

Project Title

Sustainability Phase: Inhaled Corticosteroids for All Asthma During COVID-19
Pandemic

Project Lead and Members

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Organisation(s) Involved

Tan Tock Seng Hospital

Healthcare Family Group(s) Involved in this Project

Medical, Nursing, Pharmacy

Applicable Specialty or Discipline

Respiratory & Critical Care Medicine, Emergency Medicine

Project Period

Start date: Jan 2019

Completed date: Mar 2022

Aims

To sustain the prescription of inhaled corticosteroids (ICS) in asthma patients discharged from Emergency Department above 92% following our Clinical Practice Improvement Project (CPIP)

Background

See poster attached/ below

Methods

See poster attached/ below

Results

See poster attached/ below

Lessons Learnt

Not available

Conclusion

See poster attached/ below

Additional Information

Accorded the NHG Quality Day 2022 (Category A: Improving and Sustaining Quality & Safety) Merit Award

Project Category

Care & Process Redesign

Productivity, Cost Saving, Quality Improvement, Clinical Practice Improvement

Keywords

Asthma, Appropriate Treatment

Name and Email of Project Contact Person(s)

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Mission Statement

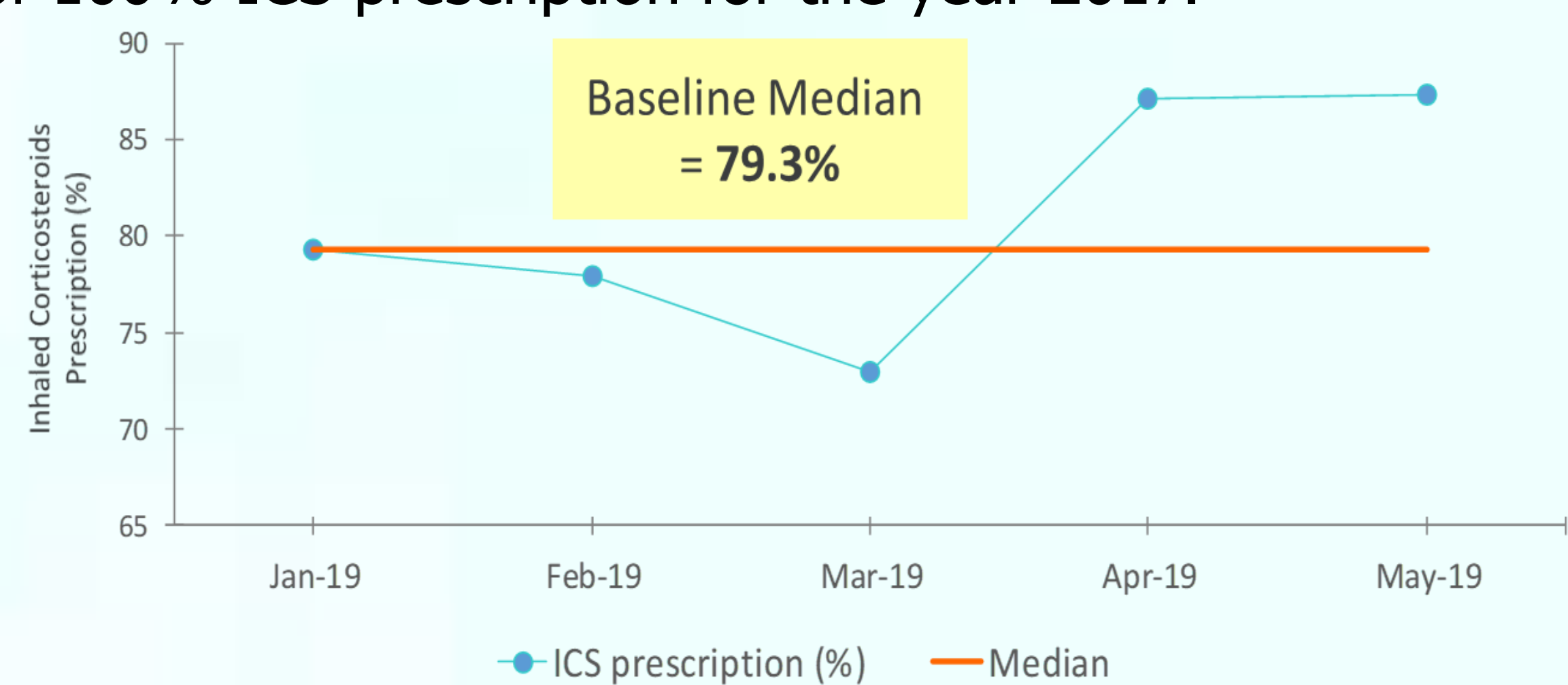
To sustain the prescription of inhaled corticosteroids (ICS) in asthma patients discharged from Emergency Department above 92% following our CPIP

Team Members

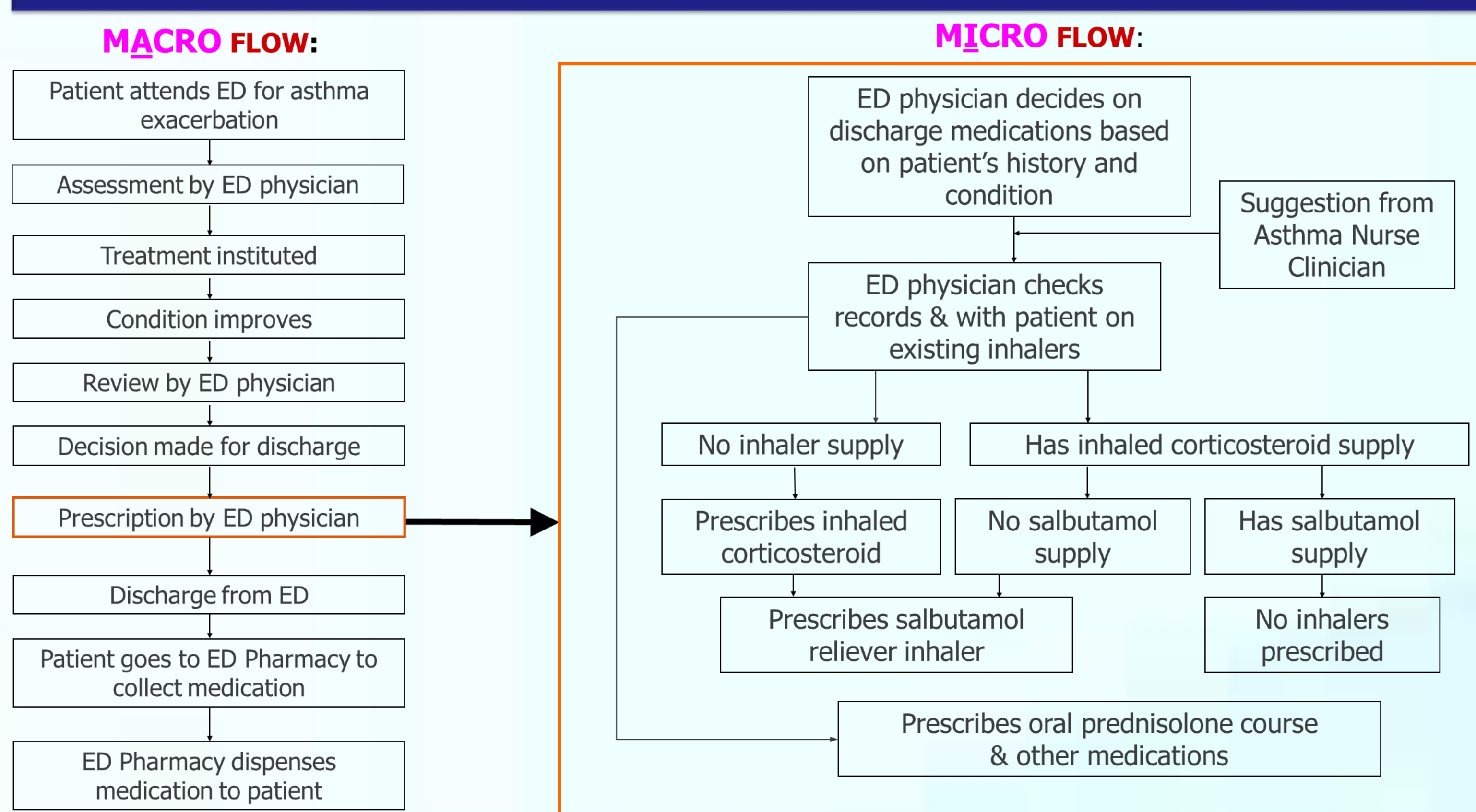
	Name	Designation	Department
Team Leaders	Dr Esther Pang Pee Hwee	Consultant	RCCM
	Mr Lee Tingfeng	Senior Pharmacist	Pharmacy
Team Members	Dr Ang Joo Siang	Consultant	Emergency Medicine
	Ms Tan Rui Yi Alyssa	Senior Pharmacist	Pharmacy
	Ms Lathy Prabhakaran	Senior Nurse Clinician	Nursing
	Ms Lee Shu Yi	Senior Staff Nurse	Nursing
Sponsors	A/Prof Abisheganaden John Arputhan	Head	RCCM
	Adj Asst Prof Ang Hou	Head	Emergency Medicine
Facilitator	Adj A/Prof Thomas Lew Wing Kit		

Evidence for a Problem Worth Solving

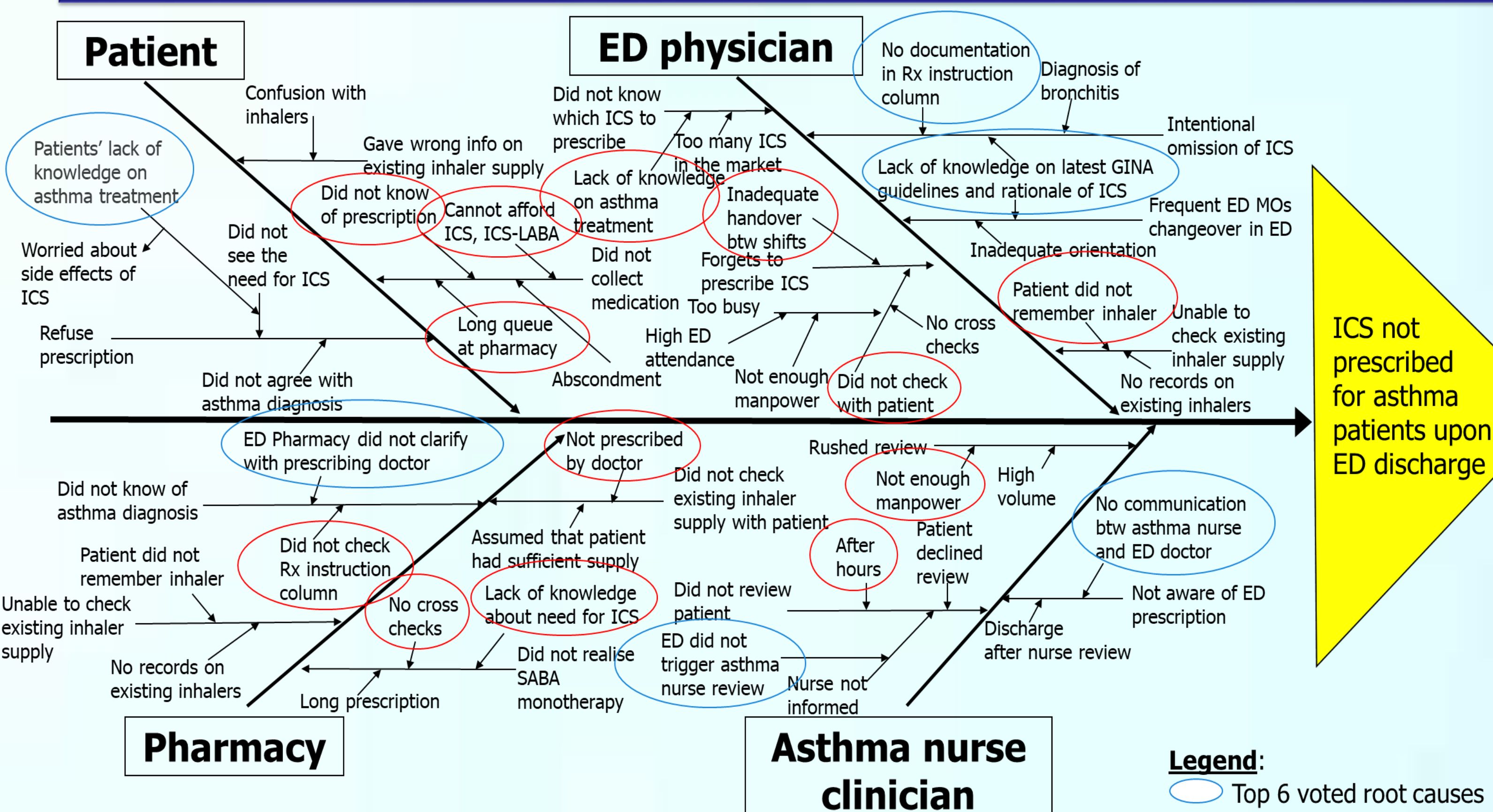
Short-acting beta agonist (SABA) has been first-line treatment for asthma for many years. Patients often do not see the need for regular inhaled corticosteroids (ICS). Since 2019, Global Initiative for Asthma (GINA) no longer recommends treating asthmatic adults with SABA only. All patients should receive ICS to reduce the risk of severe exacerbations. A local audit (2011-2015) showed that almost 1/3 of those admitted for severe life threatening asthma exacerbations were only on SABA. The prescription of ICS in asthma patients discharged from Emergency Department of TTSH was a median of only 79.3% from January to May 2019. Our TTSH data paled in comparison to NUH's data which showed a median of 100% ICS prescription for the year 2017.



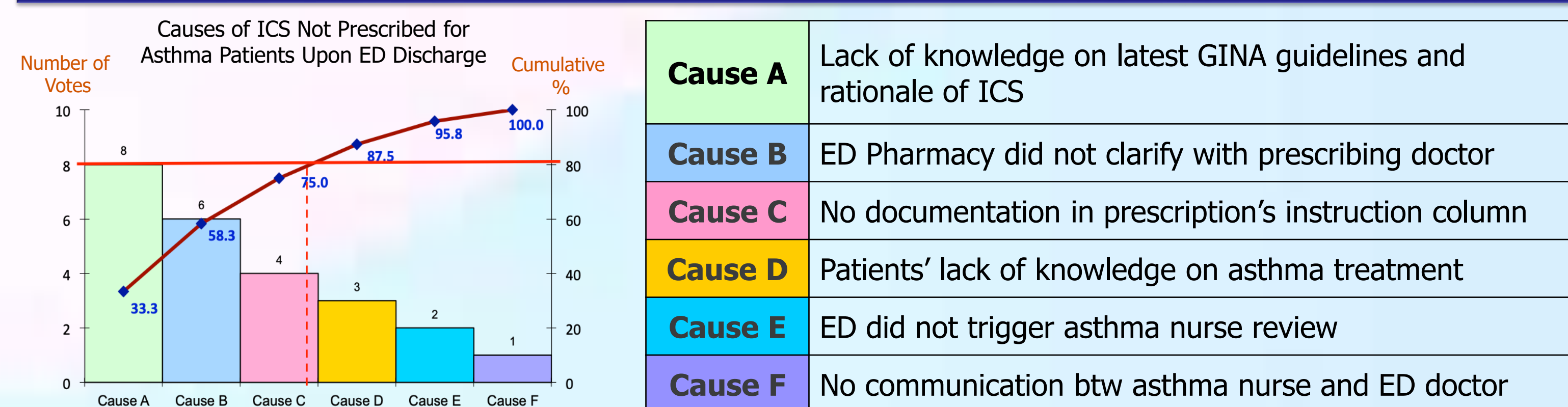
Flow Chart of Process



Cause and Effect Diagram



Pareto Chart



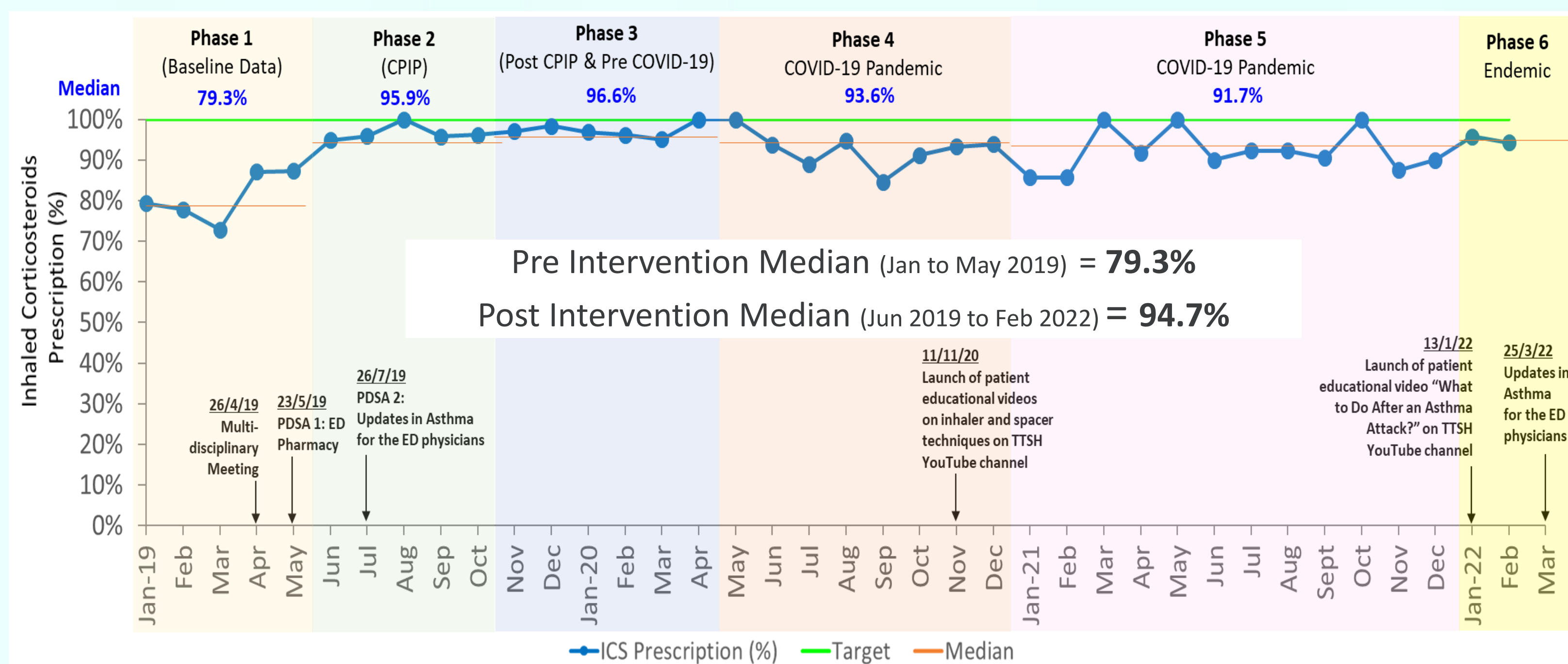
Implementation

Root Cause	Intervention	Implementation Date
Cause B: ED Pharmacy did not clarify with prescribing doctor	ED pharmacy intervention	23 May 2019
Cause A: Lack of knowledge on latest GINA guidelines and rationale of ICS	Updates in Asthma for the ED physicians	26 July 2019 25 March 2022
Cause C: No documentation in prescription's instruction column		
Cause D: Patients' lack of knowledge on asthma treatment	Asthma Educational Videos	11 November 2020 13 January 2022

Results

Sustainability Phase: Runchart on Prescription of Inhaled Corticosteroids (ICS) in Asthma Patients Discharged from ED

Period: Jan 2019 to Feb 2022



	Jan-19	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-20	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-21	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-22	Feb
No. of Inhaled Corticosteroids Prescribed	65	53	51	54	55	56	47	49	45	50	66	63	63	60	39	23	22	15	24	18	22	31	28	31	30	18	14	33	7	9	24	24	19	16	14	18	23	33
ED asthma discharges	82	68	70	62	63	59	49	49	47	52	68	64	65	52	41	23	22	16	27	19	26	34	30	33	35	21	14	36	7	10	26	26	21	16	20	24	35	

Cost Savings

- Number of ward bed days saved as a result of prevented hospital admissions for asthma over a 12-month period ranged from 93.6 to 148.8 days.
- Estimated cost savings from prevented hospital admissions for asthma over a 12-month period ranged from \$28,128 to \$37,440.
- Estimated cost savings from prevented reattendances at Emergency Department for asthma over a 3-month period ranged from \$896 to \$1,536.

Problems Encountered

- Prescribing ICS for all asthmatic patients is a paradigm shifting practice. Many physicians were still prescribing SABA monotherapy for asthma.
- Patient reliance on SABA is reinforced by its low cost and rapid relief of asthma symptoms. Patients often do not see the need for regular ICS and continue to rely on SABA for their asthma.
- The COVID-19 pandemic was a difficult period for TTSH with major impact on our number of ED attendances for asthma exacerbations, manpower allocation, and asthma education for both physicians and patients.

Strategies to Sustain

- Regular quarterly feedback of ICS prescription rates to ED pharmacy and ED physicians
- Regular updates in asthma for ED physicians by RCCM
- ED MO orientation pack and Asthma Policy & Procedure
- Asthma nurse clinicians to follow up with patients treated and discharged from ED (face to face review or telephonic call)
- Improve patient education - asthma discharge advice, videos on coping after an asthma attack and inhaler techniques.