

Mission Statement

To improve the appointment actualisation rate of Foot Surveillance (FS) programme from 72.4% to 100% over 6 months from June 2022 to November 2022 in Toa Payoh Polyclinic.

Team Members

Role	Name	Designation	Department
Team Leader	Dr Wu Wei	Family Medicine Resident	Medical
Advisor	Dr Elaine Tan	Associate Consultant Family Physician	Medical
Team Members	Ms Chang Xiao Pei	Foot Surveillance Senior Staff Nurse	Nursing
	Ms Lam Hui Chi	Diabetic Foot Screening Staff Nurse	Nursing
	Ms Jovin Ong Hong Hui	Operations Executive	Operation
	Ms Tang Qing Ying	Senior Patient Service Associate	Operation
Facilitator	Dr Ian Koh Jan Ming	Associate Consultant Family Physician	Medical

Evidence for a Problem Worth Solving

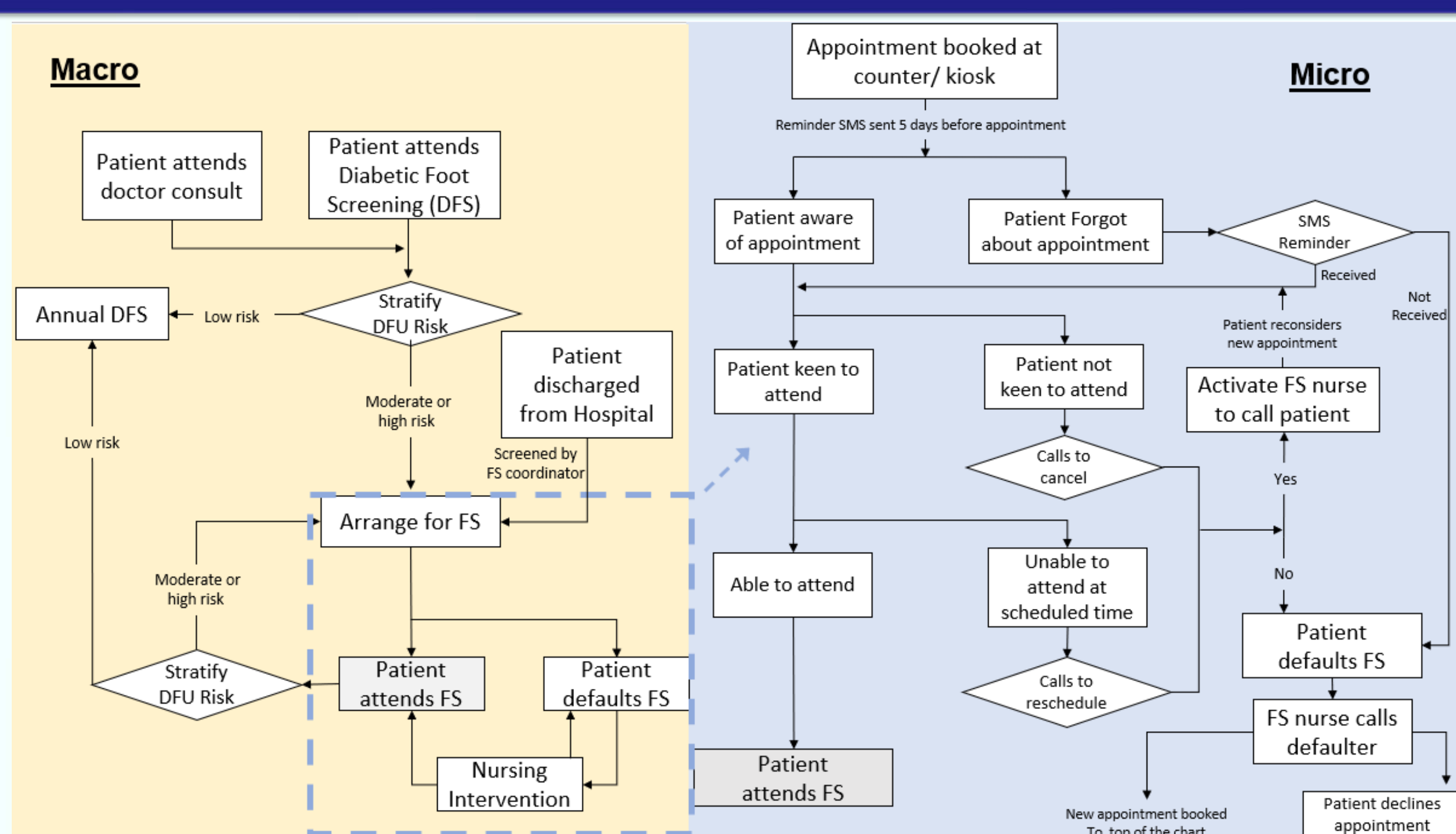
Singapore has one of the highest diabetes-related lower extremity amputation (LEA) rates in the world in a paper published in 2016.¹ To enhance care for patients with DM and help prevent DFU-related amputations, the National Healthcare Group (NHG) started the Diabetic Foot in Primary and Tertiary (DEFINITE) Care programme in June 2020. As an integral part of NHG DEFINITE care programme, NHG Polyclinics Foot Surveillance programme aims to provide education and early prevention treatment to diabetic patients at moderate to high risk of diabetic foot complications. Unfortunately, many patients fail to understand the importance of FS requiring 4 to 6-monthly reviews and default the appointments. As such, we hope to improve actualisation of FS appointments to minimise diabetic foot complications in these patients.

Current Performance of a Process

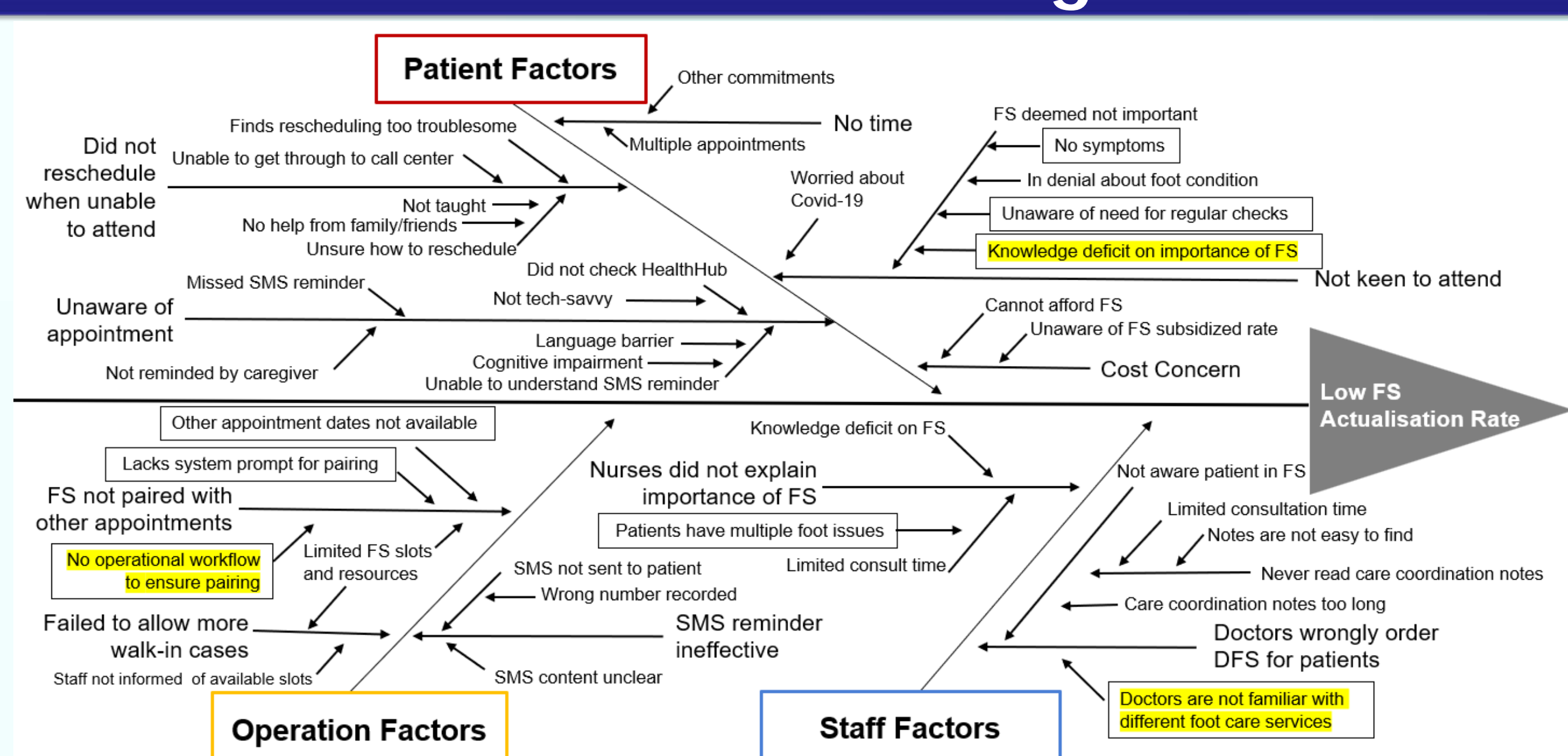
Current average FS appointment actualisation rate 6 months prior to the start of our project was 72.4%.

Defaulters tend to be: 1) Age 85 years old and above; 2) First visit appointments; 3) FS appointment not paired with any other appointment. Top reasons for defaulting appointments when patients or caregivers were interviewed: 1) Feels there is no need to come for appointment; 2) Unable to come due to other commitments; 3) Not aware of the appointment.

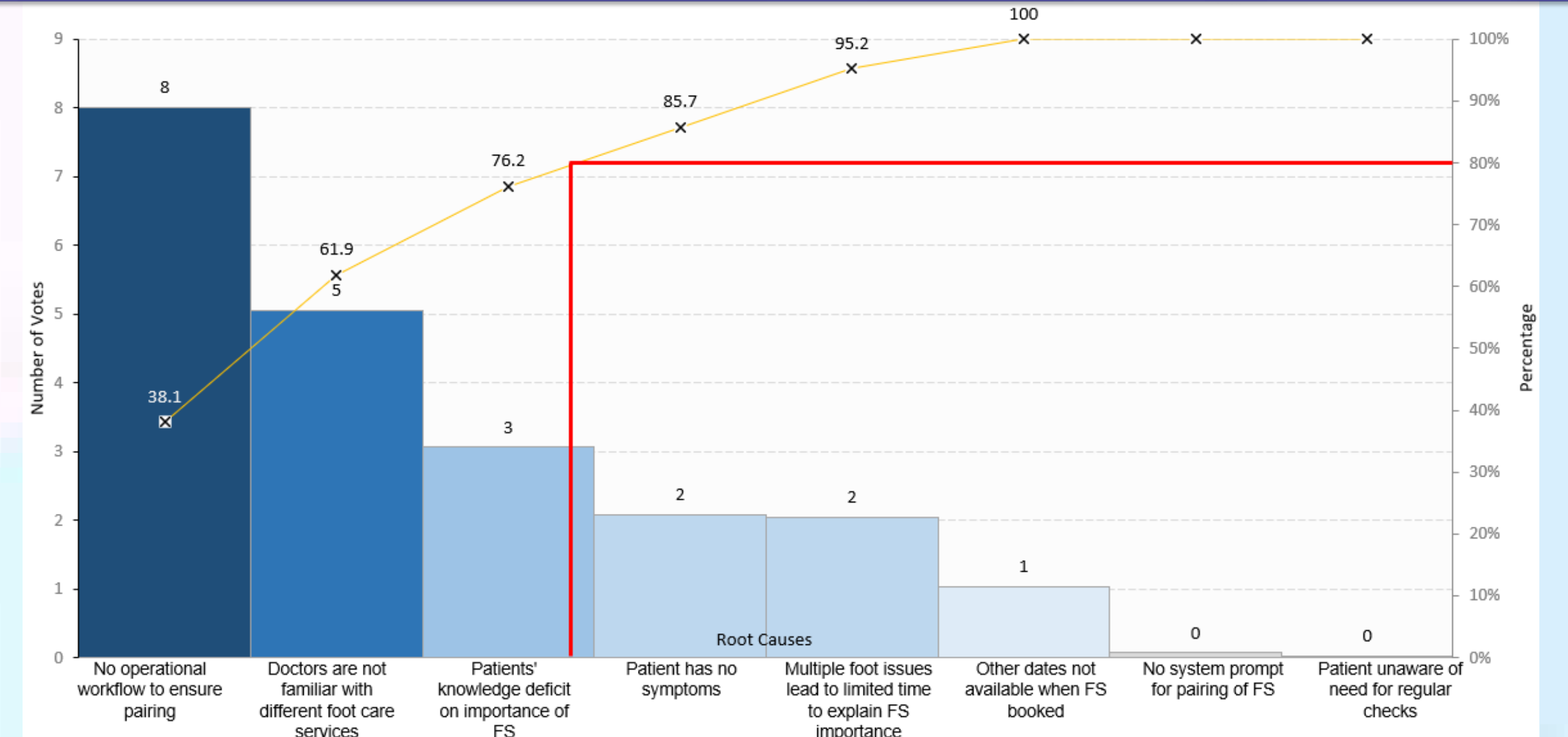
Flow Chart of Process



Cause and Effect Diagram



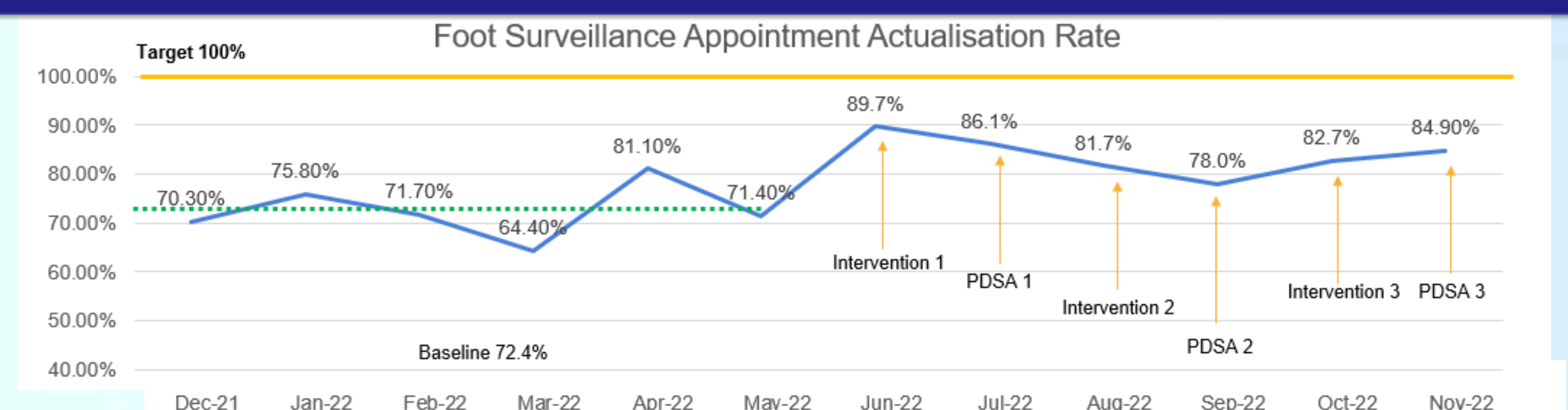
Pareto Chart



Implementation

Problem	Intervention	Date
No operational workflow to ensure pairing	Manual pairing of FS with other existing appointments that falls within 1 month	Jun 2022
	1st PDSA: Interview with operation staff found an obstacle to pairing of appointment as each patient could only be booked into either first visit or repeat visit appointment slots. Decision was made to remove such restriction and allow free booking of appointments.	Jul 2022
Doctors are not familiar with different foot care services	Clinic-based lunchtime Continuing Medical Education (CME)	Aug 2022
	2nd PDSA: Pre and post presentation quizzes showed significant improvement of test score from average 25% to more than 80% at the end of the sharing. 1-page summary information sheet of key concepts of presentation was sent to 12 doctors who did not attend our CME session.	Sep 2022
Patient's knowledge deficit on FS	Patient education posters on FS service were used by DFS nurses to convince patients who are referred to FS clinic.	Oct 2022
	3rd PDSA: Chinese version of poster was rolled out in Nov 2022 to allow patients to understand poster information better and reduce nursing workload. Survey showed that 100% patients felt that information provided helped them understand their DFU risks and appropriate foot care services better.	Nov 2022

Results



Overall, this project saw a consistent increase and maintenance in the percentage of FS appointment actualized from baseline of 72.4% to 78.0-89.7% over 6 months of intervention in Toa Payoh Polyclinic.

Cost Savings

As of June 2021, the DEFINITE Care programme preliminary data showed a 40% reduction in major LEA rates and a 80% reduction in minor LEA rates.² We believe that as an integral part of the NHG DEFINITE programme, better FS actualisation rate would contribute to further reduction of LEA rates and cost associated (Historically, each minor amputation cost about \$14,845, major is \$42,730)³.

Problems Encountered

- 1) Delayed impact of interventions such as patient and staff education;
- 2) Multiple incidences of IT system downtime resulting in patients not actualizing their FS appointments despite interventions;
- 3) Lack of accessibility and efficiency of call centres or alternative platforms for more hassle-free rescheduling of appointment.

Strategies to Sustain

- 1) Continued education and reminder to HCPs to improve their knowledge to allow them to order appropriate foot services for DM patients;
- 2) Adding notes to queue management system (QMS) to remind staff about FS defaulters, to facilitate counselling and education of importance of foot care to these patients;
- 3) More could be done to automate the process of pairing.

REFERENCES

1. "New Strategic Framework to empower clinical management of diabetic foot complications" MOH New Highlights, 14 Nov 2018, <https://www.moh.gov.sg/news-highlights/details/new-strategic-framework-to-empower-clinical-management-of-diabetic-foot-complications>. Accessed 1 Dec 2022.
2. "New Diabetes Foot Care Programme Drives Positive Patient Outcomes, Reduces Risk of Lower Extremity Amputation" Singapore Health & Biomedical Congress Press Release, 1 October, 2021, https://corp.nhg.com.sg/Media%20Releases/SHBC_press%20release.pdf. Accessed 1 Dec 2022.
3. Lo ZJ, Surendra NK, Saxena A, Car J. Clinical and economic burden of diabetic foot ulcers: A 5-year longitudinal multi-ethnic cohort study from the tropics. Int Wound J. 2021;18(3):375-386. doi:10.1111/iwj.13540