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## Background

Chronic Obstructive Pulmonary Disease (COPD) is a progressive life-threatening lung disease that causes breathlessness (WHO, 2019). In Singapore, it is the 10<sup>th</sup> leading cause of death in 2014 (MOH, 2017). In FY 2018 (April 2018 – March 2019), CGH's Hospital to Home Programme (H2H) received 60 referrals for post discharge follow up care for patients diagnosed with COPD. In consideration that majority of hospitalized COPD patients were Chinese males, divorced, widowed or single, or lived in low income public housing apartments (MOH, 2017), there is a need to develop appropriate education materials to help the community nurses better empower this population in the community.

## Methodology

ESTHER CAFÉ was conducted with 8 ESTHERs with COPD to identify what matters most to them, as well as current challenges faced. Information was collected via a standard questionnaire and guided one-to-one interview.

### WHAT MATTERS MOST

#### 3 Recurrent Themes Identified

- Improving and maintaining their health
- Maintaining their independence and freedom
- Spending time with their family members

### WHAT DO YOU NEED HELP WITH

The following issues with regards to COPD Management were revealed

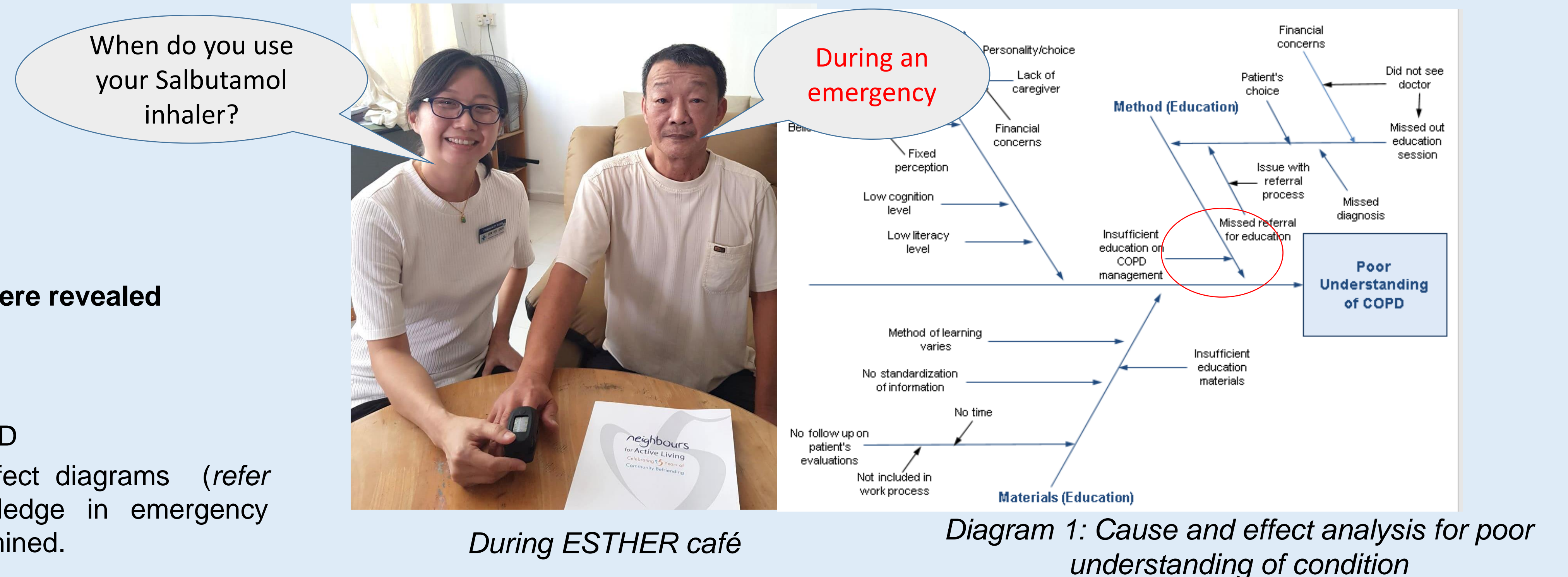
- Poor understanding of condition
- Frequent episodes of shortness of breath
- Readmissions to A&E
- Unwillingness to participate in interventions to improve COPD

These issues were examined separately via cause and effect diagrams (refer Diagram 1 for an example). A common factor: Knowledge in emergency management of COPD, was found to underlie all 4 issues examined.

## Aim

**To empower ESTHERs on COPD medication management during emergency situations.**

This will help to improve disease control, prevent readmissions and independence, inline with what matters most to ESTHER.



During ESTHER café

Diagram 1: Cause and effect analysis for poor understanding of condition

## Proposed Solutions

Based on finding from the Esther Café, a COPD ePlan was developed - A colour-coded, pictorial diagram available in English and Mandarin language for easy reference (refer Diagram 2) on what to do during an emergency situation.

### Interventions:

- Usual care (Education & caregiver's training) **AND**
- Use of COPD ePlan

### Inclusion criteria:

- ESTHER with normal/mild cognitive impairment
- Enrolled under CGH H2H Programme

A total of 4 ESTHERs were enrolled for this project. Their feedback of the ePlan, improvement in compliance and A&E attendances/admission were monitored.

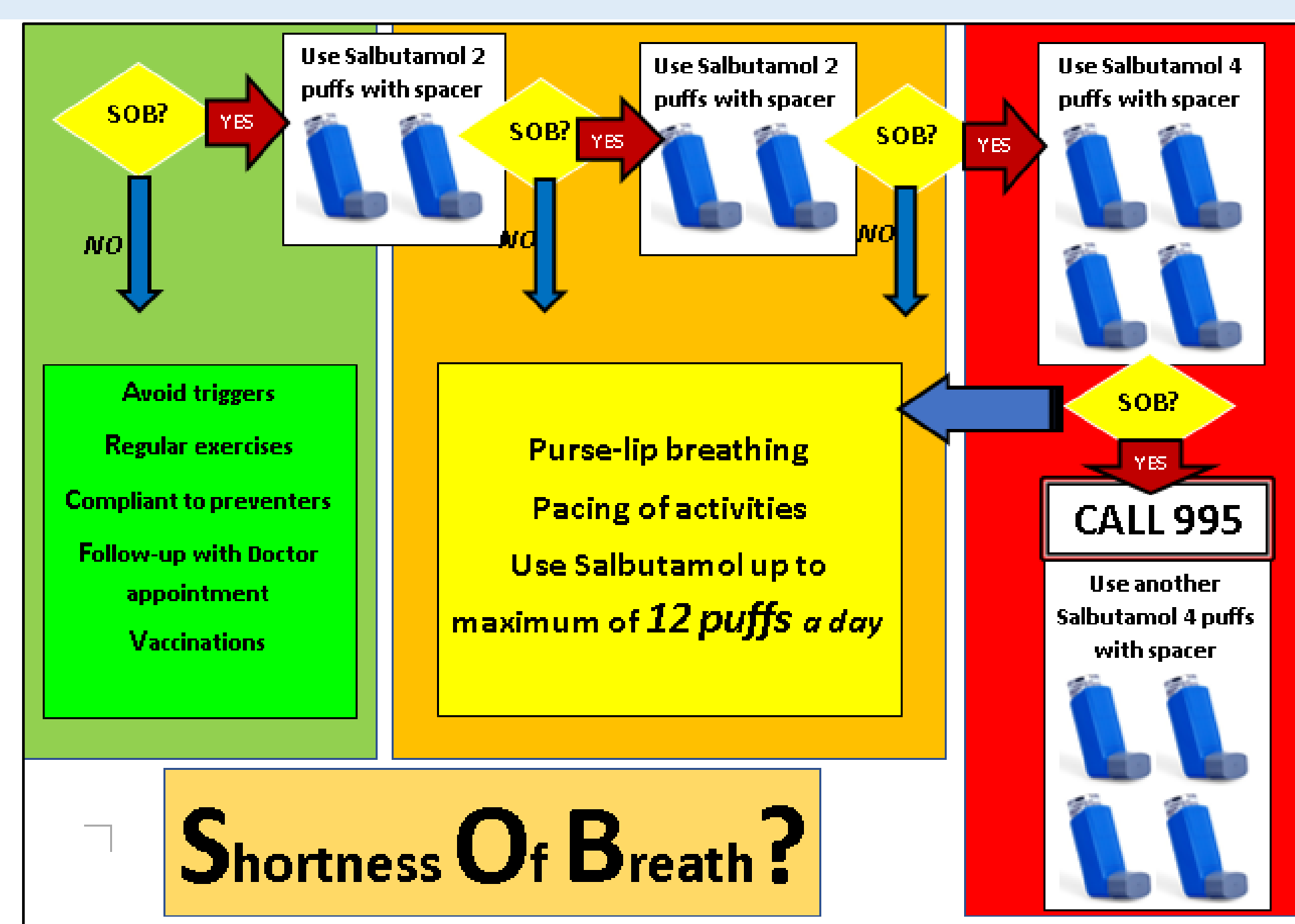


Diagram 2: COPD ePlan



1<sup>st</sup> ESTHER that received ePlan

## Outcomes

Interventions were conducted over a period of two months. The ePlan was generally well accepted by 3 out of the 4 ESTHERs. There was an improvement in treatment compliance with the use of the ePlan. Esther D demonstrated both an improvement in medication compliance and a reduction in ED attendance/readmission during this 2 months project.

ESTHER	Education level	Feedback on eplan
A	Primary level	✓ 'Easy to understand'
B	Secondary level	✗ 'I don't want, I know it all'. - Declined intervention
C	Secondary school level. Mild cognitive impairment	✓ 'Tool is ok to use'
D	No formal education.	✓ 'Tool is ok to use'.

Table 1: Feedback on the COPD ePlan

ESTHER	Compliance at baseline	Compliance at 2 months	ED Attendance / Readmission	
			2 months pre-intervention	2 months post-intervention
A	😊 Compliant	😊 Compliant	2	2
B	😊 Compliant	😊 Compliant	1	0
C	😐 Needs reminders	😊 Compliant	0	0
D	😞 Non-compliant	😊 Compliant - Helper refers to ePlan	1	0

Table 2: Compliance to Treatment and ED Attendance/Readmission

## Learning points

- It is important to assess ESTHER's readiness and suitability for an intervention as not one size fits all!
- The ePlan seems effective as a tool empowering both ESTHER and their caregivers in medication management of COPD in emergency situations and improves compliance.
- Targeting improvement in medication compliance may potentially decrease ED attendance and readmissions.

## Future Plans

- To continue to engage ESTHERs and improve the usability of the ePlan e.g. by further simplifying the pictorial diagram and creating a larger (A3 sized) ePlan for ESTHERs to attach on the wall, near their medication supplies.
- If successful in a bigger test cohort, consider rolling out COPD ePlan to ESTHER with COPD in the community. Benefit may be more evident in ESTHER with frequent ED attendance/admissions.