

Mission Statement

To improve Asthma Control Test (ACT) Capture Rate among asthma patients in Teamlet E of Yishun (YIS) Polyclinic during their chronic consults from a baseline of 47.6% to 80% over a period of 4 months from July to November 2020.

Team Members

SN	Name	Designation	Department	Role
1	Dr Chen Tongyuan	Family Medicine Resident	Medical	Leader
2	Dr Tai Zu Huang	Family Physician	Medical	Team Member
3	SSN Tan Cheng Gek	Care Manager (CM)	Nursing	Team Member
4	Ms Irene Alfante Suribas	Care Coordinator (CC)	Nursing	Team Member
5	Ms Pushparani	Patient Care Assistant (PCA)	Operations	Team Member
6	Ms Janice Tan	Patient Service Associate (PSA)	Operations	Team Member
7	Mr Ng Wei Guang	Operations Manager	Operations	Team Member
8	Ms Alice Hooi	Operations Executive	Operations	Team Member
9	Mr Wong Yoong Kuan	Senior Pharmacist	Pharmacy	Team Member
10	Dr Angelia Chua	Family Physician - Consultant	Medical	Advisor/Facilitator
11	Dr Lim Ziliang	Head, Yishun Polyclinic	Medical	Sponsor

Evidence for a Problem Worth Solving

- Asthma is a highly prevalent disease, affecting 358 million people globally, and 5.1% of adults¹ and 20% of children² in Singapore.
- It causes significant morbidity and mortality, contributing to 3,455 disability-adjusted life years (DALY) in Singapore in 2010³. However, patient often overestimate their asthma control⁴.
- In accordance with GINA⁵ and ACG guidelines⁶, ACT is a validated self-reported objective measure of asthma control. It is recommended at every chronic visit. It is predictive of future exacerbations, aids in medication titration, leading to better patient outcomes⁷.

Current Performance of a Process

Fortnightly baseline data of Teamlet E patients with asthma disease tag in Chronic Disease Management Database (CDMD) who visited YIS for chronic consult. ACT Capture rates among asthma patients empaneled to Yishun Polyclinic Teamlet E were reviewed from 30 Sep 2019 to 5 July 2020. Baseline ACT capture rate was 47.6%.

Numerator: YIS Teamlet E patients with asthma disease tag in CDMD who visited YIS for chronic consult and has done ACT (ACT Score captured on system).

Denominator: YIS Teamlet E patients with asthma disease tag in CDMD who visited YIS for chronic consult.

Flow Chart of Process

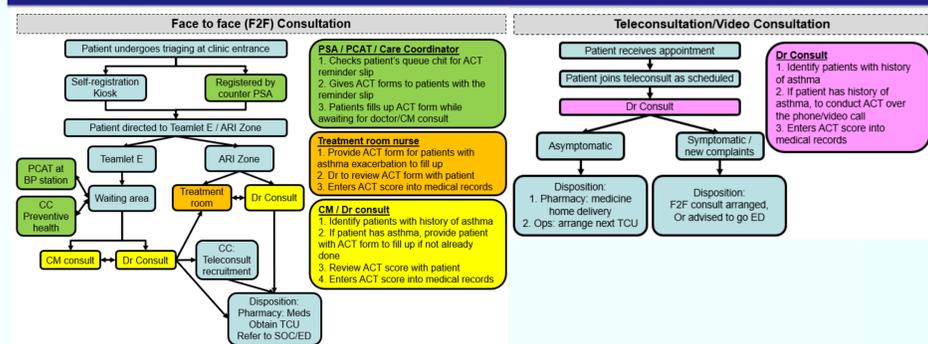


Fig 1. (Left) Workflow for Face to Face (F2F) Consultations
Fig 2. (Right) Workflow for Teleconsultations

Cause and Effect Diagram

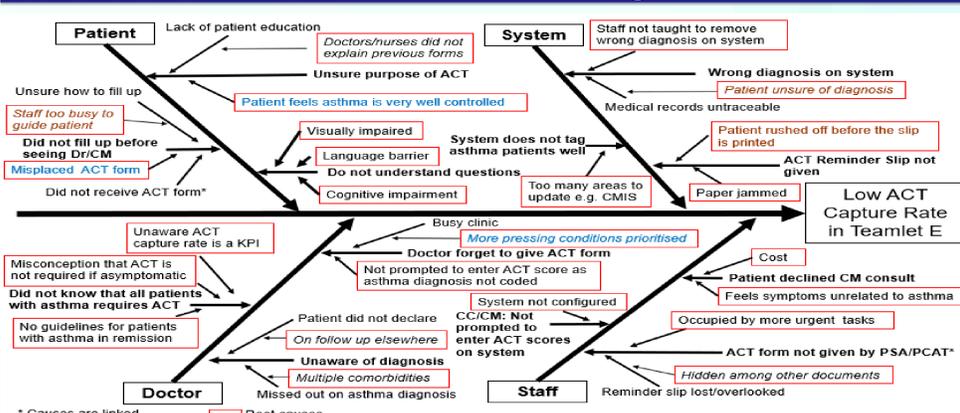


Fig 3. Fishbone diagram with root causes in boxes

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Pareto Chart

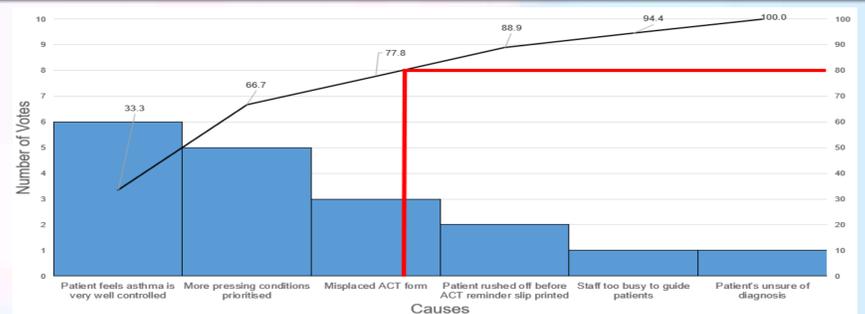


Fig 4. Pareto Chart identifying significant reasons for low ACT Capture Rate in Teamlet E

Implementation

Interventions

No	Problem	Intervention	Date
1	Patient feels that asthma is very well controlled	Developed patient information leaflet (PIL) for distribution by PCATS, Teamlet CC, CM and doctors	6 Jul 2020 (Wk 28)
2	More pressing conditions prioritised	Frontload Patient Information Sheet/ACT forms at onboarding for teleconsults	14 Sep 2020 (Wk 38)

Plan-Do-Study-Act Cycles

No	Plan	Do	Study	Act
1a	Patients feel that asthma is very well controlled	6 July 2020 (Wk 28) Developed patient information leaflet (PIL) for distribution by PCATS, Teamlet CC, CM and doctors	Patient Survey Conducted on 50 patients: Self reported understanding of asthma and ACT on 5 point Likert scale - 43 of 50 forms completed (7 illiterate) - Pre-reading score: 3.77 - Post-reading score: 4.03 - All 43 understood purpose of ACT better Difficulty in Identifying asthma patients raised	Need for improvement of identification of asthma patients Wk 28: 4 survey forms returned Wk 29: 2 survey forms returned
1b	Improving identification of teamlet E asthma patients	3 Aug 2020 (Wk 32) Manual tagging on ePOS based on appointment listing on Oracle Business Intelligence (BI) 17 Aug 2020 (Wk 34) Staff update at lunchtime clinic meeting	Survey distribution per week Consults with PIL/Survey given 	No further modifications. ePOS tagging continued for rest of the project.
2a	More pressing conditions prioritised	14 Sep 2020 (Wk 38) Frontloading of PIL and ACT forms for teleconsult to facilitate assessment of asthma control and efficiency of consult.	Number of ACT done during teleconsults 	For addition of intervention. Feedback that staff may forget to give ACT forms during consults occasionally.
2b	Forget to give ACT form during consults	12 Oct 2020 (Wk 42) Providing visual cues: reminder cards placed on Teamlet E computer monitors and phones	Feedback from staff - Random interview from 5 staff: visual cues were well placed and served well as good reminders	No further modifications. Practice continued for rest of the project.

Results

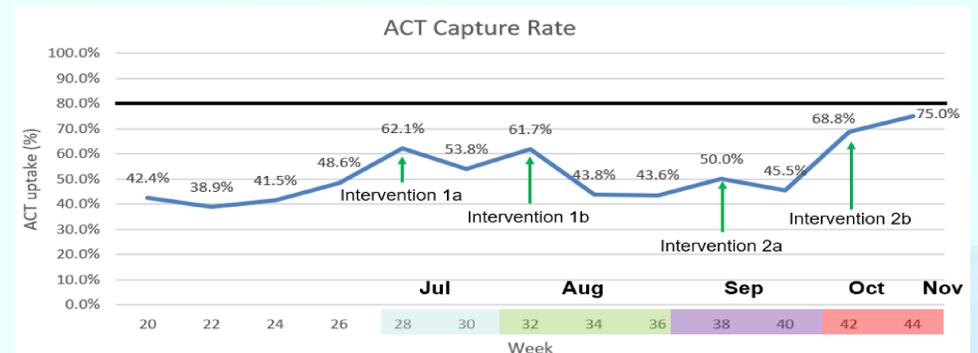


Fig 5. Run chart showing ACT Capture Rate in Teamlet E after interventions

Cost Savings

Direct cost saving analysis was not applicable for the project as the study was looking primarily at the ACT Capture Rates.

However, patients' improved health literacy may lead to asthma control. A 2016 local study showed that patients with asthma control incurred \$65 less per doctor visit in total costs⁸.

Problems Encountered

- 2.5% of patients declined ACT during their consults as they were being treated elsewhere (e.g. public or private respiratory physicians).
- Some visits took place outside the teamlet e.g. triaged to URTI zone or redirected to other clusters during days with heavy clinic loads.
- Frequent alterations in workflow due to the COVID-19 pandemic have led to additional workload for staff
- Patients who did not read English, Chinese or Malay, or were illiterate might not be able to comprehend the patient information sheet well.
- Patients who walked in for chronic reviews may not have been tagged.

Strategies to Sustain

- Continued education and reminders to clinic staff on the impact of asthma control, and use of objective tools such as ACT.
- Interventions can be shared with other teamlets at upcoming teamlet meetings to allow for further development and broader implementation.
- Patients' knowledge gaps about asthma can be further explored. Patients can be linked with online ACT forms or official health related resources e.g. Healthhub via the use of QR codes