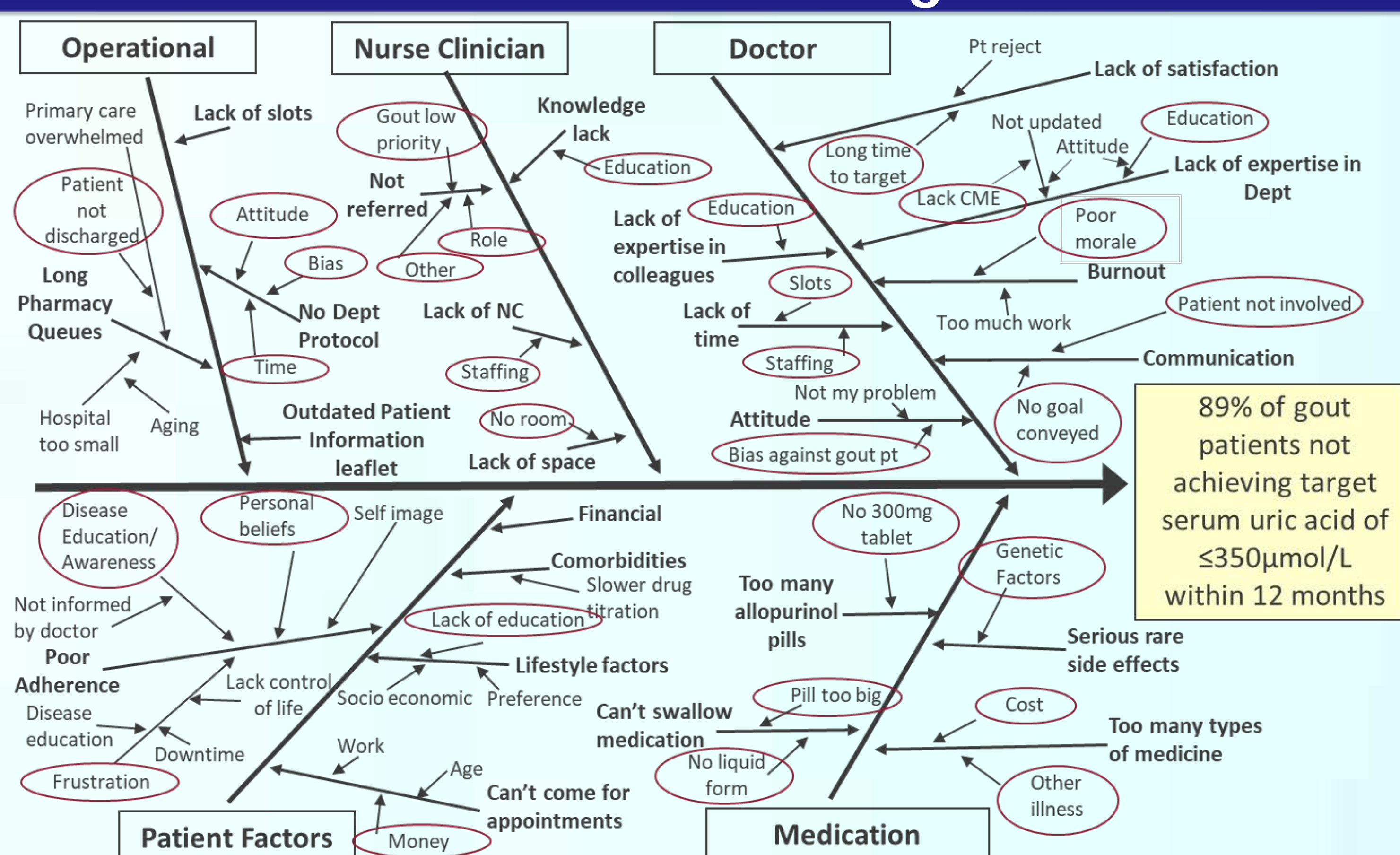
- Uncontrolled high uric acid increases likelihood for flares of gout.
- Large number of ED attendances with gout, including repeat attenders. → 901 ED attendances in a 12 month period (Aug 2017-Jul 2018) to TTSH ED of which 293 were repeat attenders.
- Majority of gout patients seen in RAI clinic take more than 1 year to reach target uric acid level.
- Extremely low numbers of gout patients in TTSH RAI clinic ever get sent back to primary care → Clogging up an already overstretched clinic.
- "Frequent flyers" and no shows further burden the system.

Description	No. of Patients	% of Total Listed Patients
Total Patients No. Listed	459	100%
<ul style="list-style-type: none"> Prescribed Gout-related medication (2018 Jan-Dec): AND With RAI appointments (actualized/planned) 		
(a) With uric acid tests done (in 2018)		
(b) Last prescribed Allopurinol (as based on 2018 data)		
(c) With last uric acid test <350µmol/L (as based on 2018 data)	50	11%
(d) With last TWO uric acid tests <350µmol/L (as based on 2018 data)		
(e) With planned appointment with RAI (as based on OCEAN data)		

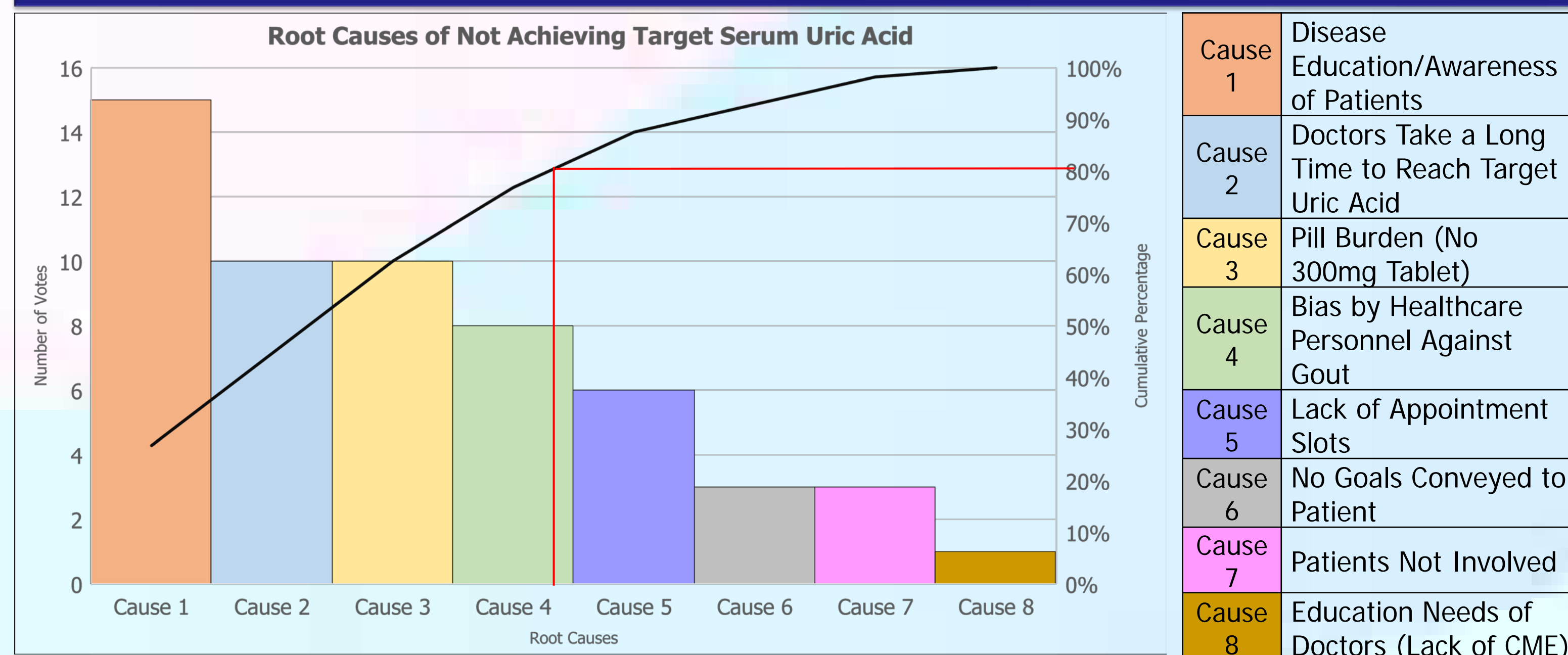
Flow Chart of Process



Cause and Effect Diagram



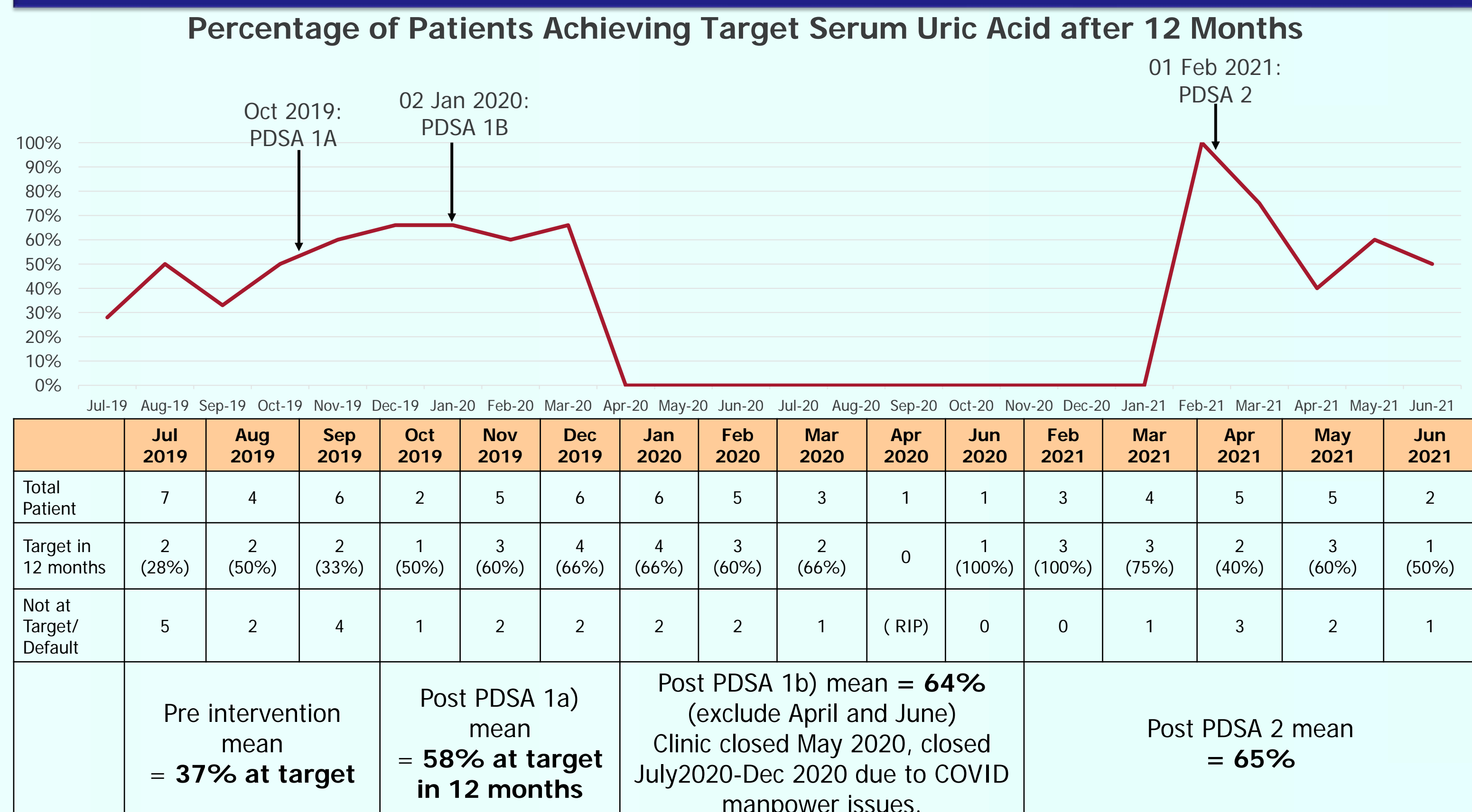
Pareto Chart



Implementation

Root Cause	Intervention	Implementation Date
Cause 1: Disease Education/Awareness of Patients	PDSA 1A: Revamp of Education Material for Patients	1 Oct 2019
	PDSA 1B: Standardization of Information and Language used during Counselling	2 Jan 2020
Cause 2: Doctors Take a Long Time to Reach Target Uric Acid	PDSA 2: To Develop a Uniform Protocol for Escalation of Medications by Developing & Implementing Local Management Guidance for Gout	1 Feb 2021

Results



Cost Savings

Assumption that all patients baseline characteristics are the same: Review of 10 patients from the SOC clinic who achieved serum uric acid target within 12 months.

	Pre-Intervention	Post-Intervention
Number (out of 10) Admitted to Hospital for Gout	4 Patients	0 Patients
Estimated Cost for Inpatient Stay per Patient	Assuming Median LOS for Gout as Inpatient = 3 days Estimated Cost = \$1114 x 3days = \$3342	
Cost Saved on Inpatient Admission when 10 Gout Patients Achieve Target Serum Uric Acid	Total Inpatient Cost Saved = \$3342 x 4 = \$13,368	

Problems Encountered

Issue	What was observed
Utilization of clinic slots and capacity for new cases	1. High no show rate (17/45) for first visit slots for gout patients in this one year, despite clinic PSA calling patient and sending SMS. 2. High no show rate for follow-up gout cases
Manpower	1. Resource intensive follow up to get patients to target ▪ Many visits ▪ Much time invested 2. Colleagues away on study / maternity / sick leave – affect sustainability of project.

Strategies to Sustain

Issue	Strategies to Sustain
Clinic Resource Utilization	1. First visit clinic is in a general new case clinic setting to allow more timely clinic appointments 2. Telehealth for follow up, with laboratory tests possible to be done in selected NHG Diagnostic centers in primary care setting.
Manpower	1. Cross coverage between different members of the multi-disciplinary team 2. Engaging primary care partners to continue follow up of stable patients