

**Dr Kok Mong Thiam, Senior Consultant, General Medicine, KTPH**

## Mission Statement

To provide inpatient definitive care to 100% of General Medicine patients (from the current 0%) who are waiting in the ED of KTPH for inpatient beds for more than 10 hour in the next six months.

## Team Members

Name	Designation	Department	Role in this project
1. Adj Prof Phoa Lee Lan	Head of Department	General Medicine, KTPH	Sponsor
2. Dr Kok Mong Thiam	Sr Consultant	General Medicine, KTPH	Project leader
3. Dr Thofique Adamjee	Sr Consultant	General Medicine, KTPH	member
4. Dr Kanak Naidu	Sr Consultant	Acute and Emergency Care, KTPH	member
5. Dr Nicholas Tan Yan Rui	Medical Officer	General Medicine, KTPH	member
6. Dr Alethea Chew Qiping	Resident Physician	General Medicine, KTPH	member
7. Dr Medeleine Tan Qiao Si	Medical Officer	General Medicine, KTPH	member
8. Dr Lee Siew Fen	Senior Resident	General Medicine, NHG	member
9. NM Ratnasari Yawierin	Nursing Manager	Acute and Emergency Care, KTPH	member
10. Ms Lillian Lam Lai Ying	Assistant Manager	Hospital Admin, KTPH	Secretary
11. Ms Lavine Ye Xinrong (Ms Bernice Leong Su Min)	Senior Executive	Acute and Emergency Care, KTPH	member
12. Muhammad Firdaus Bin Jamei	Senior Executive	Bed Management Unit	member

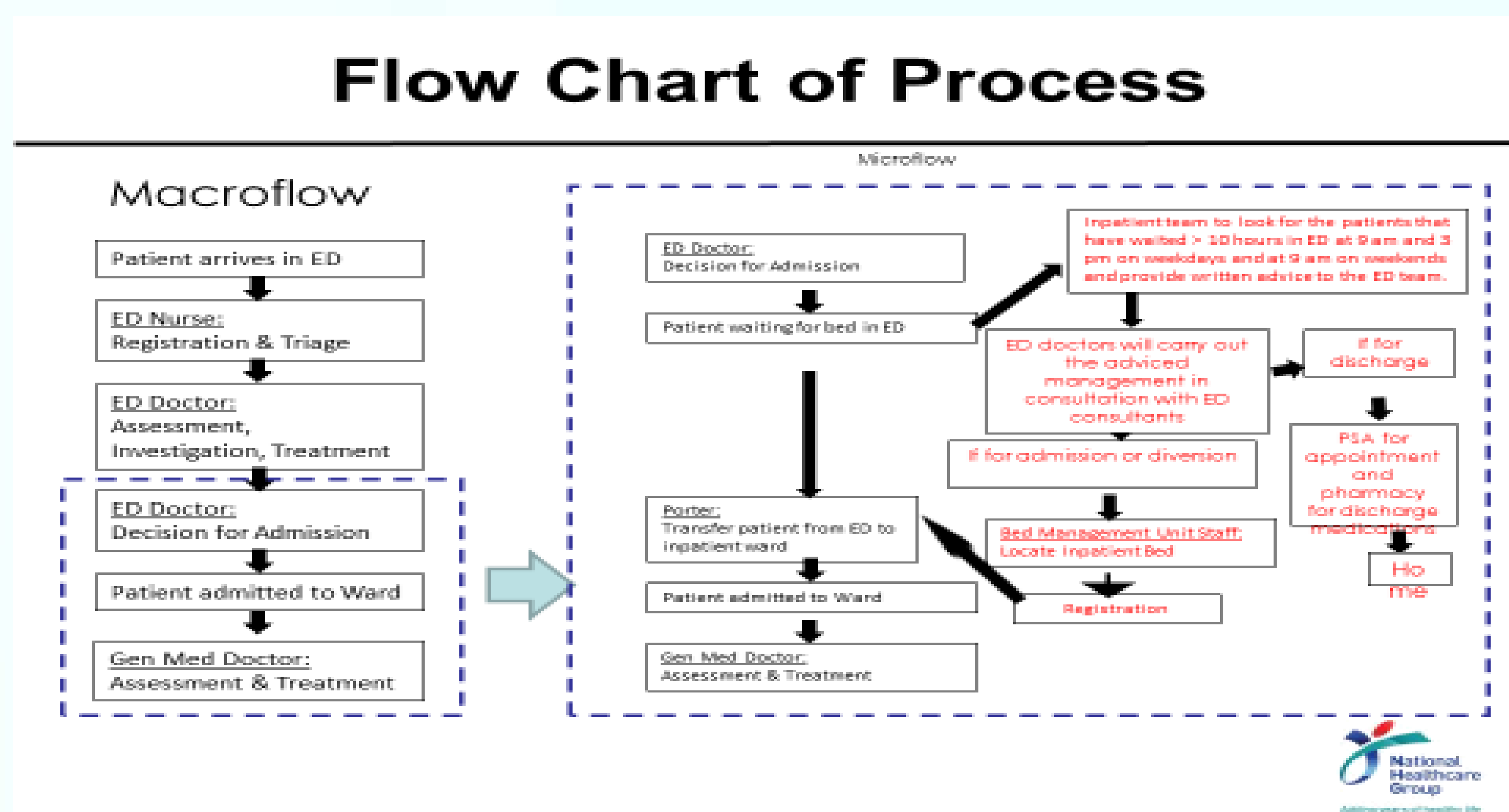
## Evidence for a Problem Worth Solving

Hospital	What is being done and how soon	When is the coverage	How does it affect the management
SKH	Dedicated team (1 Consultant & 2 MOs) parked in ED to review all medical admissions waited > 4 hours	On weekdays	suggestions to ED
NTEGH	Two separate ED-liaison teams, each with one consultant, one MO and 2 HOs. One team takes care of the activations from the clean side, while the other team deals with those on the 'dirty' side. Review patients who waited > 4 hours	On weekdays Mon-Sat	Take ownership at 4 hours. Only place stat orders due to ED nursing bandwidth
SGH	Park a team in ED during office hours and on call team after office hour. Review the patient as soon as the disposition to admit.	24/7 coverage	Take ownership
NUH	Each specialty get an automated text messages to review patients waited in ED for > 2 hours. After office hour the oncall team will get the text messages.	24/7 coverage	Make suggestions to ED
TTSH	The ED Gen Med review team (1 registrar/senior service registrar + 2 MOs + 2Hos) will review GM cases who waited for > 4 hours in ED.	Weekdays and weekends during office hour.	Make suggestions to ED
KTPH	Patient was given definitive inpatient care only when patient arrived in the ward		

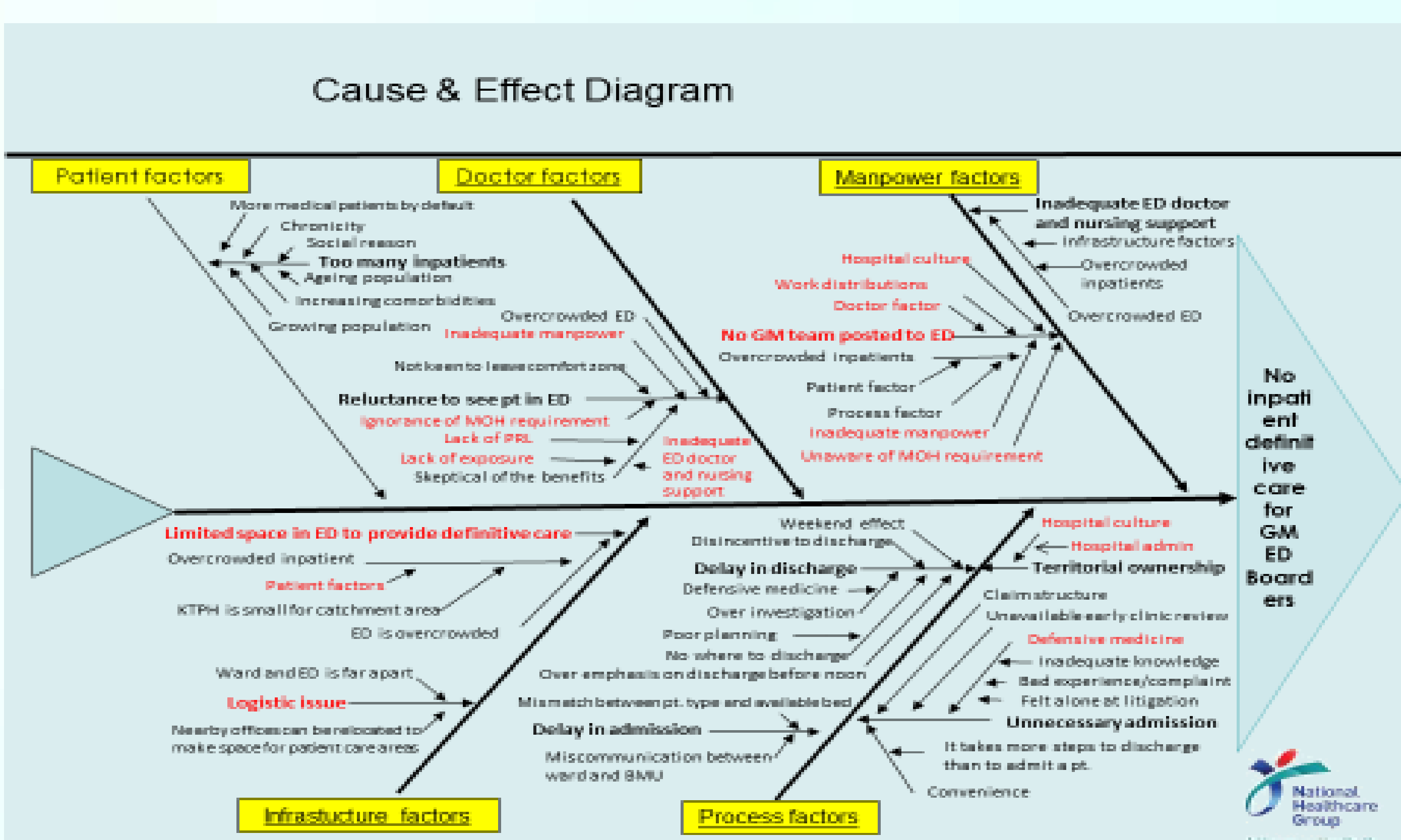
## Current Performance of a Process

Patient was given definitive inpatient care only when patient arrived in the ward

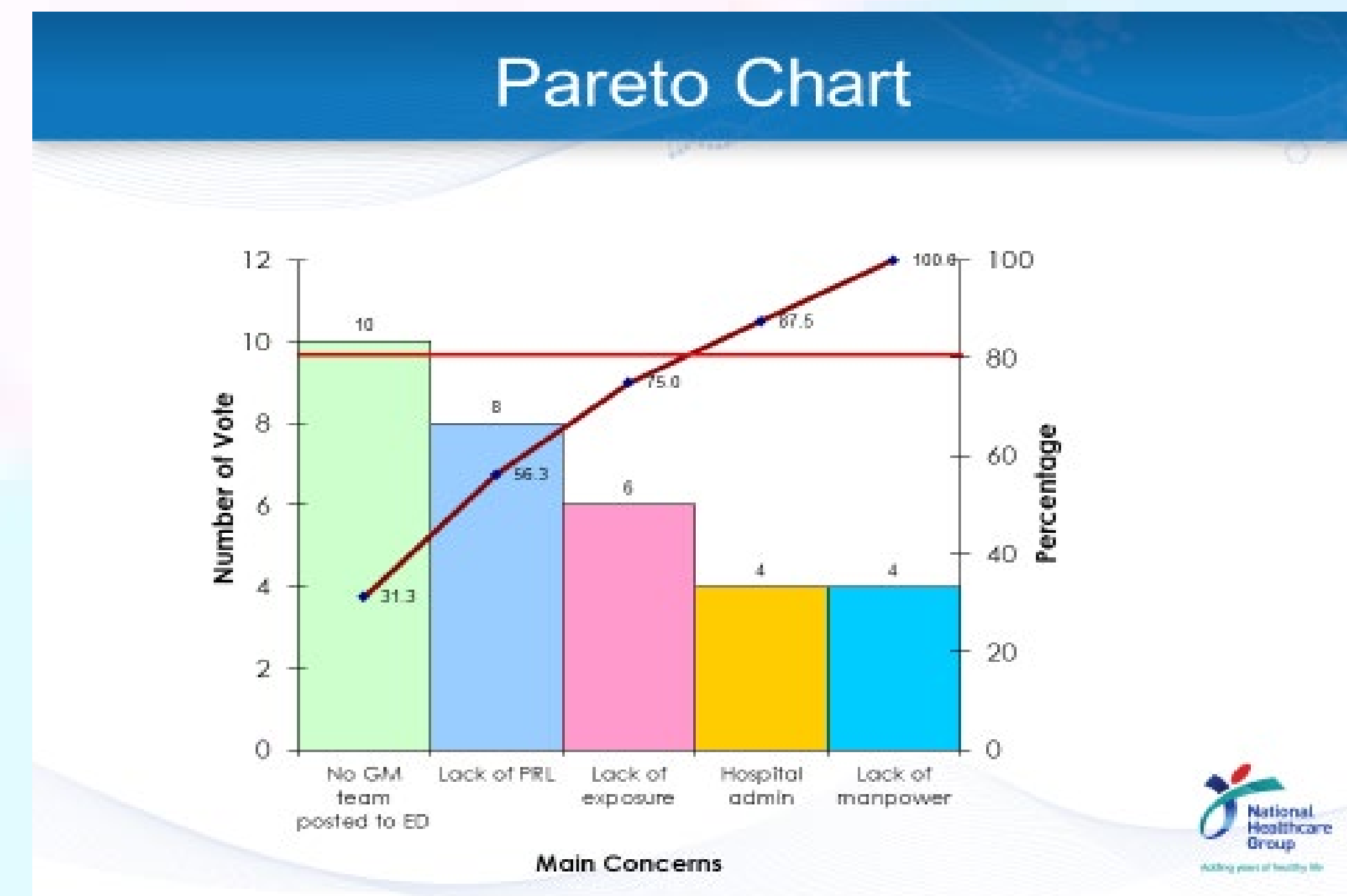
## Flow Chart of Process



## Cause and Effect Diagram



## Pareto Chart



## Implementation

**PDSA Cycle 1.1: Provide Inpatient Definitive care to GM patients waiting for > 10 hours in ED during office hours on weekdays**

**PLAN:** Test for change: Review inpatient admissions waited > 10 hours in ED during office hours on weekdays for 10 days. Review the ED boarders who waited > 10 hours in ED during office hours on weekdays. Review the ED boarders who waited > 10 hours in ED during office hours on weekdays. Review the ED boarders who waited > 10 hours in ED during office hours on weekdays. Review the ED boarders who waited > 10 hours in ED during office hours on weekdays.

**ACT:** Review the ED boarders who waited > 10 hours in ED during office hours on weekdays. Review the ED boarders who waited > 10 hours in ED during office hours on weekdays. Review the ED boarders who waited > 10 hours in ED during office hours on weekdays. Review the ED boarders who waited > 10 hours in ED during office hours on weekdays.

**STUDY:** Review the ED boarders who waited > 10 hours in ED during office hours on weekdays. Review the ED boarders who waited > 10 hours in ED during office hours on weekdays. Review the ED boarders who waited > 10 hours in ED during office hours on weekdays. Review the ED boarders who waited > 10 hours in ED during office hours on weekdays.

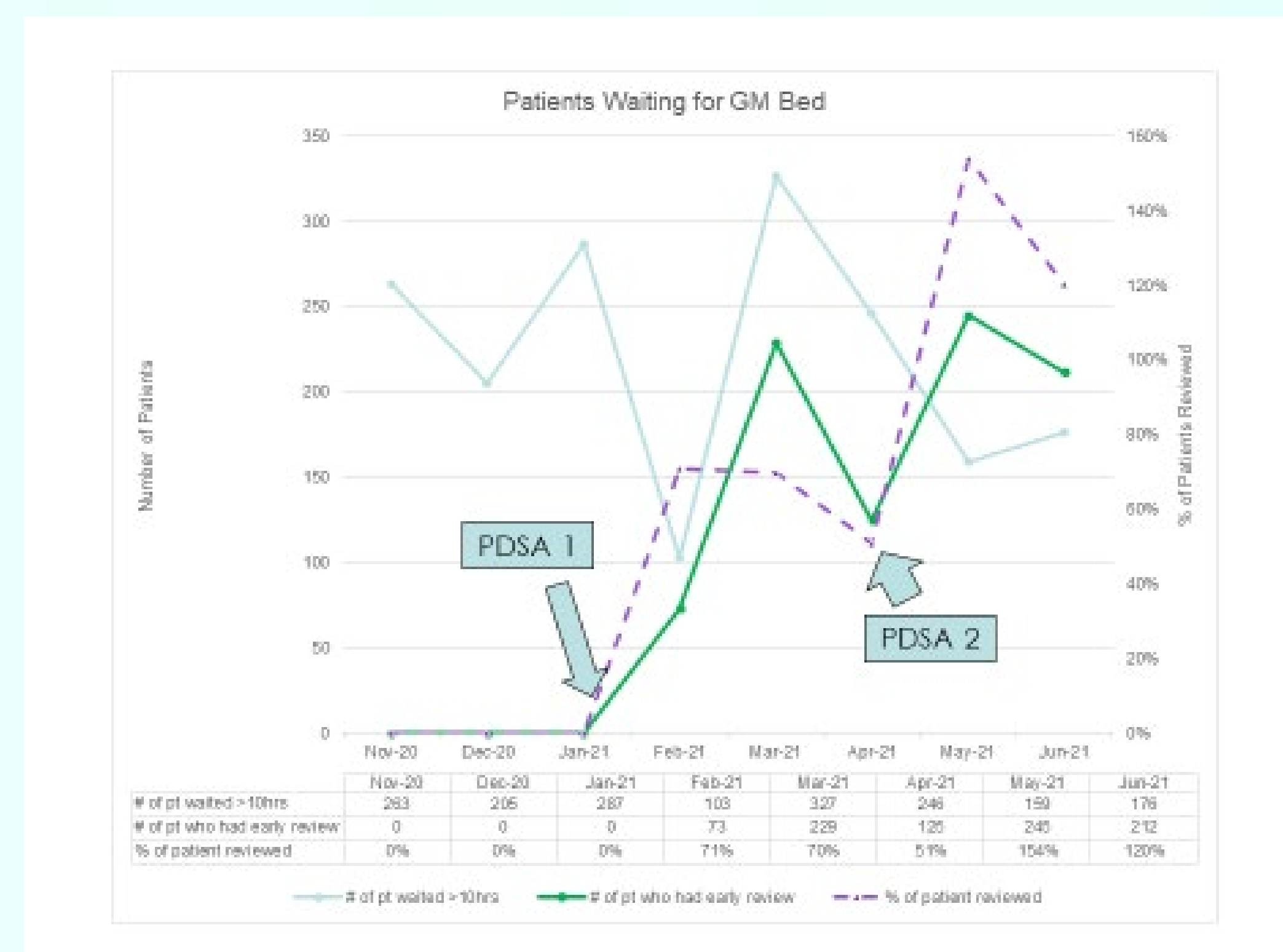
**PDSA Cycle 1.2: Provide Inpatient Definitive care to GM patients waiting for > 10 hours in ED during office hours on all days.**

**PLAN:** Test for change: Review inpatient admissions waited > 10 hours in ED during office hours on all days for 10 days. Review the ED boarders who waited > 10 hours in ED during office hours on all days. Review the ED boarders who waited > 10 hours in ED during office hours on all days. Review the ED boarders who waited > 10 hours in ED during office hours on all days. Review the ED boarders who waited > 10 hours in ED during office hours on all days.

**ACT:** Review the ED boarders who waited > 10 hours in ED during office hours on all days. Review the ED boarders who waited > 10 hours in ED during office hours on all days. Review the ED boarders who waited > 10 hours in ED during office hours on all days. Review the ED boarders who waited > 10 hours in ED during office hours on all days.

**STUDY:** Review the ED boarders who waited > 10 hours in ED during office hours on all days. Review the ED boarders who waited > 10 hours in ED during office hours on all days. Review the ED boarders who waited > 10 hours in ED during office hours on all days. Review the ED boarders who waited > 10 hours in ED during office hours on all days.

## Results



## Cost Savings

	Jan	Feb	Mar	Apr	May	Jun	Jul
<b>Reduction in Wait Time &amp; ALOS</b>							
Pre-CPIP ALOS	140.1	140.1	140.1	140.1	140.1	140.1	140.1
Post-CPIP ALOS	113.2	113.2	113.2	113.2	113.2	113.2	113.2
Improvement in ALOS (hrs)	27.8	27.8	27.8	27.8	27.8	27.8	27.8
Improvement in ALOS (%)	20%	20%	20%	20%	20%	20%	20%
Pre-CPIP wait time for IDC (hrs)	29.15	22.13	21.03	21.38	22.00	22.00	22.00
Post-CPIP wait time for IDC (hrs)	13.43	14.18	12.28	11.25	11.25	11.25	11.25
Improvement in wait time for IDC (hrs)	15.72	7.95	8.75	10.13	10.75	10.75	10.75
Improvement in wait time for IDC (%)	54%	36%	62%	47%	49%	49%	49%
<b>Number of patient waited &gt; 10hrs</b>	287	103	327	246	150	176	125
<b>Number of patient with early review</b>	0	73	229	150	246	276	212
<b>Bed days saved per patient</b>	0	1.2	0.9	1.9	0.8	0.9	0.9
<b>Total Bed Days saved</b>	0	84.6	213.8	235.3	204.3	203.0	203.0
<b>Gross Cost Savings (Monthly)</b>	\$13,000.0	\$13,000.0	\$13,000.0	\$13,000.0	\$13,000.0	\$13,000.0	\$13,000.0
<b>Net Cost Saving (Monthly)</b>	\$4,000.0	\$12,000.0	\$12,000.0	\$12,000.0	\$12,000.0	\$12,000.0	\$12,000.0
<b>Cases with admission avoided</b>	2	2	2	2	2	2	2
<b>Cases diverted to other institution</b>	4	4	4	4	4	4	4
<b>Any significant change in management?</b>							
a. No difference in management	59	109	53	54	55	55	55
b. Changes not carried out in ED	1	1	1	1	1	1	1
c. Patient decanted to other institution	1	1	1	1	1	1	1
d. Significant change	27	62	53	115	62	62	62

## Problems Encountered

### Problems

- No continuity of care and duplication of work.
- Plan not carried out due to lack of staffs.
- Fluctuation of patient numbers is too big which make man power planning difficult.
- Changes not welcomed by members of the team.

## Strategies to Sustain

### Strategies for Spreading

This CPIP project shows that early review of Gen Med patients in ED yields a lot of benefits. I hope to extend the service by:

- reducing the threshold to GM patients waited for > 4 hours
- to provide 24/7 coverage.
- to spread this service to other disciplines of KTPH.