

## 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 adults<sup>1</sup> and 20% of children<sup>2</sup> in Singapore.
- It causes significant morbidity and mortality, contributing to 3,455 disability-adjusted life years (DALY) in Singapore in 2010<sup>3</sup>. However, patient often overestimate their asthma control<sup>4</sup>.
- In accordance with GINA<sup>5</sup> and ACG guidelines<sup>6</sup>, 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 outcomes<sup>7</sup>.

## 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

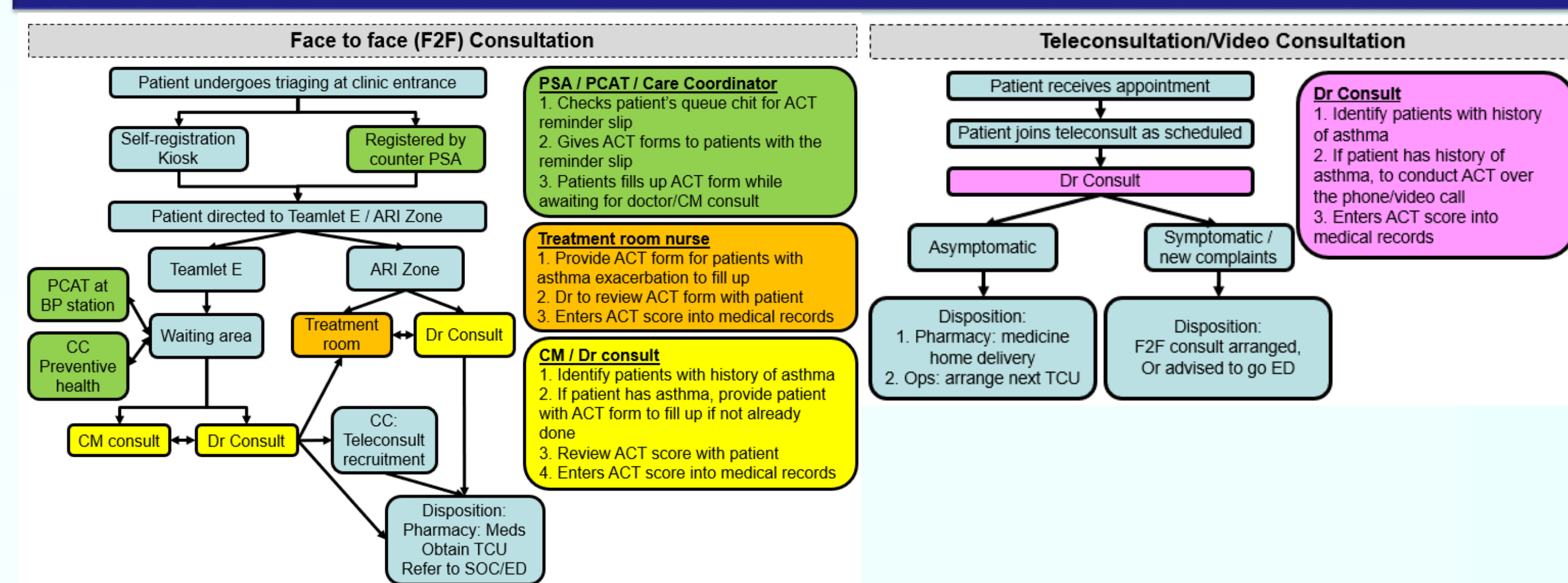


Fig 1. (Left) Workflow for Face to Face (F2F) Consultations  
Fig 2. (Right) Workflow for Teleconsultations

## Cause and Effect Diagram

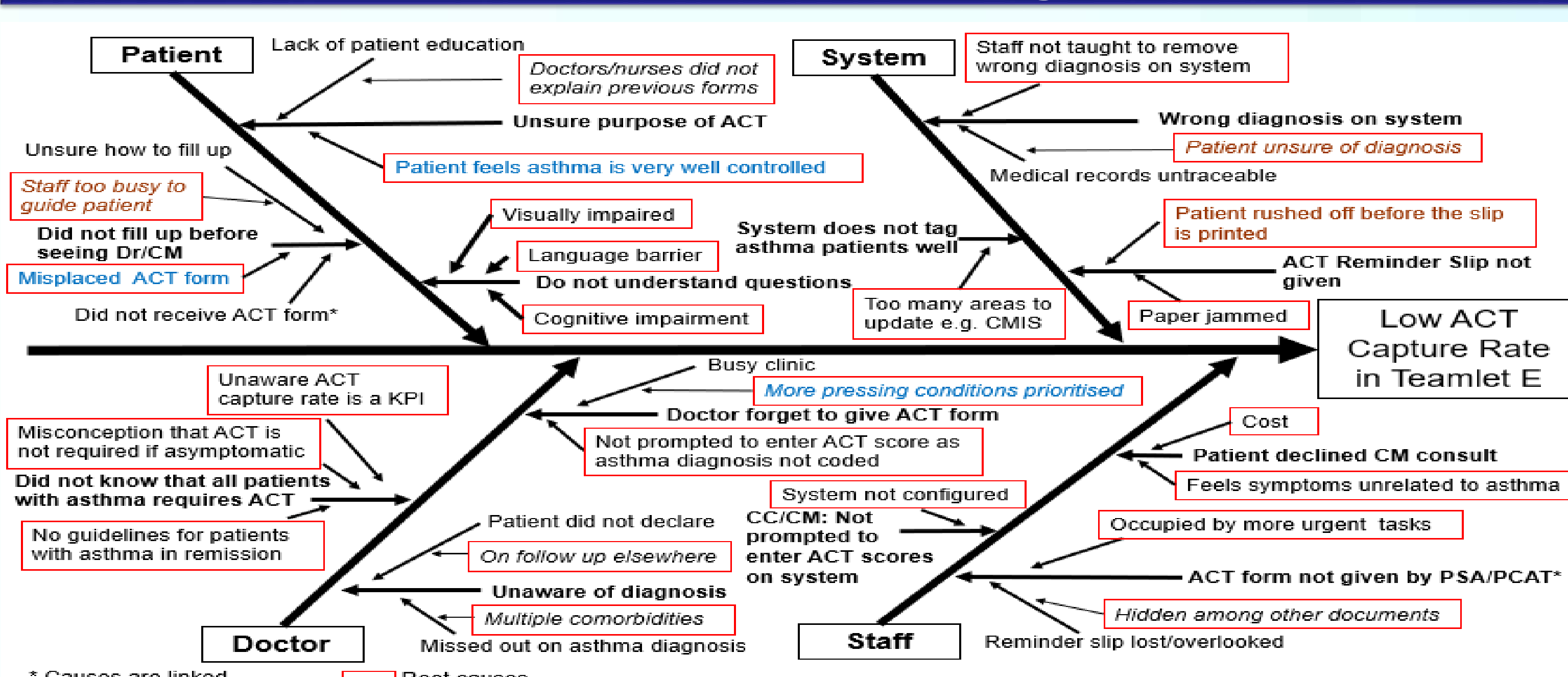


Fig 3. Fishbone diagram with root causes in boxes

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8. Nguyen HV, Nadkarni NV, Sankari U, Mital S, Lye WK, Tan NC. Association between asthma control and asthma cost: Results from a longitudinal study in a primary care setting. Respirology. 2016;22(3):454-9.

## Pareto Chart

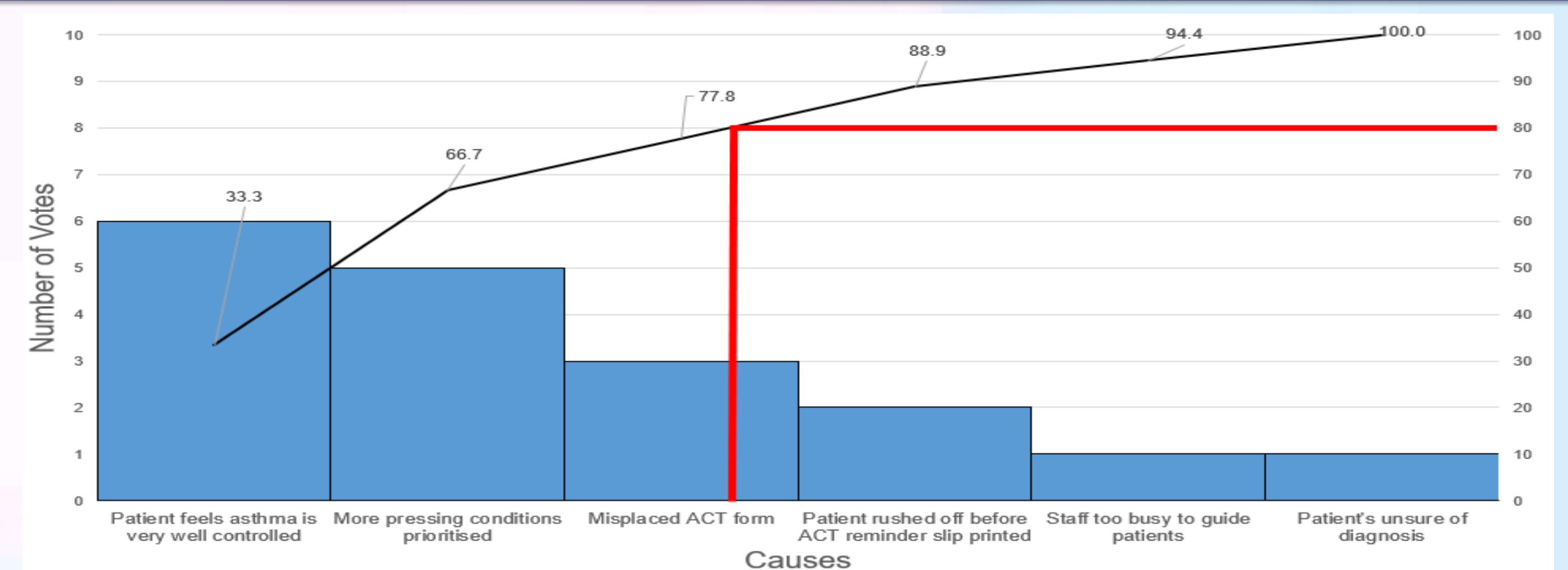


Fig 4. Pareto Chart identifying significant reasons for low ACT Capture Rate in Teamlet E

## 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)<br>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<br>- 43 of 50 forms completed (7 illiterate)<br>- Pre-reading score: 3.77<br>- Post-reading score: 4.03<br>- All 43 understood purpose of ACT better<br><br>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)<br>Manual tagging on ePOS based on appointment listing on Oracle Business Intelligence (BI)<br>17 Aug 2020 (Wk 34)<br>Staff update at lunchtime clinic meeting | Survey distribution per week<br>Consults with PIL/Survey given<br>  | No further modifications. ePOS tagging continued for rest of the project.   |
| 2a | More pressing conditions prioritised                  | 14 Sep 2020 (Wk 38)<br>Frontloading of PIL and ACT forms for teleconsult to facilitate assessment of asthma control and efficiency of consult.                                    | Number of ACT done during teleconsults<br>  | For addition of intervention.<br><br>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)<br>Providing visual cues: reminder cards placed on Teamlet E computer monitors and phones   | Feedback from staff<br>- 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

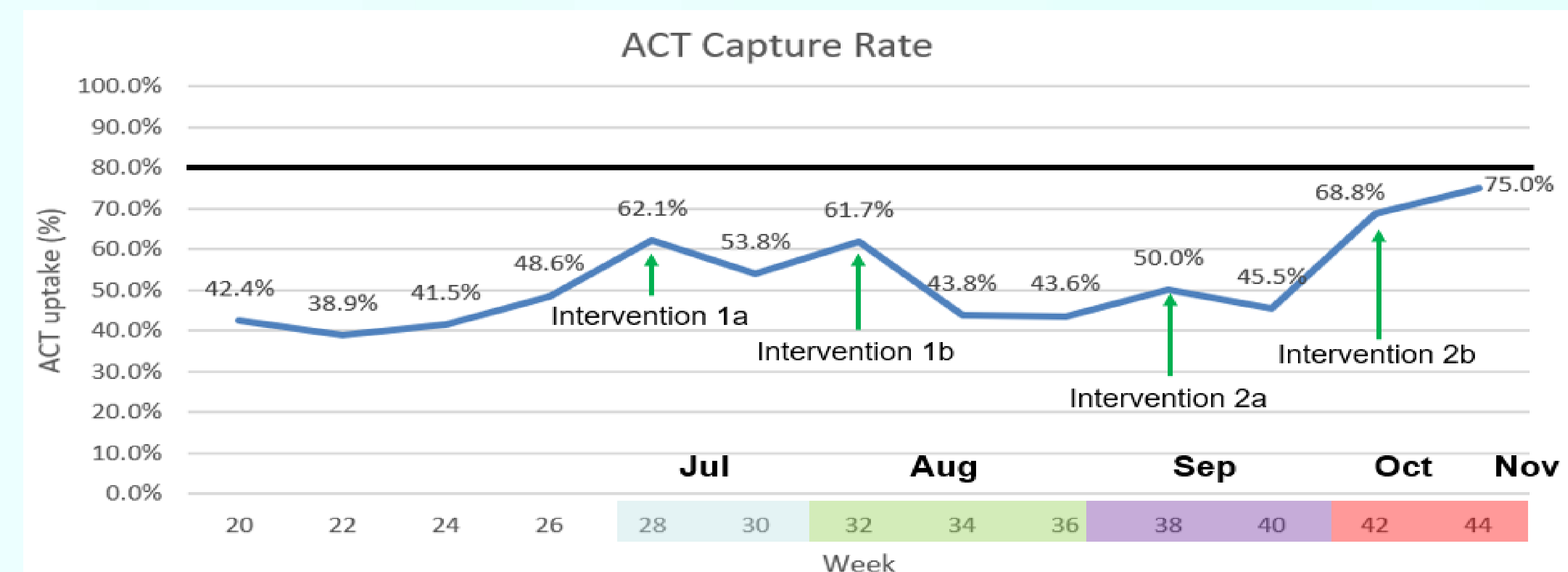


Fig 5. Run chart showing ACT Capture Rate in Teamlet E after interventions

## 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 costs<sup>8</sup>.

## 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