

Project Title

Reducing Sedating Antihistamine Prescriptions for Elderly Patients with Acute Upper
Respiratory Tract Infection

Project Lead and Members

Project lead: Dr Ong Wen Chong

Project members: Dr Todd On, Dr Leow Chee Yong, Ms Blessy Mathew, Ms Hai Wei
Ying, Ms Jannie Samontina

Organisation(s) Involved

National Healthcare Group Polyclinics

Healthcare Family Group(s) Involved in this Project

Allied Health, Medical, Nursing

Applicable Specialty or Discipline

Family Medicine, Pharmacy

Project Period

Start date: 01 Oct 2018

Completed date: 31 Mar 2021

Aims

To reduce prescriptions of sedating antihistamines among elderly patients aged 65
years old and above seen by all clinicians at Toa Payoh Polyclinic for acute upper
respiratory tract infection from 54.0% to 0% over 6 months.

Project Attachment

See poster attached/below

Background

See poster attached/below

Methods

See poster attached/below

Results

See poster attached/below

Conclusion

See poster attached/below

Additional Information

Accorded the NHG Quality Day 2021 (Category A: Improving and Sustaining Quality & Safety) Merit Award

Project Category

Care & Process Redesign

Value Based Care, Safe Care

Quality Improvement, Clinical Practice Improvement

Keywords

URTI, Sedating Antihistamine, Elderly Patient

Name and Email of Project Contact Person(s)

Name: Dr Ong Wen Chong

Email: Wen_Chong_Ong@nhgp.com.sg

Reducing Sedating Antihistamine Prescriptions for Elderly Patients with Acute Upper Respiratory Tract Infection

Dr Ong Wen Chong, Medical

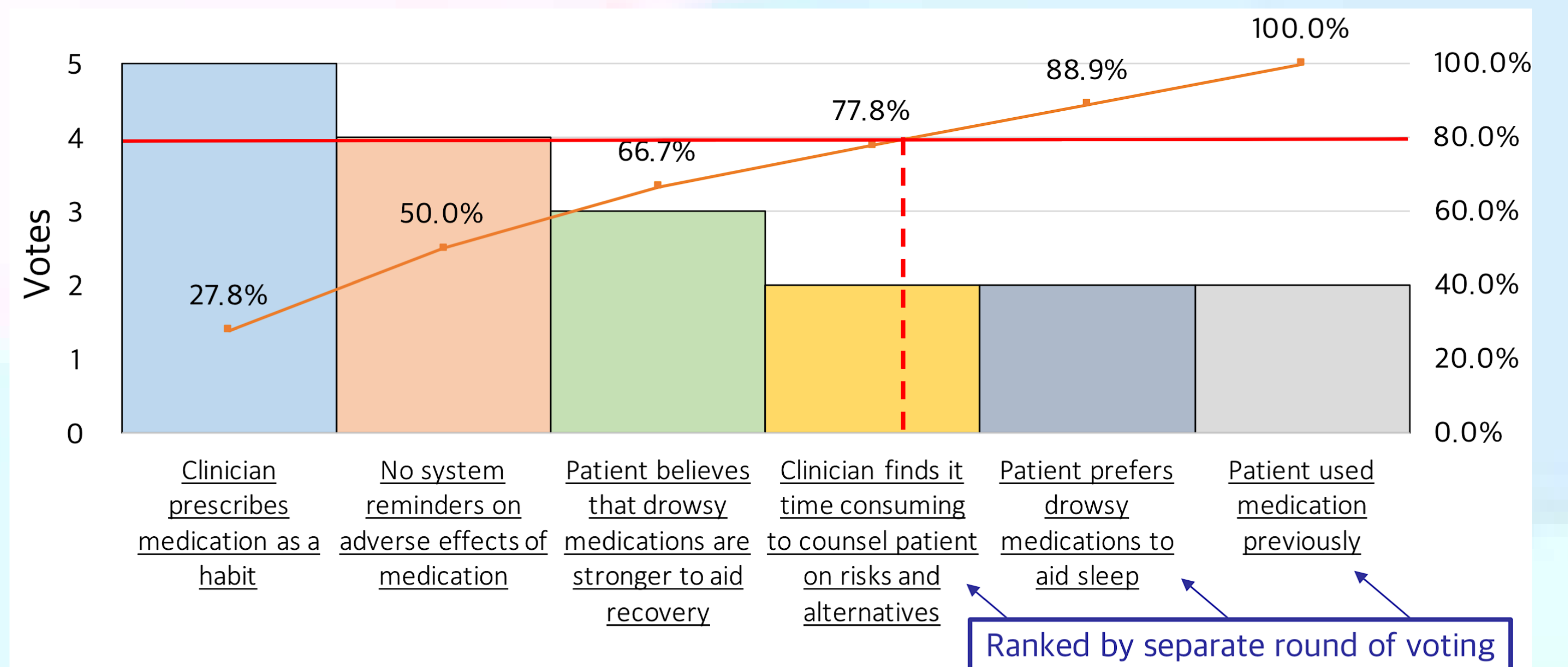
Mission Statement

To reduce prescriptions of sedating antihistamines among elderly patients aged 65 years old and above seen by all clinicians at Toa Payoh Polyclinic for acute upper respiratory tract infection from **54.0%** to **0%** over 6 months.



Photo taken before COVID-19

Pareto Chart



Team Members

	NAME	DESIGNATION	DEPT
Team Leader	Dr Ong Wen Chong	Resident	Medical
Team Members	Dr Todd On	Family Physician, Medication Management & Utilization Committee (MMUC)	Medical
	Dr Leow Chee Yong	Medical Officer	Medical
	Ms Blessy Mathew	Advanced Practice Nurse	Nursing
	Ms Hai Wei Ying	Head Pharmacist	Pharmacy
	Ms Jannie Samontina	Senior Pharm-Tech	Pharmacy
Sponsor	Dr David Ng	Head, TPY Polyclinic	Medical
Facilitator	Dr Kee Kok Wai	Family Physician	Medical

Implementation

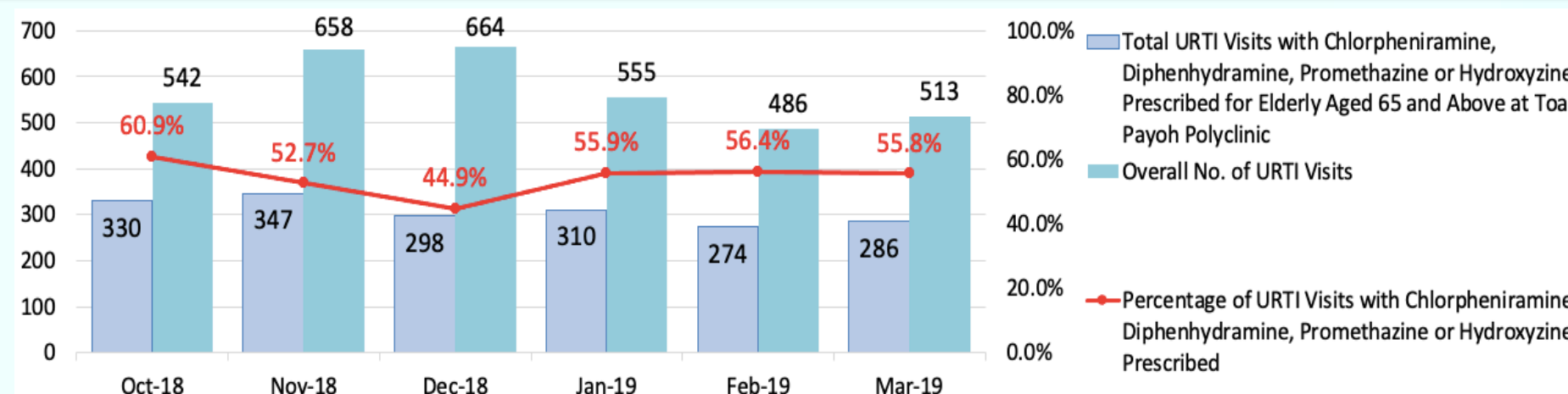
PROBLEM	INTERVENTION	DATE	PROCESS / BALANCE MEASURE
1) Clinician prescribes medication as a habit	• Educational talk targeting habit change in clinicians. • 2-weekly updates on the clinic's prescription rates.	30 th Apr 2019	• Surveys: Pre-talk, immediate post-talk & 1 month post-talk
2) No system reminders on adverse effects of medication	Pharmacy reminder workflow: • Clinician to remark "risks explained" for prescriptions. • If no remarks written, pharmacist at reception counsels patient.	27 th Jun 2019	• % Prescriptions with remarks by clinicians, PT interventions for indicated cases, PT interventions accepted • Pharmacists' feedback
3) Patient believes drowsy meds are stronger to aid recovery	Patient education posters on the limited efficacy and risks of sedating antihistamines in elderly.	23 rd Sep 2019	• Patients' survey • Clinicians' survey • Pharmacists' feedback

Evidence for a Problem Worth Solving

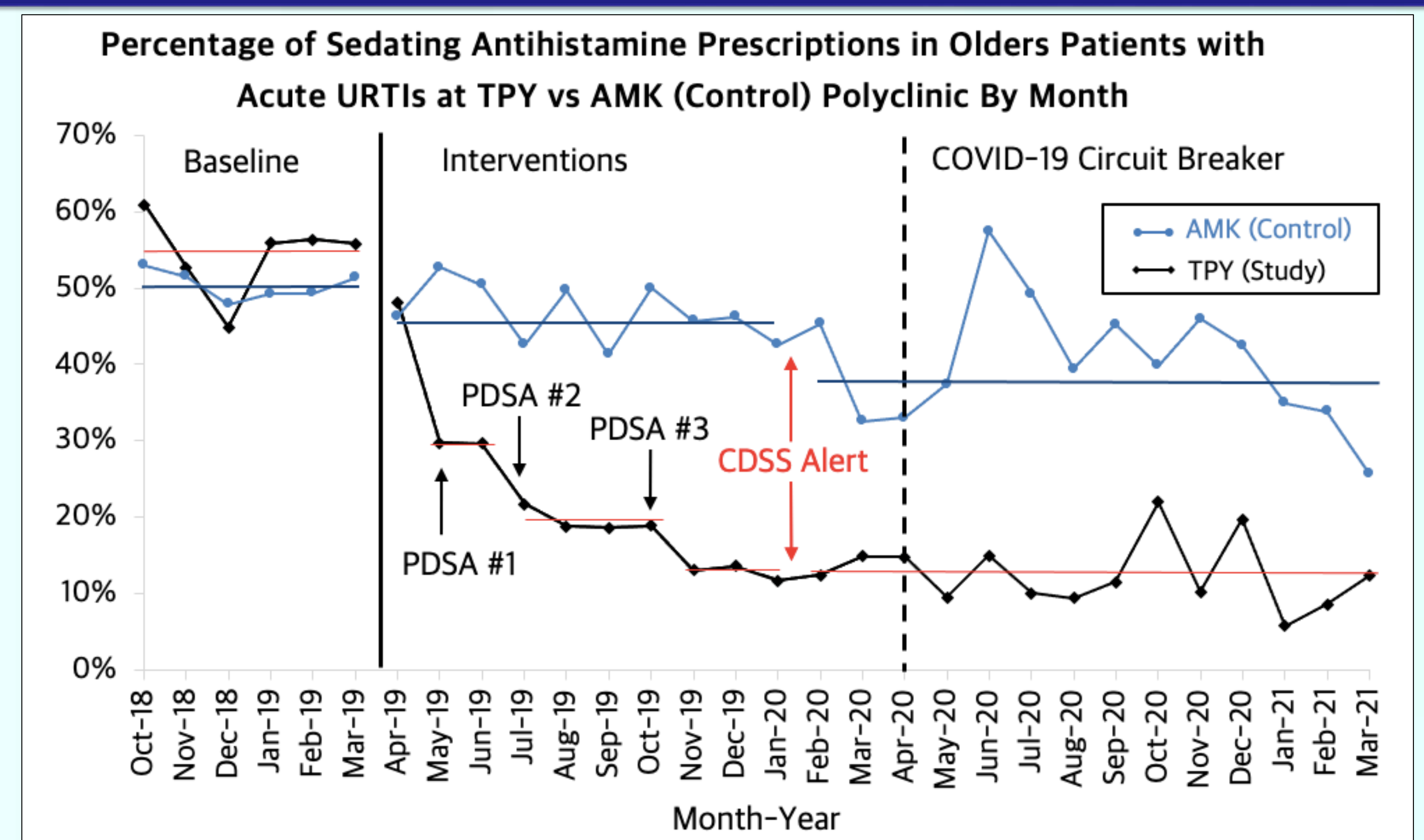
- The American Geriatric Society Beers' Criteria recommends strongly against sedating antihistamine use in elderly due to anticholinergic side effects, such as urinary retention, constipation, falls & dementia.¹⁻⁴
- An American study found prescription rates of 23.3% for elderly patients⁵, while a Japanese study found a rate of 32.1% for elderly.⁶

Current Performance of a Process

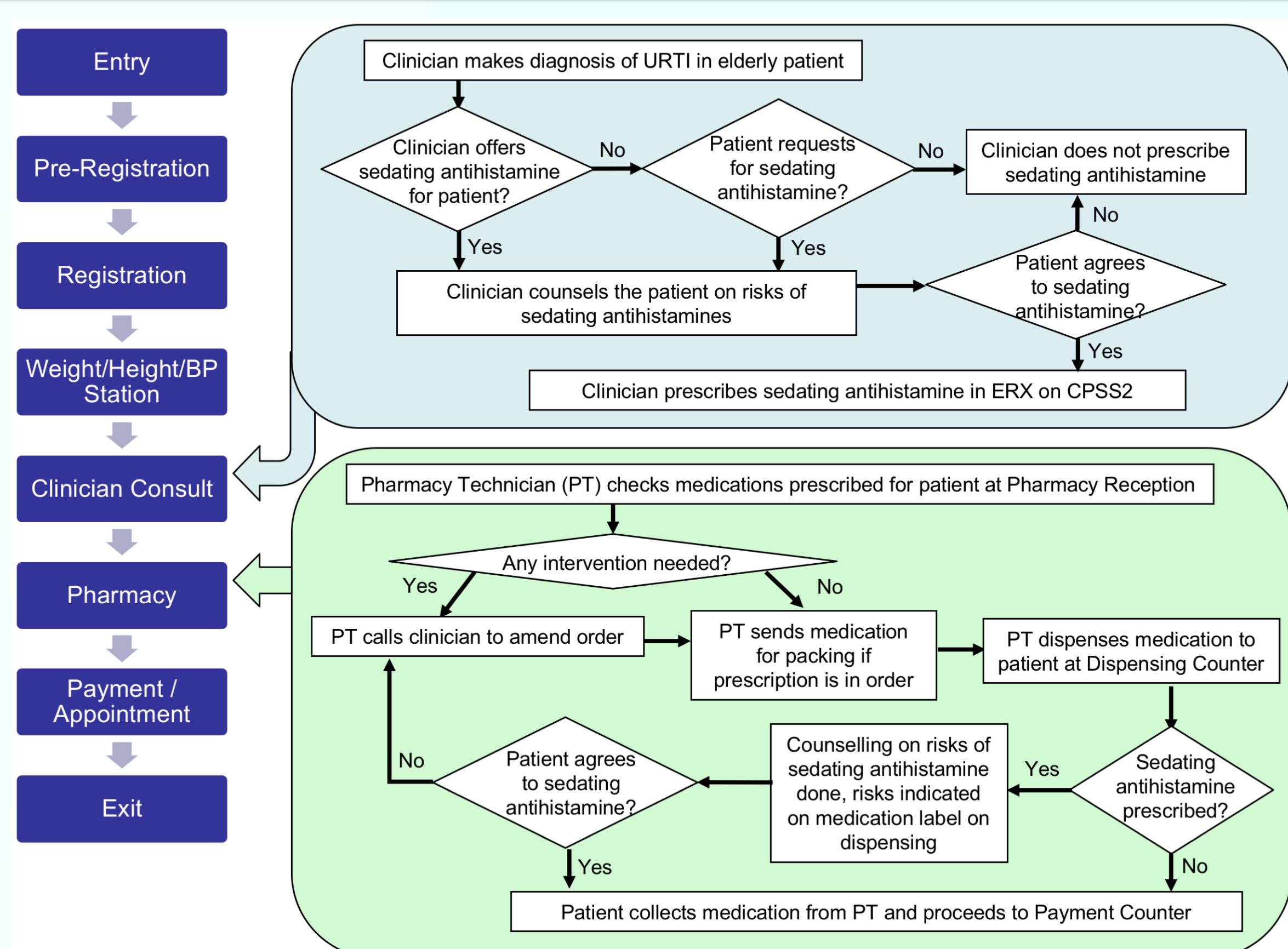
Sedating antihistamines were prescribed for **54.0%** of elderly with acute URTIs at Toa Payoh Polyclinic.



Results



Flow Chart of Process



Cost Savings

- Following the 3 interventions, prescription rates decreased from **54.0%** at baseline to a stable mean of **12.8%** from Nov 2019 to Jan 2020 (absolute reduction **41.2%**, relative reduction **76.2%**).
- Estimated no. of de-prescriptions at TPY Polyclinic is 2800 per year.
- Annual healthcare cost savings per patient above is estimated S\$526.⁷
- Estimated cost saving per year from interventions is **S\$1.5 million**.

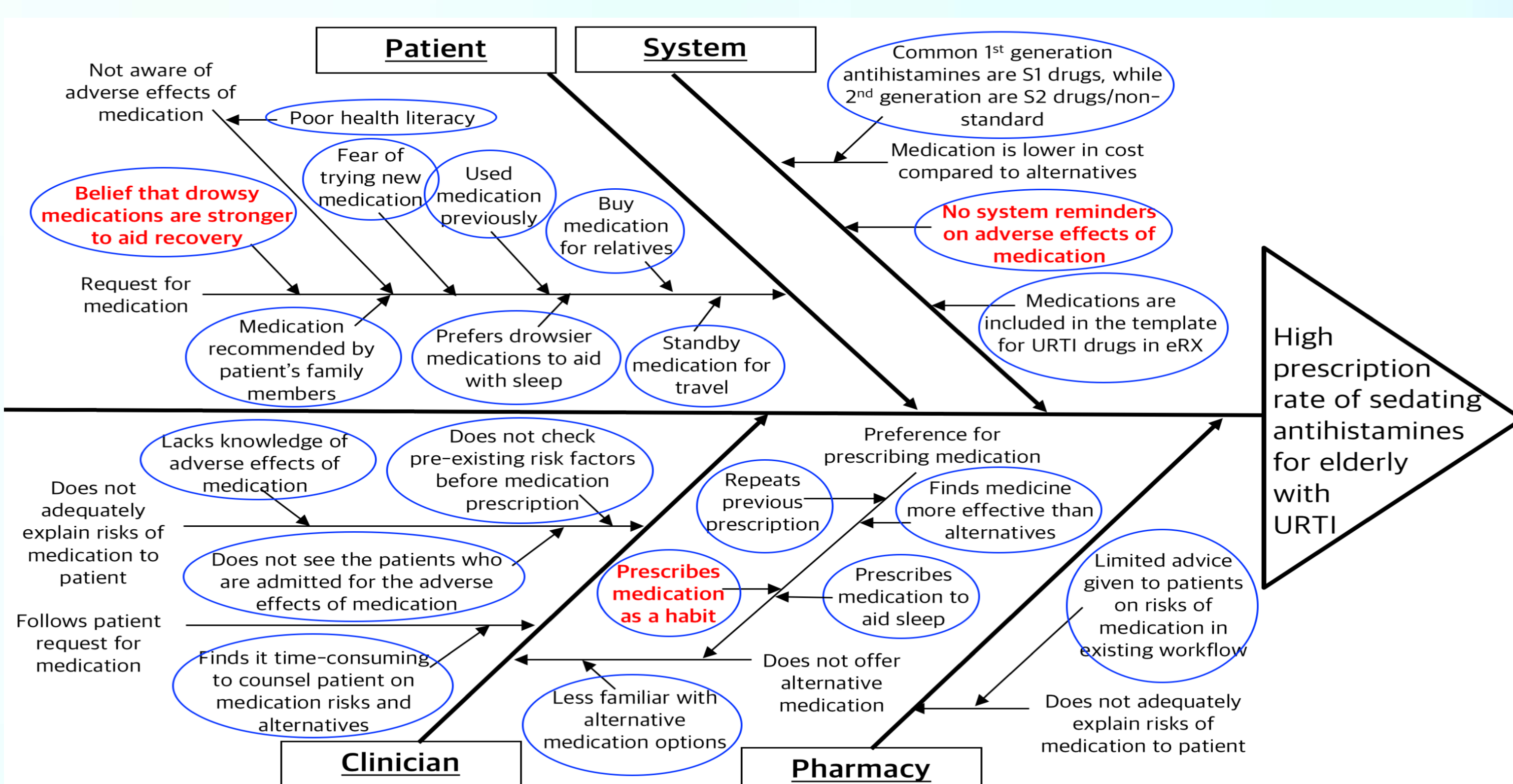
Problems Encountered

- Team initially had difficulties with defining the problem's root causes. A pre-talk survey carried out was helpful for the team's understanding.
- Team wanted an electronic clinical decision support system (CDSS) alert as a systemic reminder, but it could not meet the initial timeframe.
- Pharmacy reminder workflow risked creating a patient bottle-neck at the reception counter. Team worked closely with pharmacists and kept open communication for continual ground feedback if issue arose.

Strategies to Sustain & Spread

- Multifaceted interventions, which targeted changing prescription habits, sustained SA prescription rates at **12.8%** from Feb 2020 to Mar 2021.
- Educational talk materials added to new TPY doctors' induction talk.
- Collaboration with NHG Pharmacy & MMUC to share interventions and education materials in the future.
- System-wide electronic CDSS alert was implemented on 15th Jan 2020 across NHG polyclinics with MMUC's help. Sedating antihistamine prescription rates (excluding TPY and Geylang polyclinic) were reduced from an average of **47%** (FY19) to **34%** (FY20) after implementation.

Cause and Effect Diagram



References: 1. Fennberg M. The Problems of Anticholinergic Adverse Effects in Older Patients. *Drugs & Aging*. 1993;3(1):335-348. 2. Church M, Maurer M, Simons F, Bindslev-Jensen C, van Cauwenberge P, Bouquet J et al. Risk of first-generation H1-antihistamines: a GALEN position paper. *Allergy*. 2010;65(4):459-466. 3. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. *Journal of the American Geriatrics Society*. 2019;67(4):674-94. 4. Couland C, Hill T, Deering T, Morris R, Moore M, Hippoly-Cox J. Anticholinergic Drug Exposure and the Risk of Dementia. *JAMA Internal Medicine*. 2019 (published 24 June 2019). 5. Sara S, Carashan R, Chen H, Aparasu R. Prevalence and Determinants of Anticholinergic Medication Use in Elderly Dementia Patients. *Drugs & Aging*. 2013;30(10):837-844. 6. Maeda T, Babazono A, Nishi T. Surveillance of First-Generation H1-Antihistamine Use for Older Patients with Dementia in Japan: A Retrospective Cohort Study. *Curr Gerontol Geriatr Res*. 2018;2018:1-4. 7. Hay JW, Leahy M. Cost and Utilization Impacts of Oral Antihistamines in the California Medi-Cal Program. *Value in Health*. 2005;6(4):506-16.