

Mission Statement

To improve the percentage of referrals to pharmacist-led smoking cessation clinic (SCC) amongst identified adult smokers^a with Asthma/Chronic Obstructive Pulmonary Disease (COPD)^b from 0% to 15% in Geylang Polyclinic from February 2021 to June 2021.

^a Smokers are defined as those smoking 1 or more cigarette sticks per day, excluding those with a previous referral in the last 6 months

^b Patients with diagnosis of asthma/ COPD who were prescribed an inhaler

Team Members

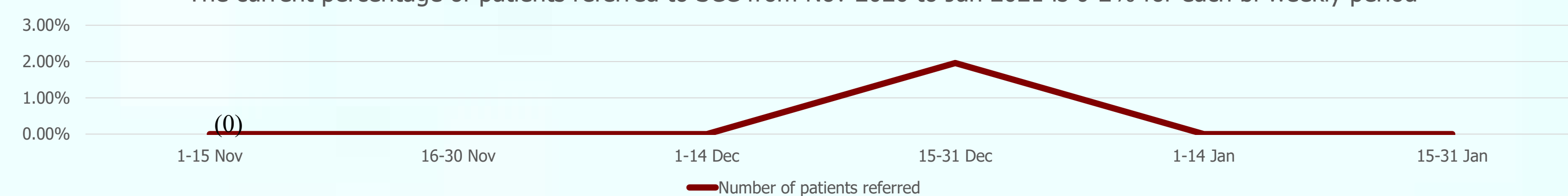
Name	Designation	Department	Role
Dr Lim Wan Xuan Jessica	Resident	Medical	Leader
Dr Liu Chang Wei	Family Physician	Medical	Facilitator
Ms Tan Sui Ping	Pharmacist	Pharmacy	Member
Ms Jasmin Sim Poh Eng	Care Manager	Nursing	Member
Mr Lawrence Choo Ren Jie	Operations Executive	Operations	Member
Ms Jayalakshmy Aarthi Ananthanarayanan	Executive	Health promotion & preventive care	Member
Dr Jonathan Ting	Clinic Head	Medical	Sponsor

Evidence for a Problem Worth Solving

- Smoking is the single most important preventable cause of ill health in Singapore and all over the world¹.
- Smoking cessation was associated with a slower decline in lung function, reduced hospitalization risk and total mortality in COPD patients². Cigarette smoking in Asthma is associated with higher frequency of exacerbations, increased number of life threatening asthma attacks, and higher mortality³.
- Smoking cessation without professional help is achieved only in 3-5%⁴. Comparatively, local outpatient smoking cessation clinics had managed to achieve immediate quit rate of 33 percent, and the six and twelve month quit rates of both 36 percent⁵.

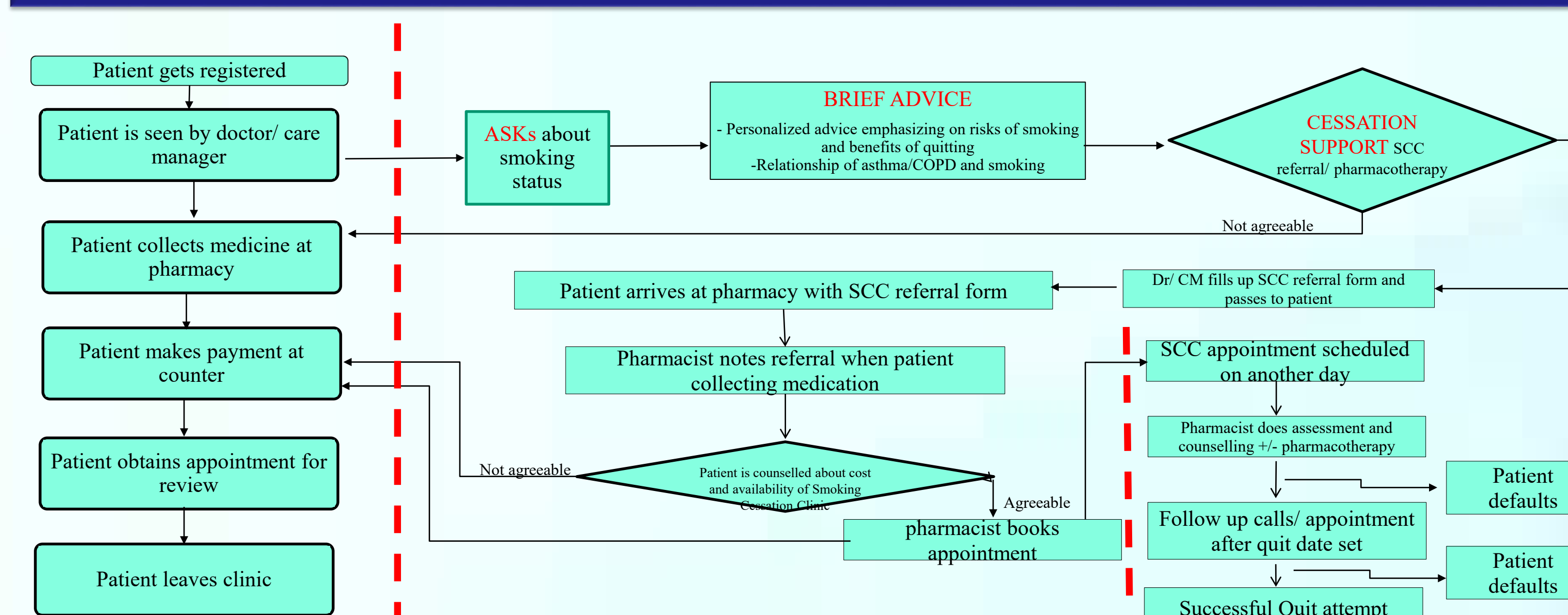
Current Performance of a Process

The current percentage of patients referred to SCC from Nov 2020 to Jan 2021 is 0-2% for each bi-weekly period

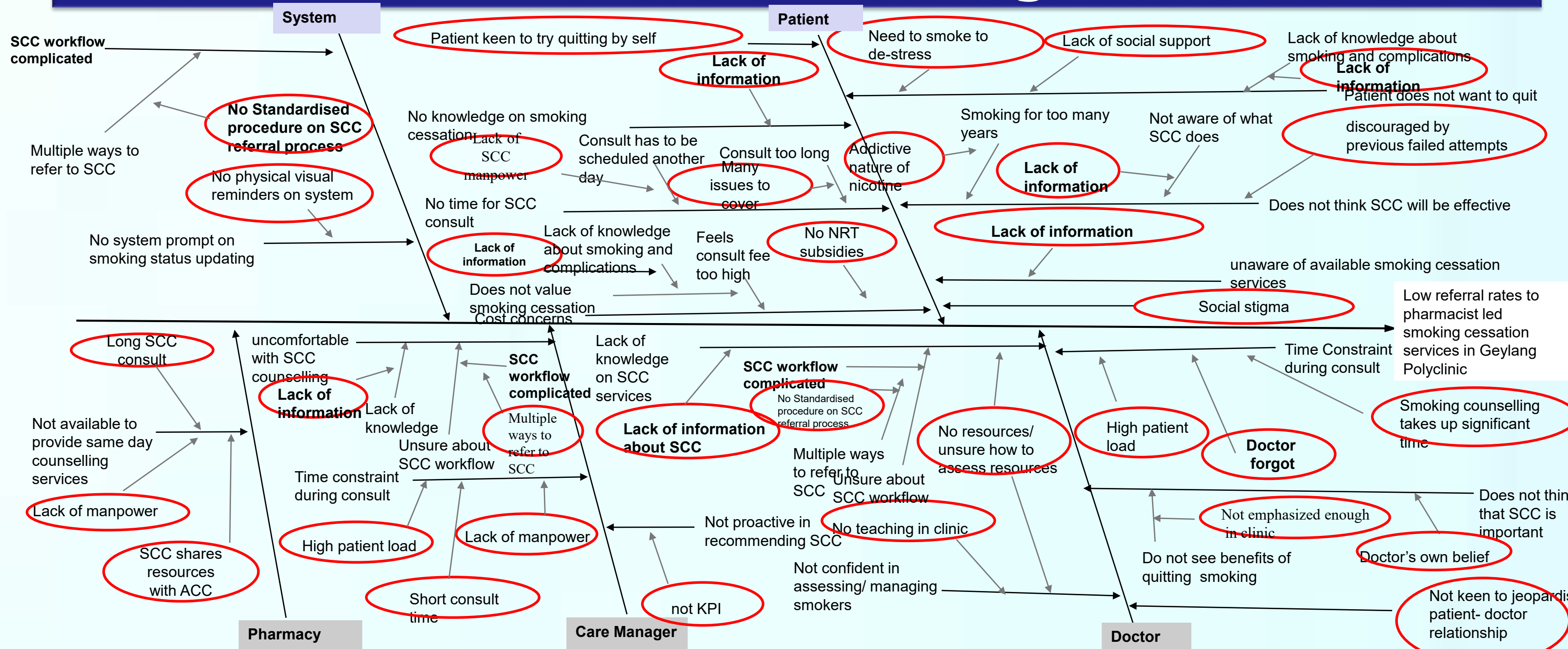


Indicator	Percentage of referrals to SCC amongst identified asthma/COPD adult smokers within a period of 2 weeks
Numerator:	Number of asthma/COPD adult smokers referred to SCC within a period of 2 weeks
Denominator:	Total number of asthma/COPD adult smokers seen in polyclinic excluding those who have been referred to SCC previously (in the last 6 months) within a period of 2 weeks
Criteria	All identified smokers should be referred to SCC
Standard	15% of identified smokers should be referred to SCC. As there are no international guidelines on referrals to SCCs, the best practices locally have achieved between 4.9-42% of referrals. 15% was determined to be an achievable, realistic and timely target.

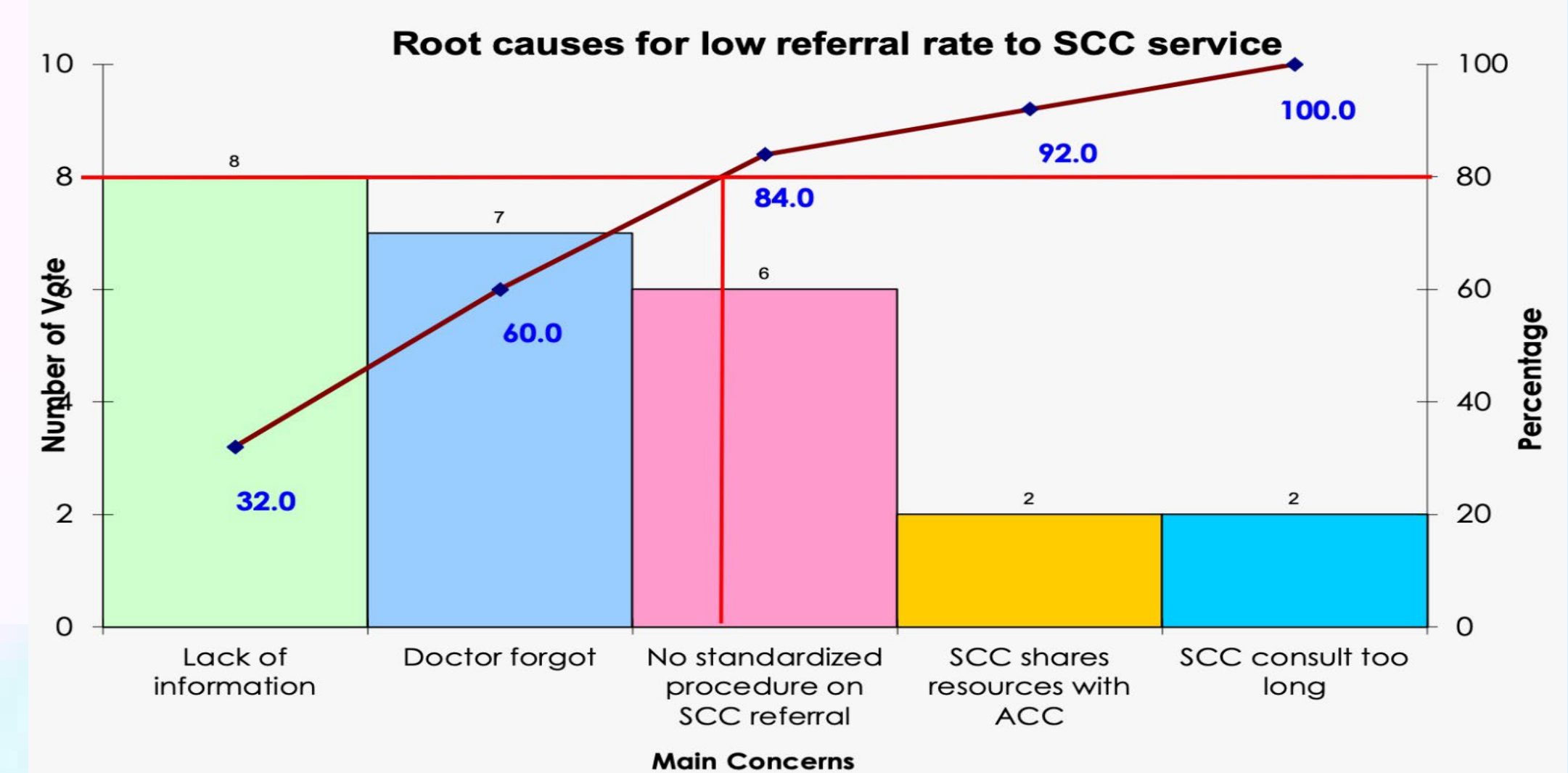
Flow Chart of Process



Cause and Effect Diagram



Pareto Chart

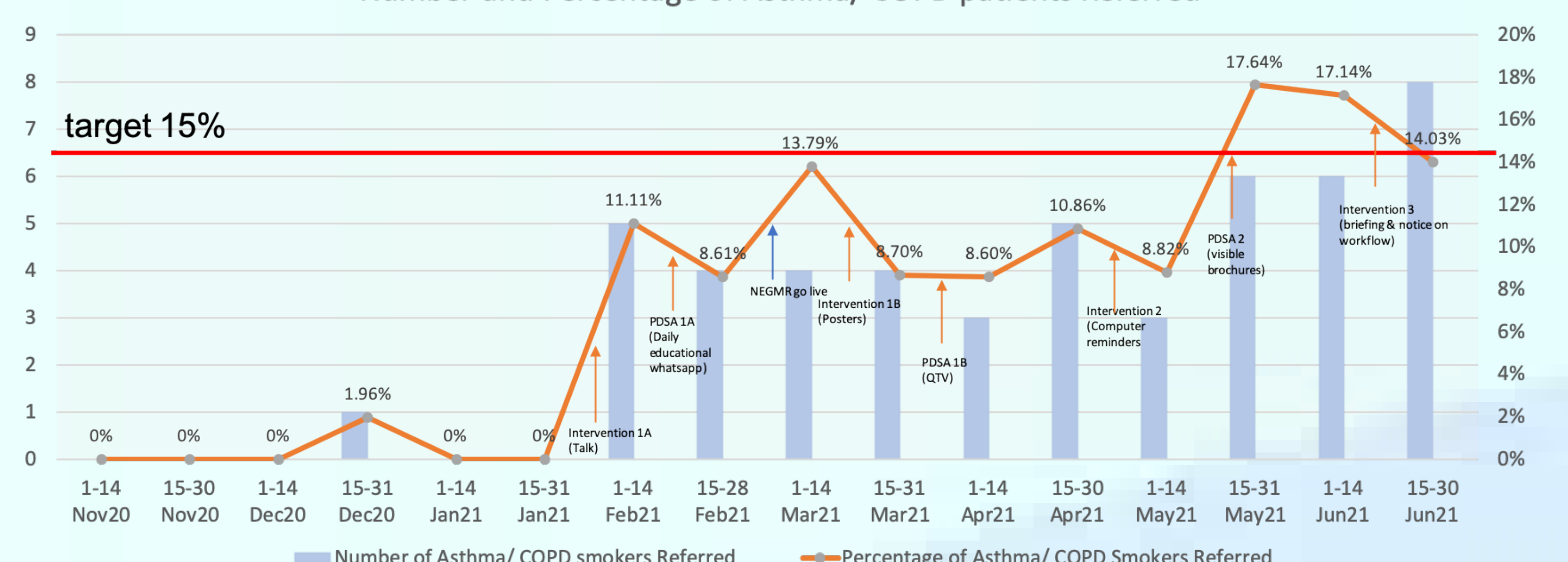


Implementation

ROOT CAUSE	INTERVENTION	DATE	PDSA
1) Lack of information	1A)Promotion to doctors and nurses - Organised lunchtime talk 1B)Promotion to Public - Via posters	3 rd February 2021 17 th March 2021	1) Effectiveness of talk was studied with a post talk survey. There was poor retention of knowledge (e.g. not knowing the ABC of smoking, SCC cost). - Daily bite sized information disseminated via a messaging platform was started. 2) Posters were not effective. Most were looking at the TV waiting for their queue number. Put up similar publicity on QTV instead.
2) Doctor forgot	Physical reminders on computers to remind Drs to check smoking status and promote SCC	1 st May 2021	3) Staff Survey: 30% (3 of 10) of doctors/nurses felt the label was not useful (flimsy and tends to drop, blocking screen). Some felt that brochures would help as a physical cue for them to discuss SCC. - Put up physical brochures instead. - As a surrogate measure, we took the number of patients of whom SCC was offered.
3) No Standardized procedure on SCC referral process	3A)Announcement at doctors meeting about workflow 3B)Put up same workflow on all notice boards in consult rooms	15 th June 2021	4) Before this intervention was released, only 5 of 10 Drs were sure about how to refer to SCC. After the release of the workflow, all 10 of 10 doctors learnt about the workflow.

Results

Number and Percentage of Asthma/ COPD patients Referred



Cost Savings

- The social cost of smoking (in Singapore) has been estimated to be at least US\$479.8 million (0.2% of the 2014 gross domestic product)⁶.
- Personal: A smoker saves money when he quit smoking; A 20 stick packet of cigarettes in Singapore in 2019 cost \$13.09. For a patient who smokes a pack/ day, the cost of cigarettes a year would be S\$4774. Smoking causes many health problems, which result in higher healthcare expenses (inpatient care and outpatient treatment) as well.

Problems Encountered

- Relying only on doctors/ nurses to actively counsel and persuade patients to quit smoking may not be feasible with time constraints. We need to consider how we can further involve our allied health, operations, and pharmacy colleagues to increase uptake to SCC.
- Patient's readiness for change was even more important, more effort is needed to move a patient from pre-contemplation to contemplation stage.

Strategies to Sustain

- To include smoking cessation in the orientation training topics for all clinical staff (medical, nursing and pharmacy).
- Identify a "smoking cessation champion" in the clinic as a role model, to encourage other colleagues to recruit more to SCC through ongoing publicities, reminders and workflow reminders as done in this project.
- Ongoing audit to alert the clinic staff of the uptake rates of the SCC service.

References
1. World Health Organization. WHO Report on the Global Tobacco Epidemic, 2008: The MPOWER Package. Geneva: World Health Organization; 2008.
2. BullST, A. S. (1997). The US Lung Health Study. *Respirology*, 2(4), 303-307. <https://doi.org/10.1111/j.1440-1843.1997.tb00094.x>
3. Polosa, R., & Thomson, N. C. (2012). Smoking and asthma: dangerous liaisons. *European Respiratory Journal*, 41(3), 716-726. <https://doi.org/10.1183/09031536.0007312>
4. Andrioutsou, M., Schoretsanis, S., Utsiou, E., Sallagianni, V., Konstadara, K., Spiliotopoulou, A., Zakyntinos, S., & Katsounou, P. (2016). Success rates are correlated mainly to completion of a smoking cessation program. *G3 Tobacco, Smoking Control and Health Education*. <https://doi.org/10.1183/15992003.congress-2016.pa4599>
5. Zow HCL, Hsu AA, Eng PC (2004). Smoking cessation programme: the Singapore General Hospital experience. *Singapore Med J*, 2004 Sep;45(9):430-4
6. Cher BP, Chen C, Yoong J. (2007). Prevalence-based, disease-specific estimate of the social cost of smoking in Singapore. *BMJ Open* 2017;7:e014377