5 to 7 MAY '17 DOHA

Middle East Forum on Quality and Safety in Healthcare 2017

Adding Value in Healthcare

Lean Tools to Improve Patient Flow at Hamad General Hospital - HMC

Ms. Carolyn Volker, ED patient flow, RN, BSc, MSc
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Mr. Dawoud Ibrahim Jamous, DON-Bed Management, RN, BSc, MSc
Ms. Jisha Eappen, HN- Bed Management, RN, BSc
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Mr. Esmat Swallmeh, DON-Medicine, RN, BSc, MSc

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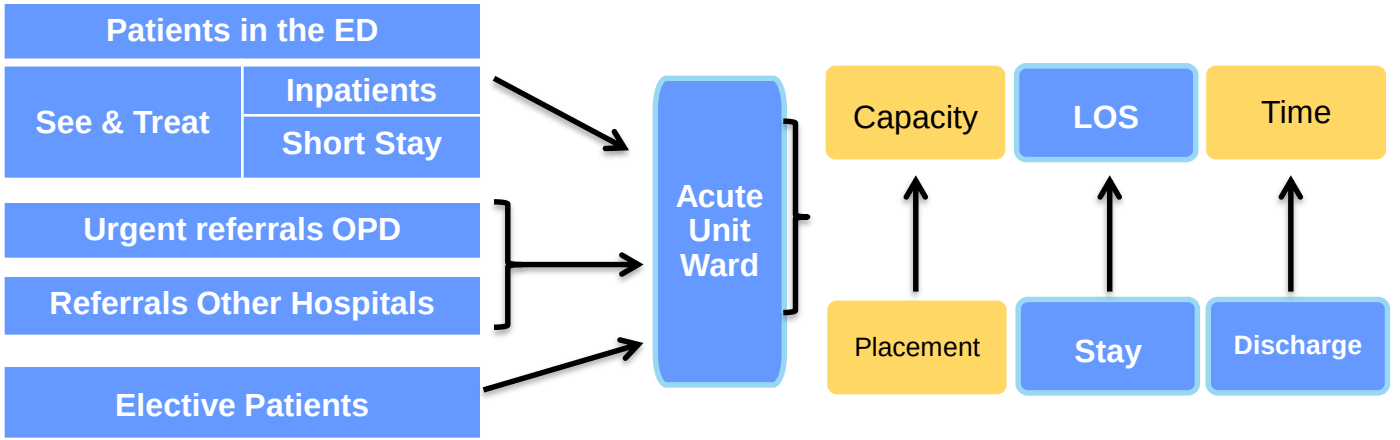
Background and Context

- HMC is the major provider of Healthcare in the state of Qatar
- HGH one of the busiest ED's in the world
- Considerable issues of 'flow' within the hospital system
  - **Issues of capacity/ demand**
  - **Variability**
  - **Lack coordination**
  - **Lack of communication**

Patient Flow – A System



Co-ordination - Bed & Case Management Systems

Clinical Care Pathways

The Patients Journey from Arrival – Discharge

Right Place/ Right Time / First Time

Clinical Services, Flow Services, Support Services, Capacity

Why is Flow Important – Clinical Outcomes

- Crowding and Boarding in ED + 8 Hrs.
- Evidence - Systematic Review of the Literature (42 Studies).
- Increase in Mortality & Morbidity
- Delays to antibiotics and other treatments
- Time to thrombolysis affected
- Time to analgesics affected
- ED LOS > 24 hrs. was associated with 10% increase in hospital LOS
- Increase in LWBS
- Satisfaction Patients & Staff

Bernstein, S.L. Aronsky, D. Duseja, R. Epstein, S. (2008) The Effect of Emergency Department Crowding on Clinically Orientated Outcomes, Society of Academic Emergency Medicine, pp.1-10.

Our Vision for Lean

- **Streamlined Patient Care**

AIMS

- **develop a flow programme** in HMC
- Focus attention on **key system constraints**
- Build a **cadre of frontline leaders with skills** within the flow team.
- **improve access**
- **reduce waits and delays**

Training

Implementation

- **Planning meeting** — January 2016
- **Training** — April 2016
- **Learning Session 1** — May 2016
- **Learning Session 2** — September 2016
- **Learning session 3** — November 2016
- **Leaning Session 4** — January 2017
- **Wrap up session** — February 2017

What is Lean

"**Strategy**" to eliminating waste

A "**Process**" that allows for new approaches of care delivery

A "**Methodology**" to add valued work and improve ROI.

Type's of Waste..

Fig. 1.

Eight Wastes in Health Care

Defects

Variation in outcomes, medication errors

Over-Production

Redundant work, duplicate charts or forms

Unnecessary Waiting

Patient queues; staff idle time

Confusion

Best clinical, operational practice unclear

Transportation

Delayed delivery of supplies and materials

Inventory

Excess supplies and unused medications

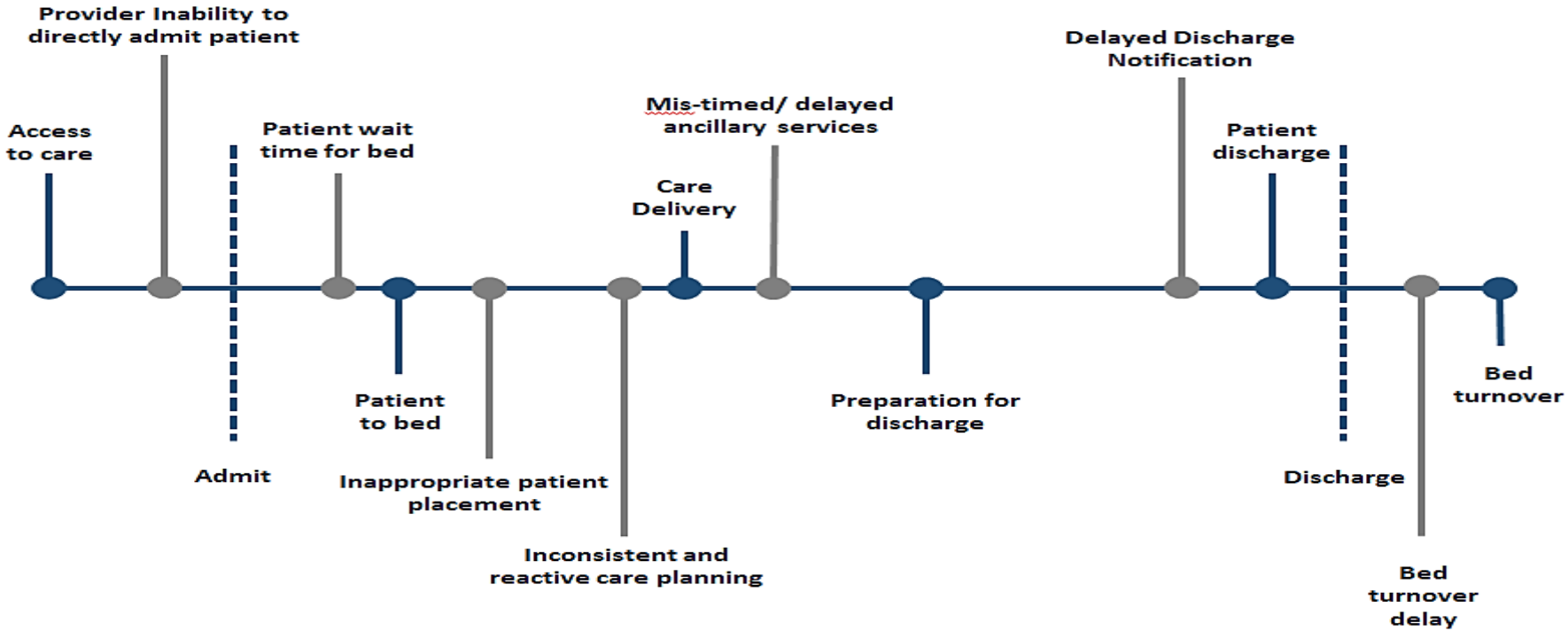
Wasted Motion

Unnecessary movement by clinicians, staff, or patients

Excess Processing

More work or complexity than is required

Opportunities for Improvement



Reduce the Registration to Disposition Time in Emergency Department

Prepared by:

Mr. Bejoy Chacko, HN-Emergency Department,
MBA, BSRN / RM,PGDEMS

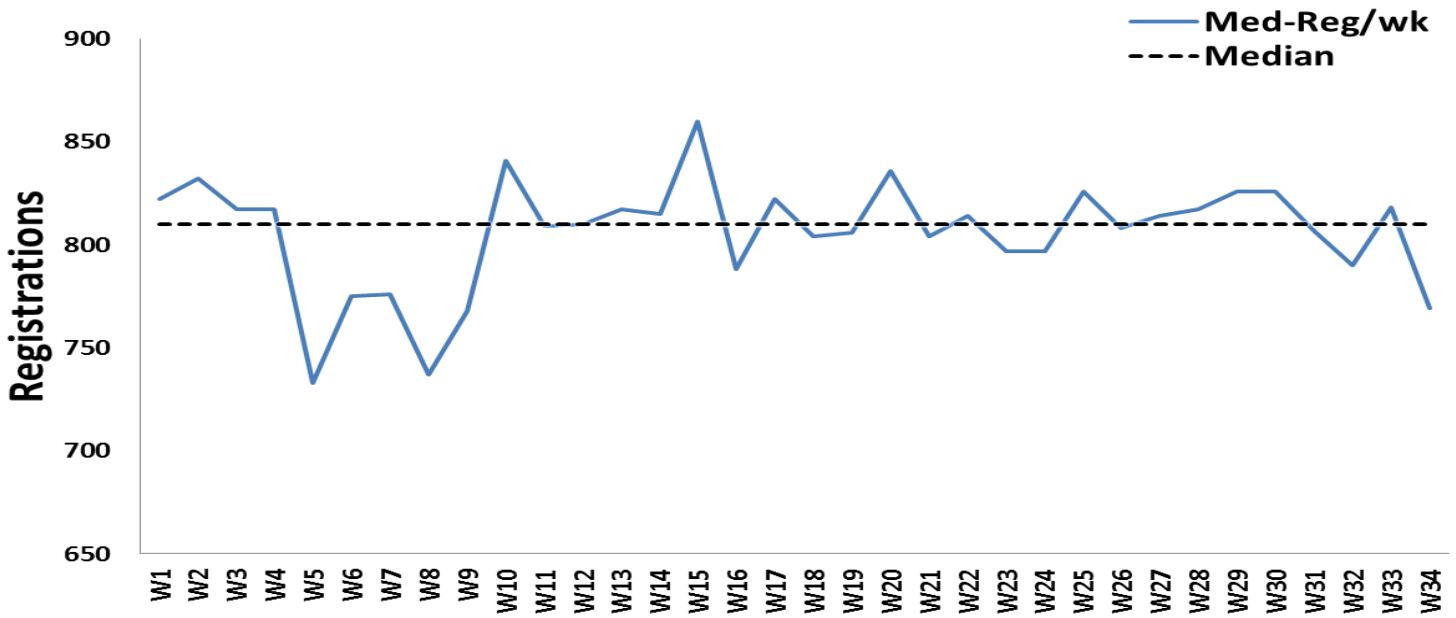
Objective

Reduce the registration to disposition time in Emergency Department by 50%

Problem Statement

- Prolonged waiting time.
- Crowded waiting areas
- Prolonged triage process
- Increasing number of LWBS

Median Rates of Emergency Registration



PDSA-1

MALE TRIAGE PROCESS FLOW

PATIENT ARRIVES

VISUAL ASSESSMENT & INITIAL SIEVE RED, YELLOW, GREEN

Fast track sick patients to critical area

YELLOW

RED

GREEN

WAITING ROOM

TRIAGE AVAILABLE

TRIAGE

PRIORTY 1 & 2

PRIORTY 2 & 3

PRIORTY 4 & 5

CRITICAL AREA

MST CUBICLE 5 TO 22 OR MST 13

MST 1 TO 4

IF AVAILABLE

PDSA-2

MALE TRIAGE PROCESS FLOW

PATIENT ARRIVES

VISUAL ASSESSMENT AND INITIAL SIEVE (A , B , C)

Fast track sick patients to critical area

A

B

C

TRIAGE

NEEDS SURGICAL PROCEDURE

PRIORTY 2, 3

MST 5 TO 22 OR MST-WR

PRIORTY 4

MST CUBICLE 1 TO 4

MUA-4

DISCHARGE

DIALYSIS WAITING AREA

MST-11 (TRIAGE)

MST-10

DISCHARGE

PDSA-3

- Monitor triage nurses performance
- Select the highly performing staff
- Dedicate triage team to reduce variation
- Standardize the practice
- Educate the team (CTAS program)
- Sustain the change

MONITORING TOOL FOR TRIAGE PERFORMANCE

NAME OF THE STAFF	1-Jan-17	2-Jan-17	3-Jan-17	4-Jan-17	5-Jan-17	6-Jan-17	7-Jan-17	8-Jan-17	9-Jan-17	10-Jan-17	11-Jan-17	12-Jan-17	13-Jan-17	14-Jan-17	15-Jan-17	16-Jan-17	17-Jan-17	18-Jan-17	19-Jan-17	20-Jan-17	21-Jan-17	22-Jan-17	23-Jan-17	24-Jan-17	25-Jan-17	26-Jan-17	27-Jan-17	28-Jan-17	29-Jan-17	30-Jan-17	31-Jan-17
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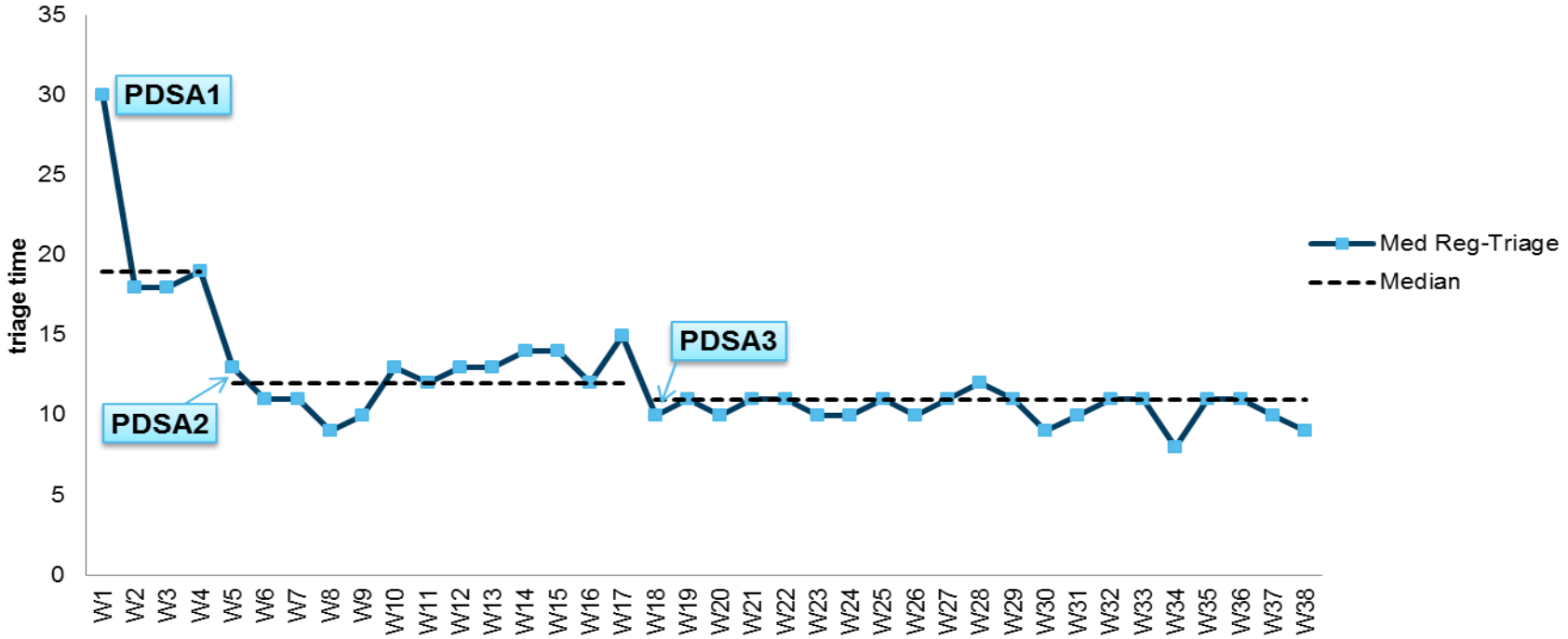
EXCELLENT

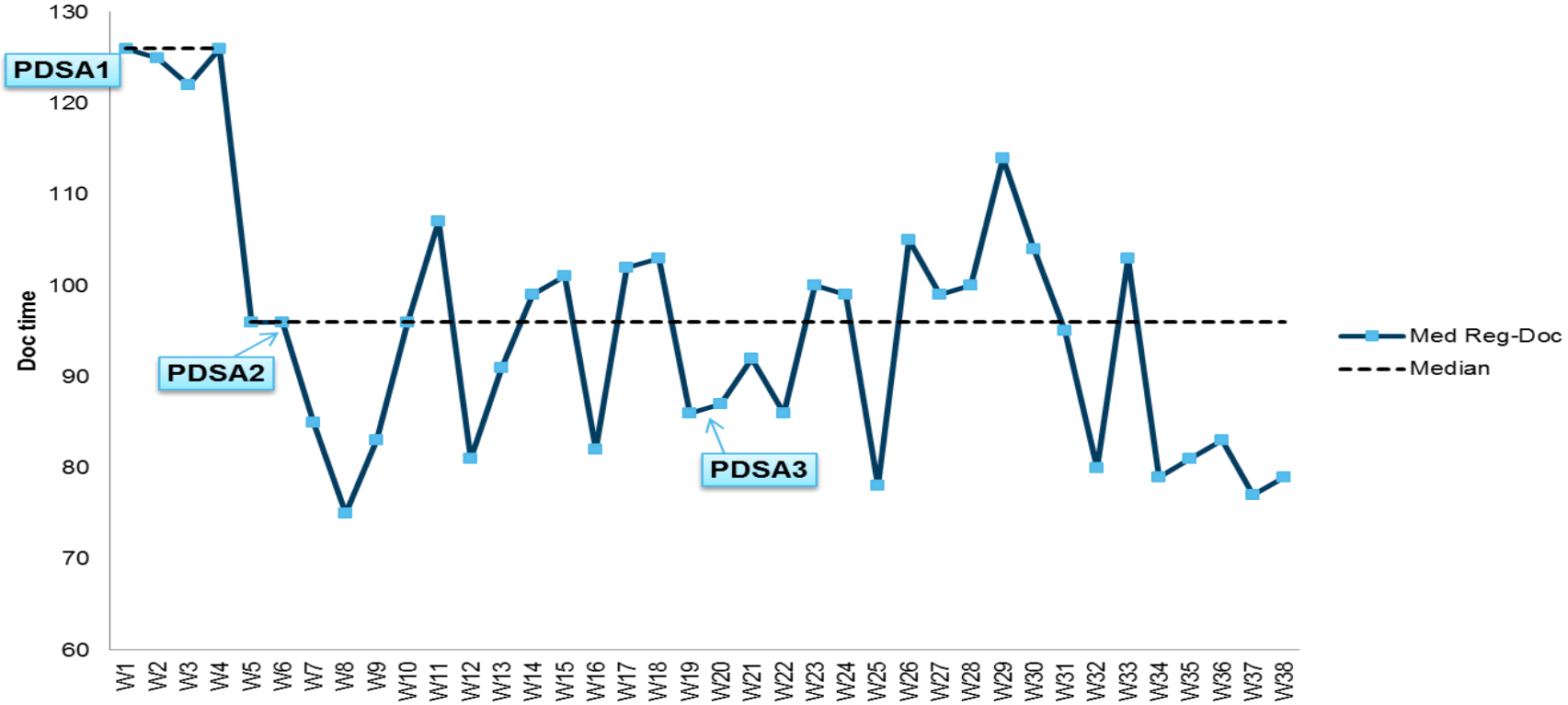
GOOD

POOR

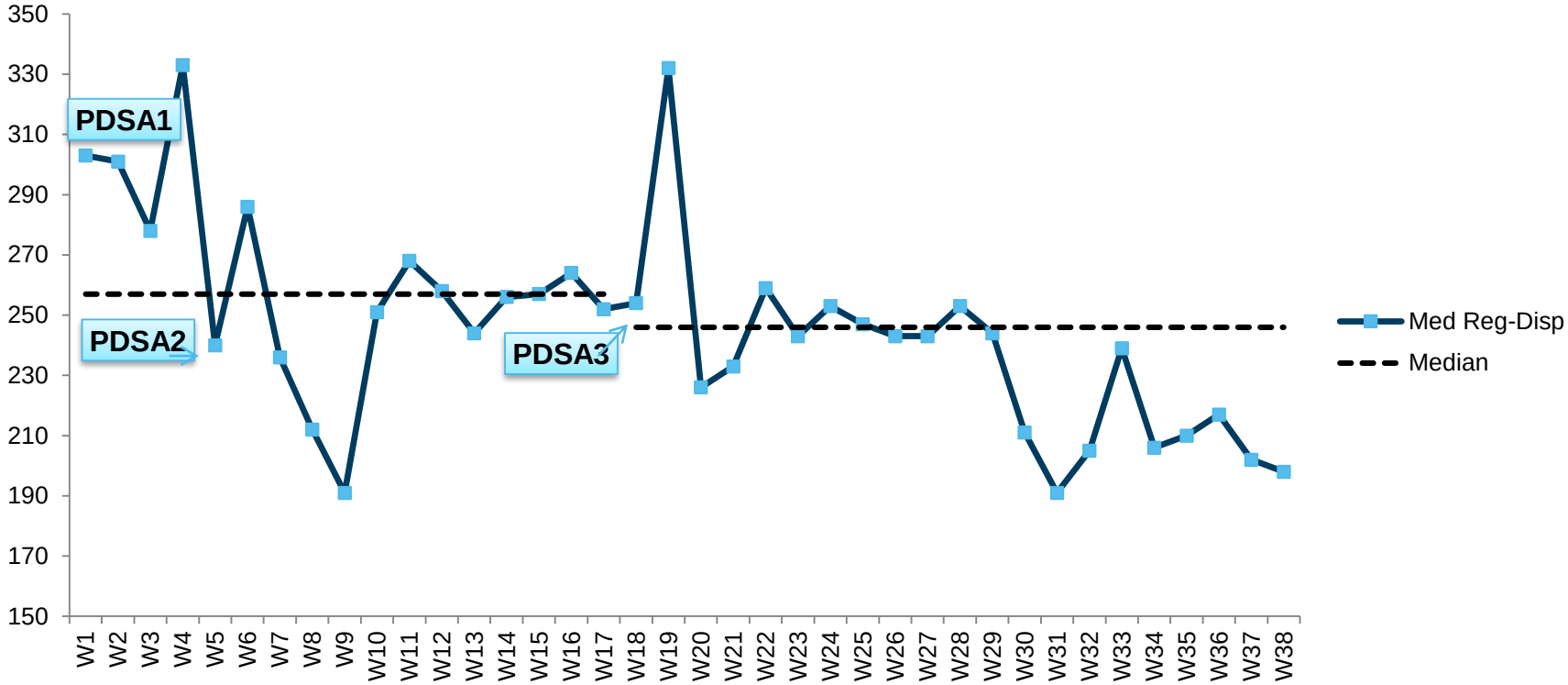
Time from Registration to Triage - Minutes



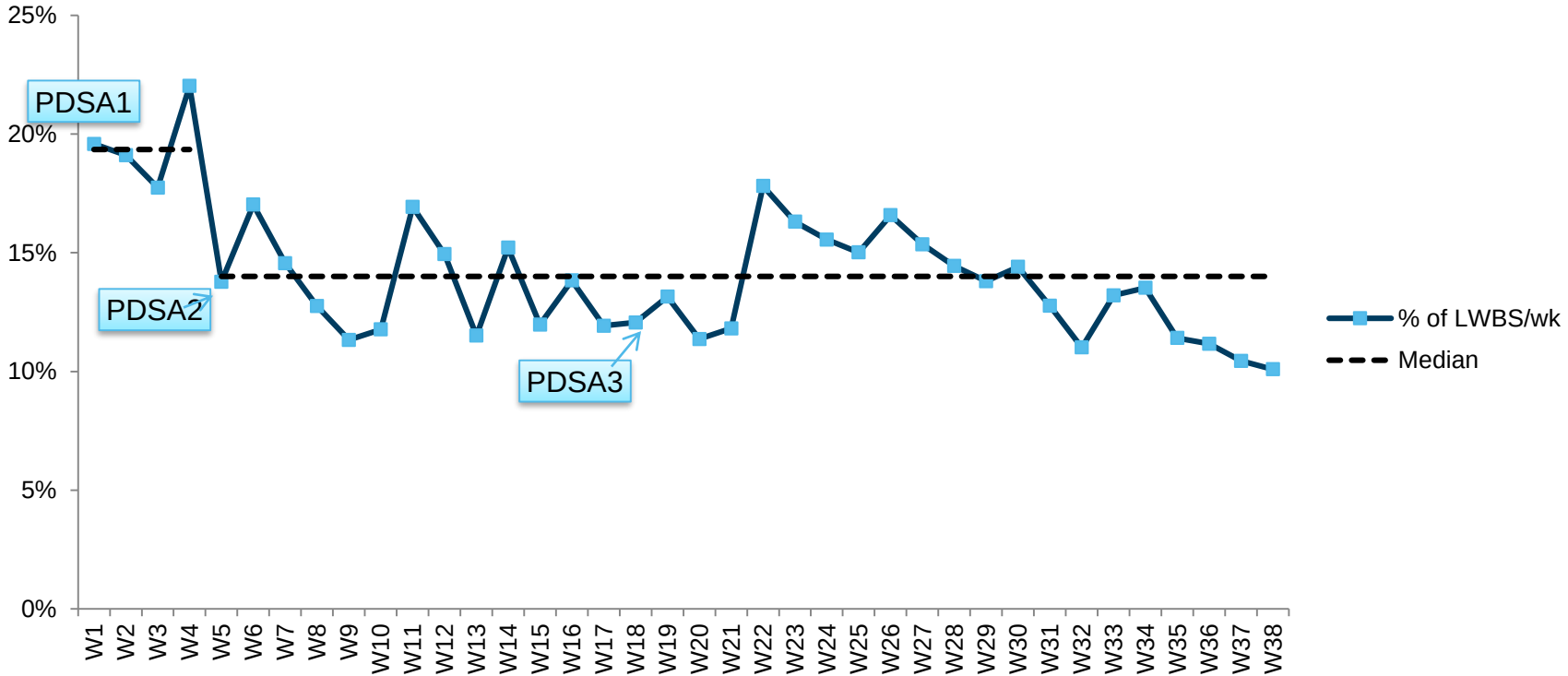
Registration to Physician Assessment - Minutes



Time from Registration to Disposition -Minutes



Rates of Left Without Being Seen (LWBS)



RESULT

- Reduced the time of registration to triage from **30 min to 12 min**
- Significantly reduced percentage of Left without being seen (**LWBS**) cases from **20%** to less than **13 %**.
- Reduce the time from registration to disposition by **40%**

Lessons Learned

- Application of Lean principles in **real clinical setting**
- Systematic approach to **problem identification**
- **Engagement** of end users
- Accepting **resistance** and dealing with resistors in a positive manner.
- **Data** collection, analysing and its value in studying results.
- **Administration** support

Lead : Mr.Ahmed Latif Abujaber, DON .HGH-ED

TEAM : Triage Team ,Ms.Shyni Varghese,HN; Hani Aljazzazi (HN); Mr.Bejoy Chacko,HN ; Ms.Sandra Escano Rull(QM),DR.Mazen

PROJECT TITLE Implementing lean principles to reduce the registration to disposition time in Emergency department(MST), Hamad General hospital

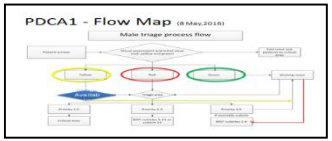
BACKGROUND: The median waiting time in ED is over 5hrs from registration to disposition. These wait times are mainly due to complex patient flow and triage process. The percentage of Left without being seen cases were also increasing.

AIM: To reduce the registration to disposition time in Emergency department of HGH by 50% through designating specific patient flow locations and fixing triage teams by the end of Jan 2017.

INTERVENTIONS:

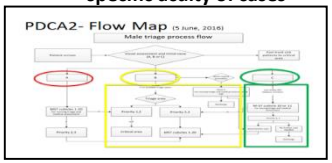
PDSA-1:

Eyeball screening and tagging cases as ABC according to quick assessment



PDSA-2:

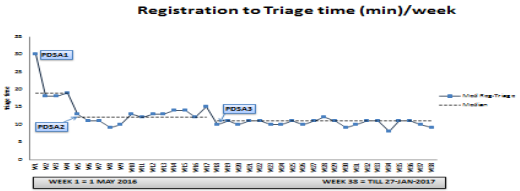
Identified Designated areas in ED for specific acuity of cases

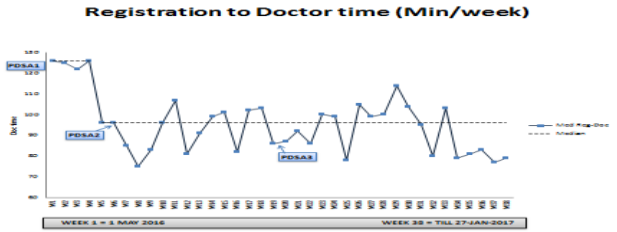


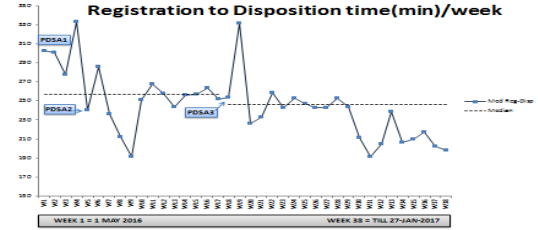
PDSA-3:

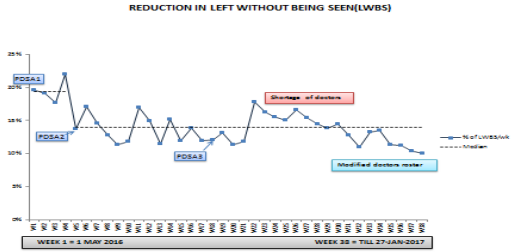
Special task triage team was developed and implemented

RESULTS:









CONCLUSION :Through implementation of specific designated area and a fix triage team, we are able to reduce the registration to triage time from 30 min to 12 min(about 50%). It significantly reduced percentage of Left without being seen (LWBS) cases from 20% to less than 13 %. Also registration to final disposition time is markedly reduced.

Improve Patient Flow from Emergency Department to Inpatient Wards

Prepared by:

Mr. Dawoud Jamous, DON-Bed Management-HGH
RN, BSc, MSc

Ms. Jisha Eappen, HN- Bed Management-HGH
RN, BSc

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Objective

To reduce time from bed allotment to bed occupied from emergency department -Male urgent area to medical inpatient bed.

Problem Statement

Prolong transfer process due to several wastes involved.

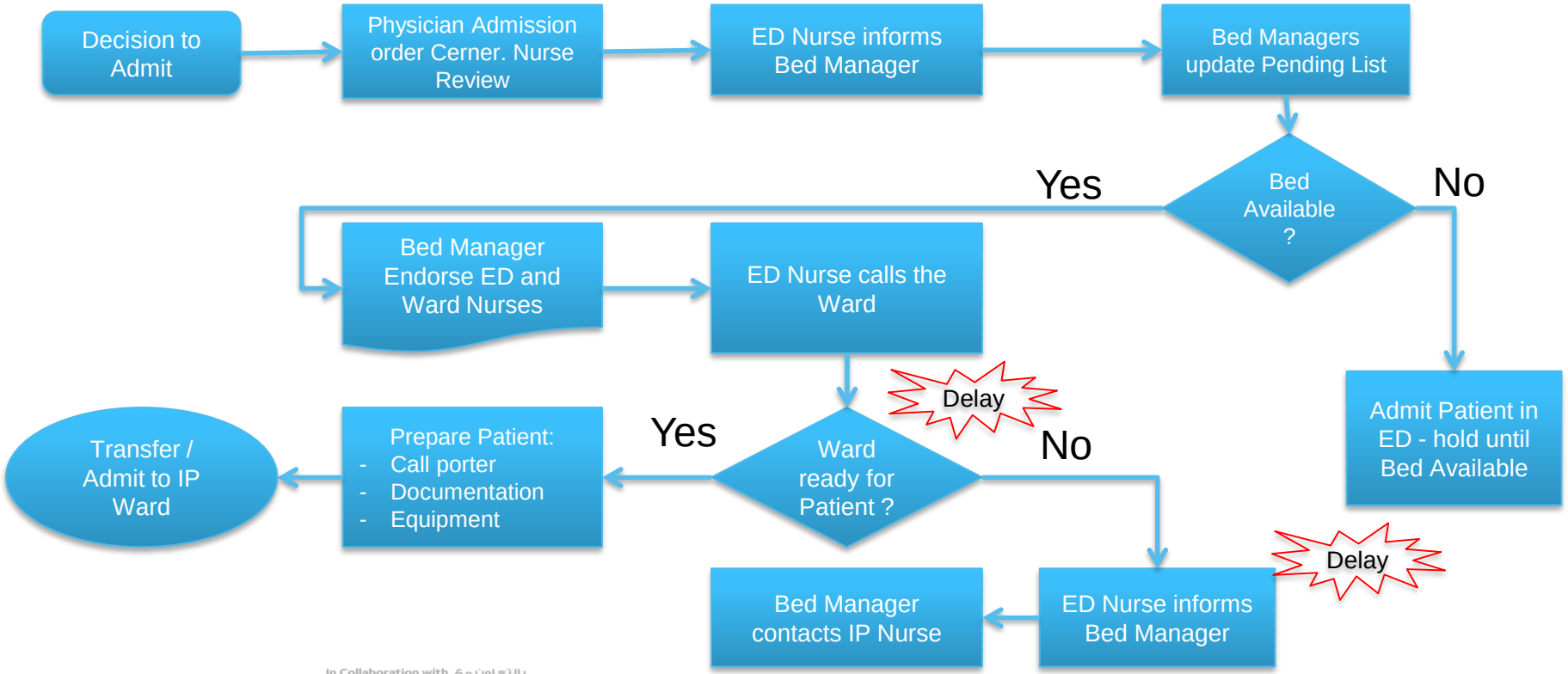
Methodology

- Detailed mapping process
- Waste walk
- PDSA Cycles
- Run chart

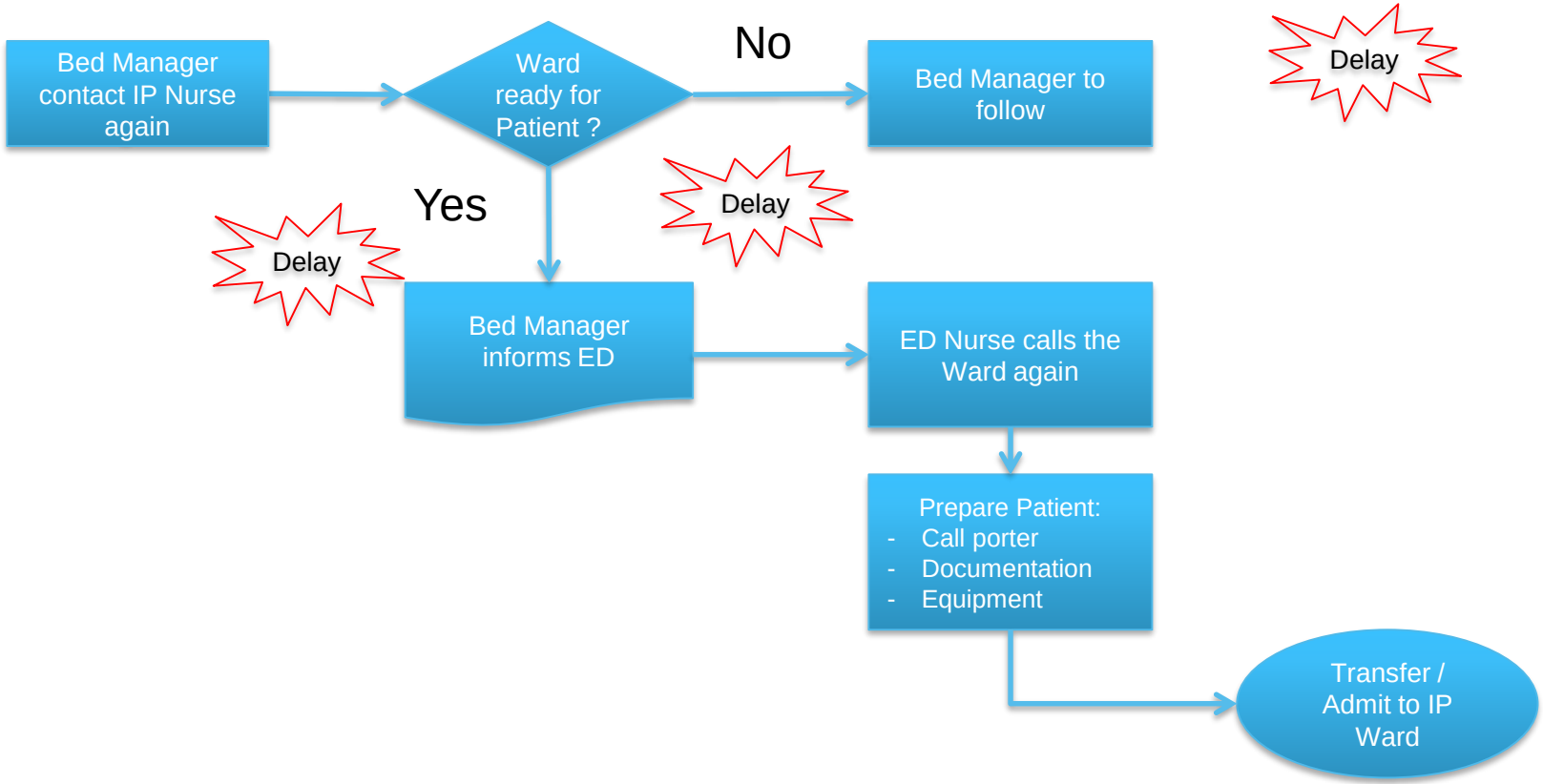
Main Findings

- Non-valued added steps
- Variations in transfer process
- Constraints

Current-Transfer process from ED to IP-Medicine



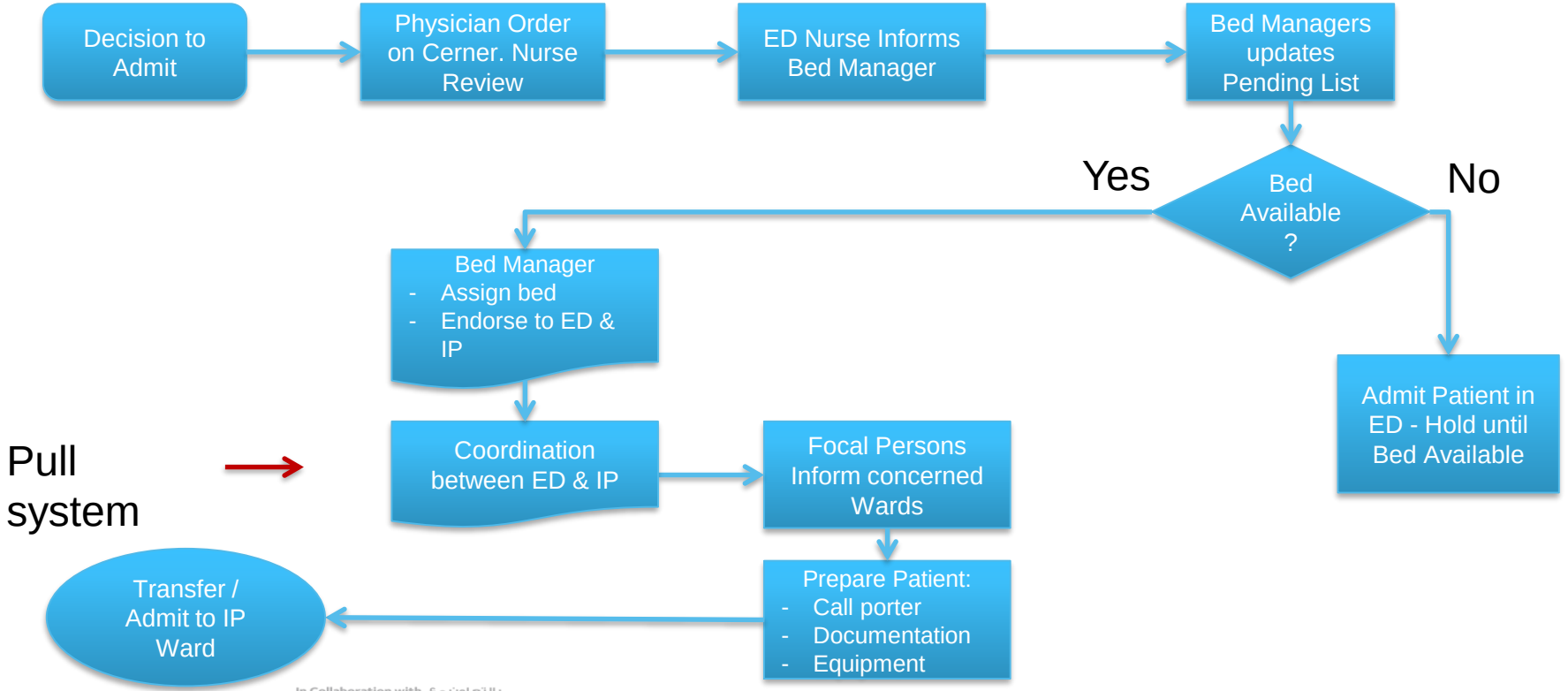
Continue…


Bed Manager contact IP Nurse again
Ward ready for Patient ?
No
Bed Manager to follow
Delay
Yes
Delay
Delay
Bed Manager informs ED
ED Nurse calls the Ward again
Prepare Patient:
- Call porter
- Documentation
- Equipment
Transfer / Admit to IP Ward

Interventions

- Introduce the role of patient flow coordinator
- Educate the health care providers about the new process
- Report the performance
- Standardize the process
- Clear roles and responsibilities

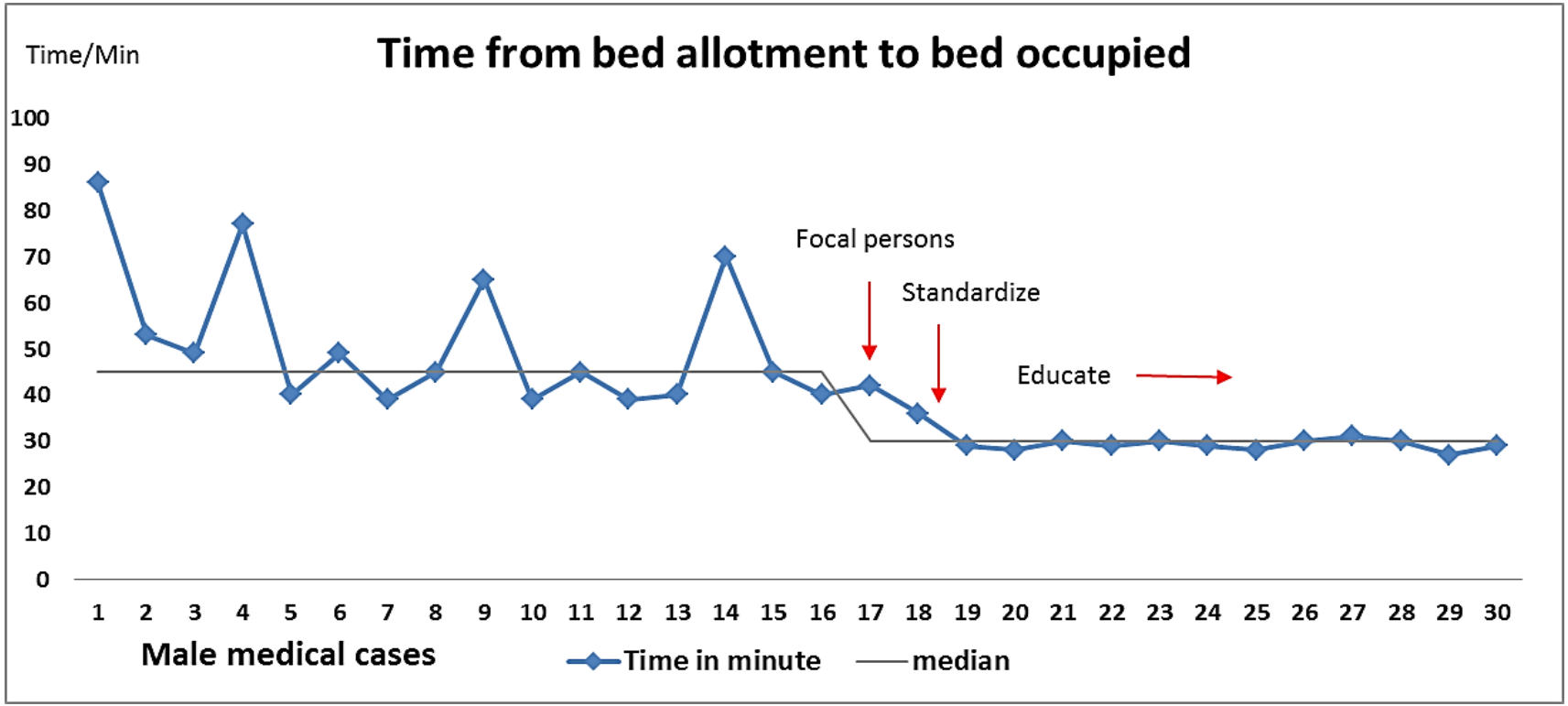
Lean-Transfer process from ED to IP-Medicine



ED Improvements With Lean

- Decrease in time from (Bed Allocation) to (Disposition) by 33%.
- Clarification of roles.
- Better communication among staff.
- Patient satisfaction
- Staff engagement

Bed Assignment to Arrival Time



Project Title: Improving transfer process from Urgent Male side in Emergency department to Medical ward in HGH by using lean tools

Aim - To reduce time from bed allotment to bed occupied from 45 minutes to 30 minutes by mid February 2017 by appointing focal person for ambulatory pending admissions from Urgent Male side in ED.

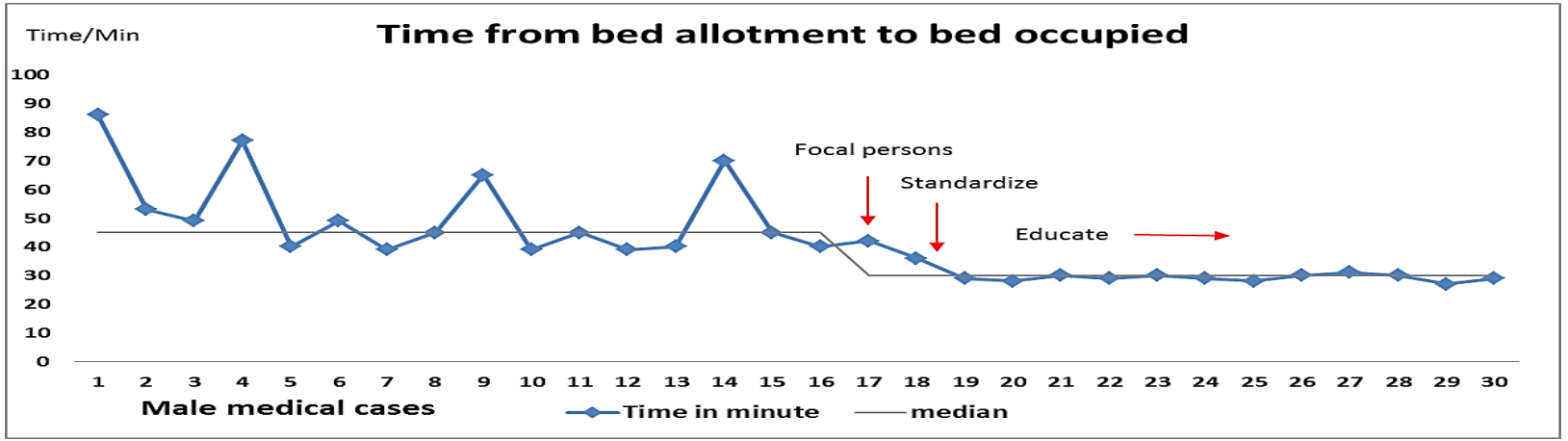
Problem Statement–

We identify that time taken from bed allotment to bed occupied is more due to several wastes involved. This is eventually increasing the total time of transfer from ED to AMAU/Medical wards.

Interventions –

1. Remove Intermediaries. two focal persons assigned for transfers from ED to wards (PDSA 1)
2. Standardize the process (PDSA -2)
3. Educate the involved staff (PDSA- 3)

Results:



Conclusion & Next Steps

- We identified several waste processes during patient transfer from emergency department to Inpatient wards. By assigning two focal persons as communicator for transfer served the purpose and we are able to reduce time from bed available on ward to bed occupied from 45 minutes to 30 minutes which is almost 33 % reduction.
- Our next step is to implement the standards admission process to all medical pending admissions in ED.

Lessons Learned

- Develop a **dedicated team**.
- **Variation** management.
- Eliminate **waste**
- Apply **Standardization**.
- **Care** coordination.
- **Quality**.
- **leadership**
- **Share** your success, challenges
- **Lean** is journey

Reducing Imaging Waiting Times for Medical Inpatients

Prepared by:

Ms. Seham Khamis , DON-Case management-HGH
RN, BSc, MSc

Objective

To improve flow through the diagnostic imaging pathway to reduce delayed discharges

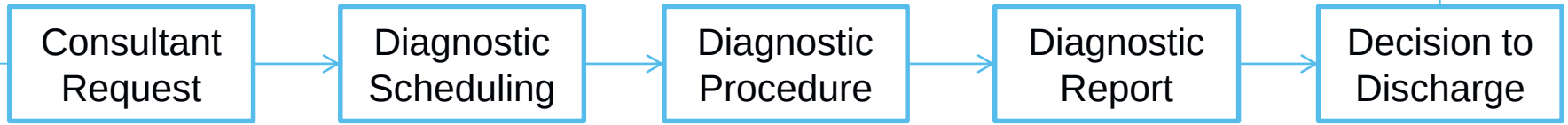
Scope

- Inpatient: (Neurology / Medical)
- Diagnostic Imaging: MRI

Initial Flow Map

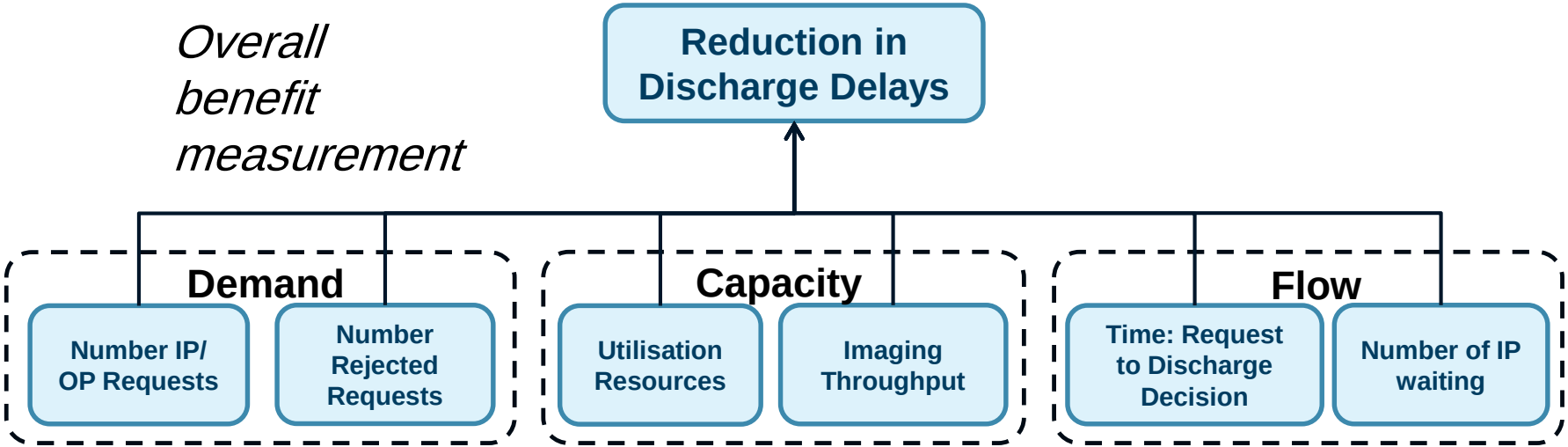
➢ Inpatient Group 1 Flow Map

➢ Inpatient Group 2 Flow Map: Imaging Pathway



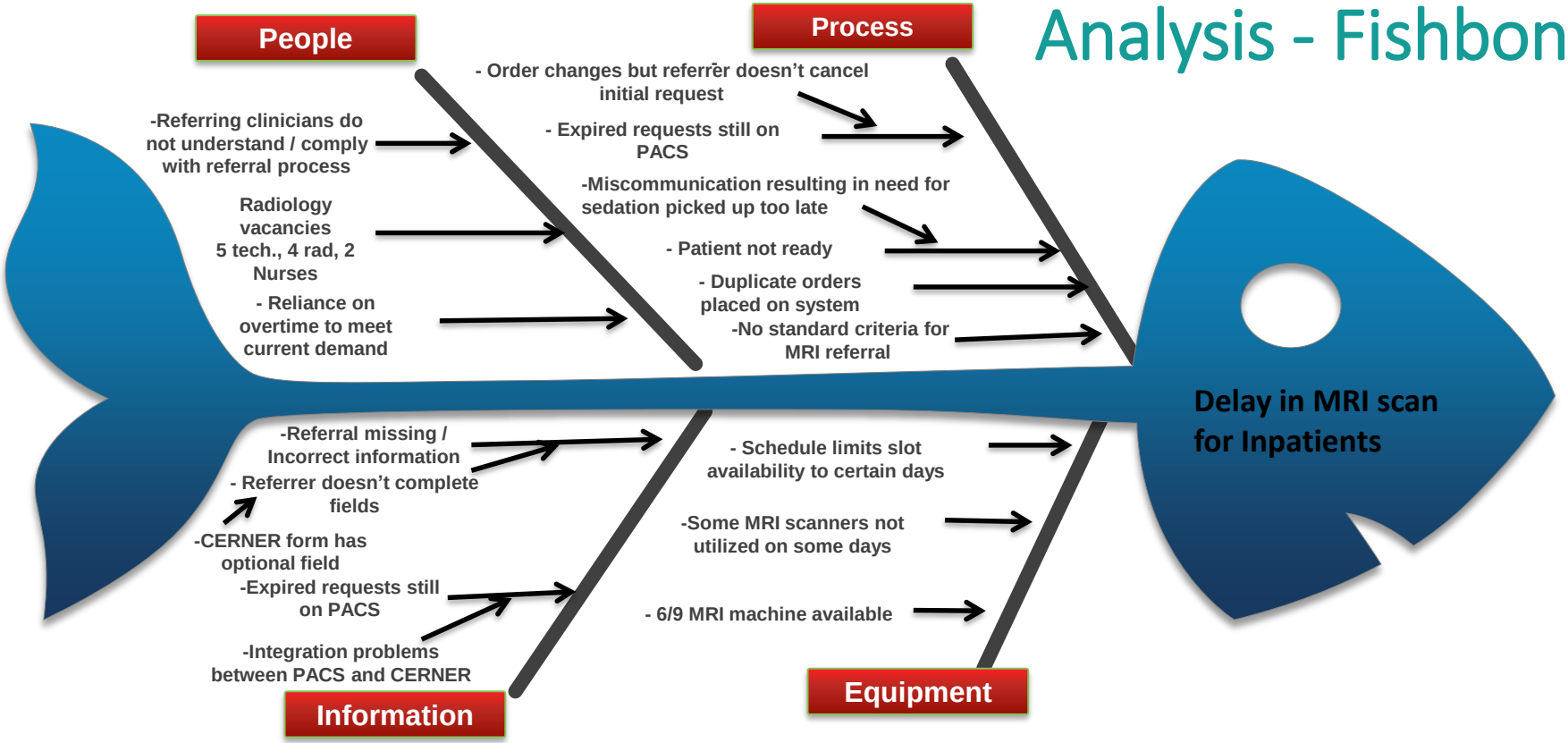
Measurement Logic

Overall benefit measurement



Process Measures (KPIs)

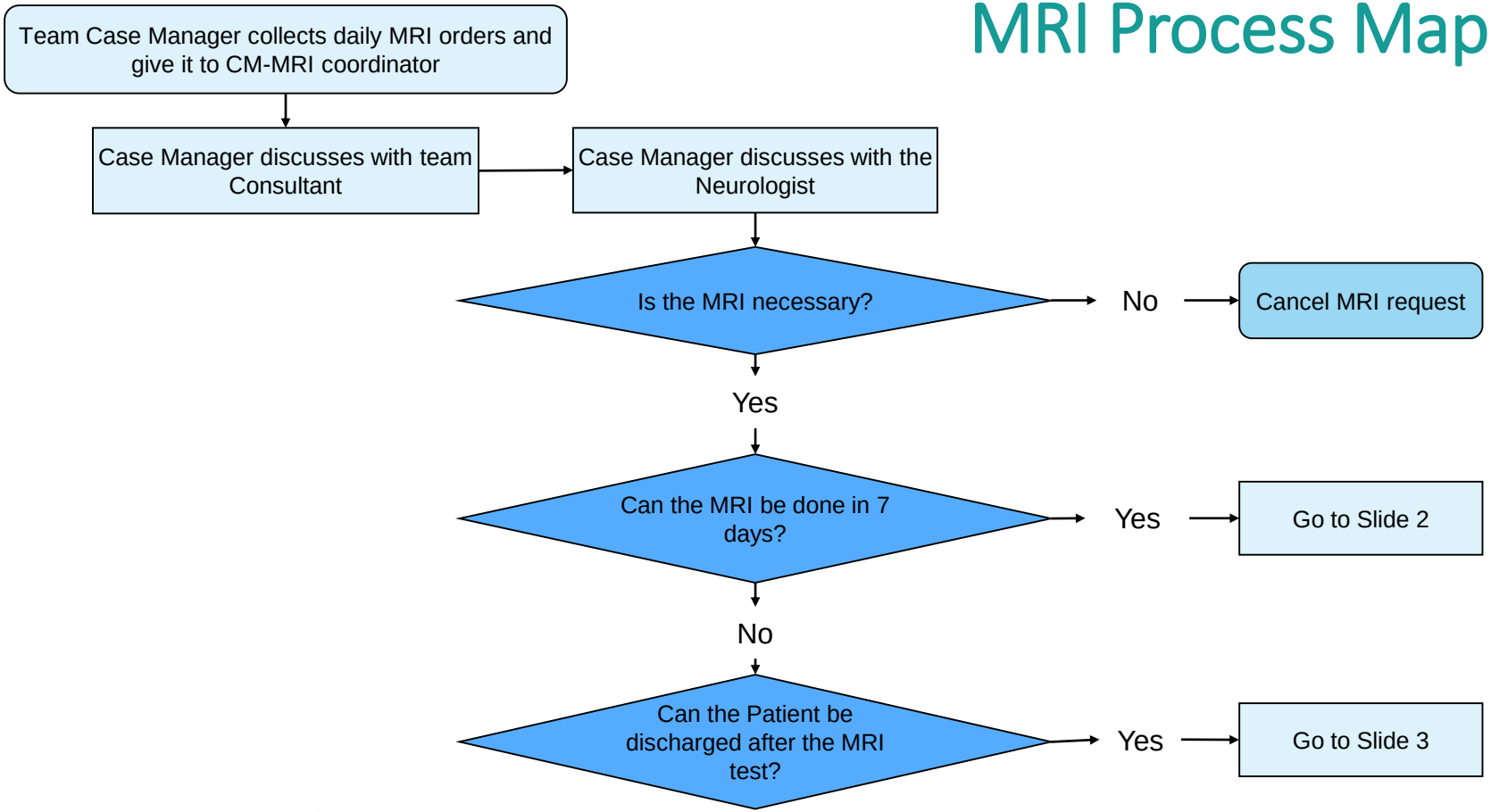
Root Cause Analysis - Fishbone



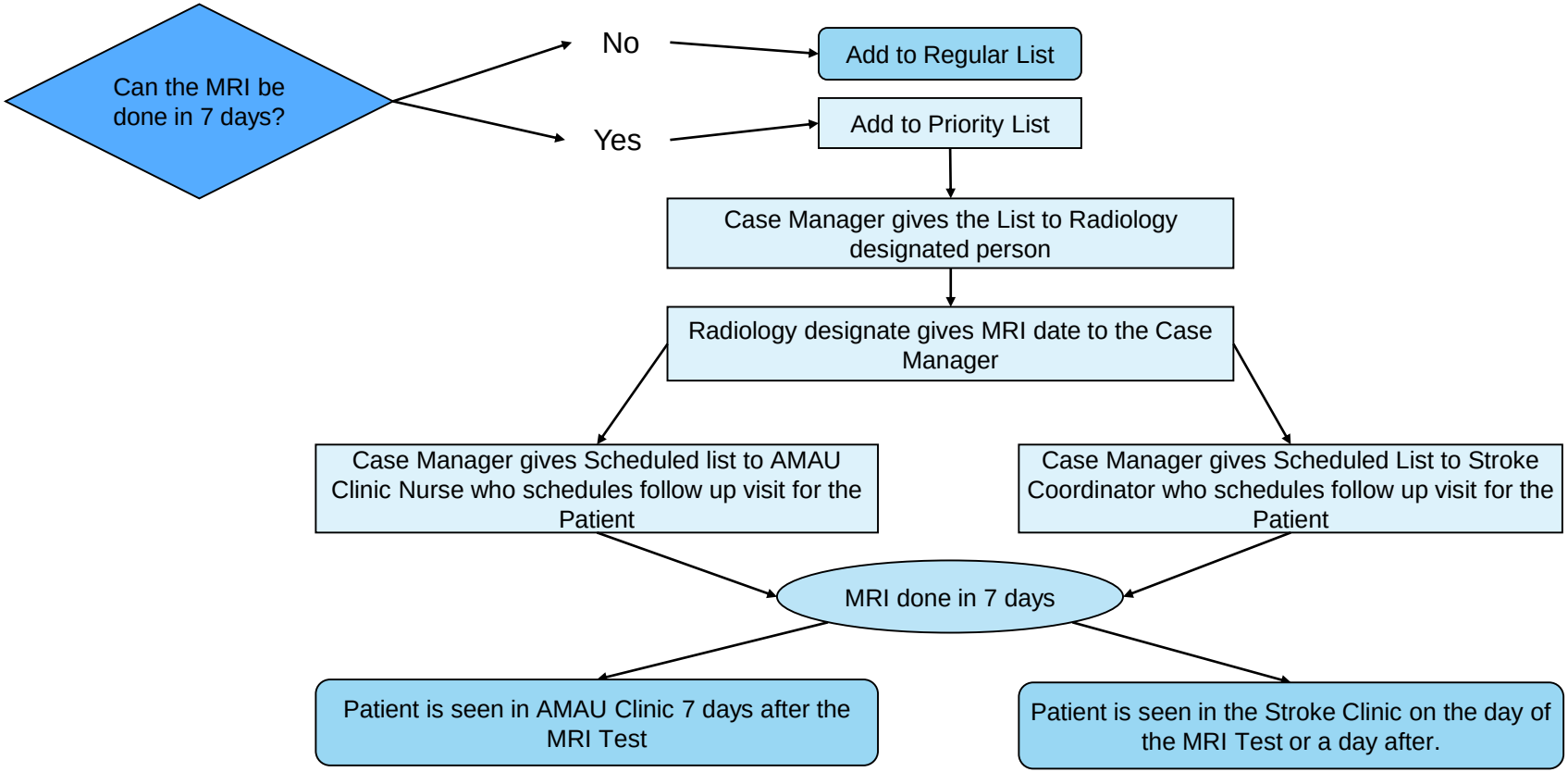
Main Findings

- **Anaesthesia** involvement and related delays
- Lack of **clinical and contact information** on request
- Incorrect **patient information**
- **Variation** in approach to clinical prioritization
- **Duplicate** and obsolete orders on system
- Lack of **standardisation** of MRI request process
- Unclear criteria including **informed consent**

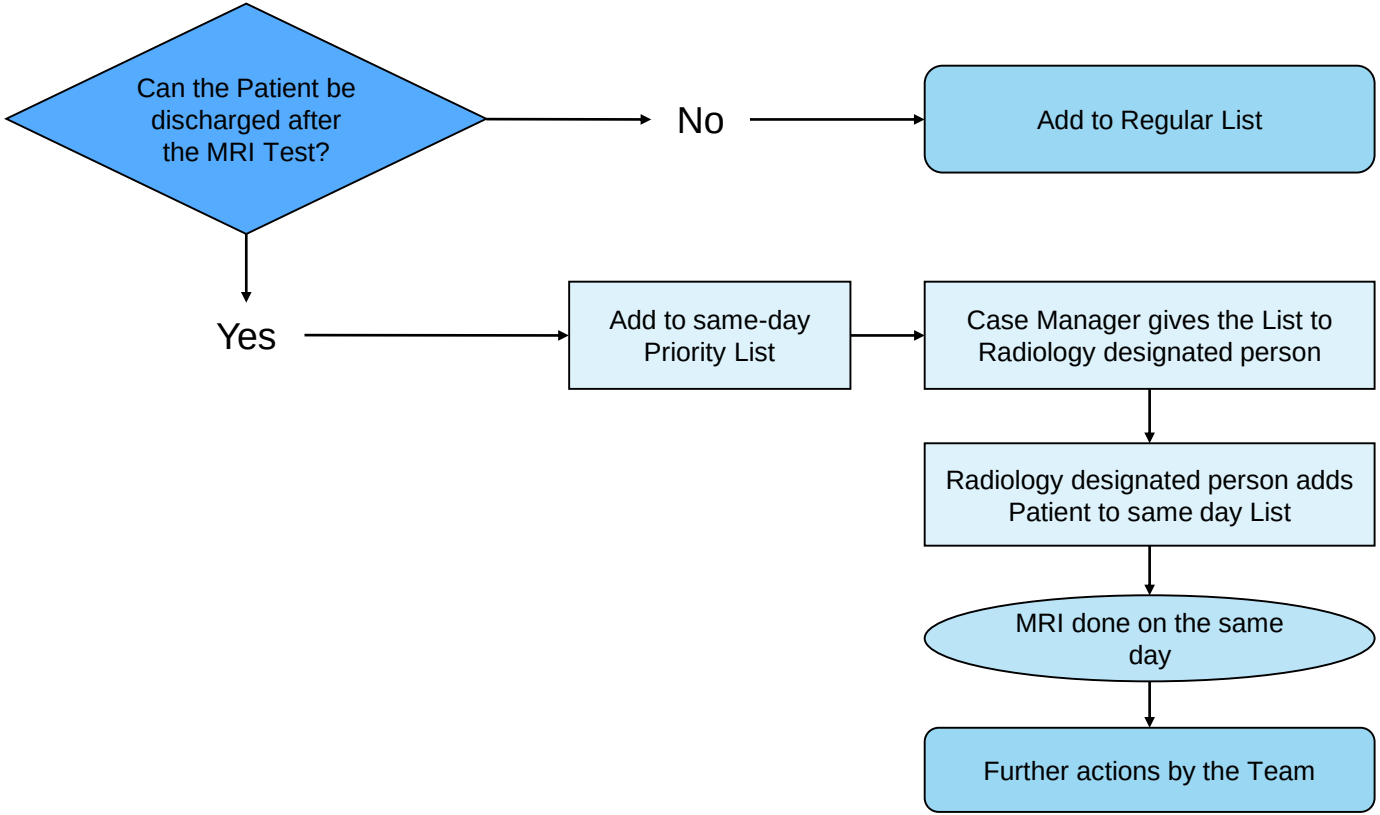
MRI Process Map - 1



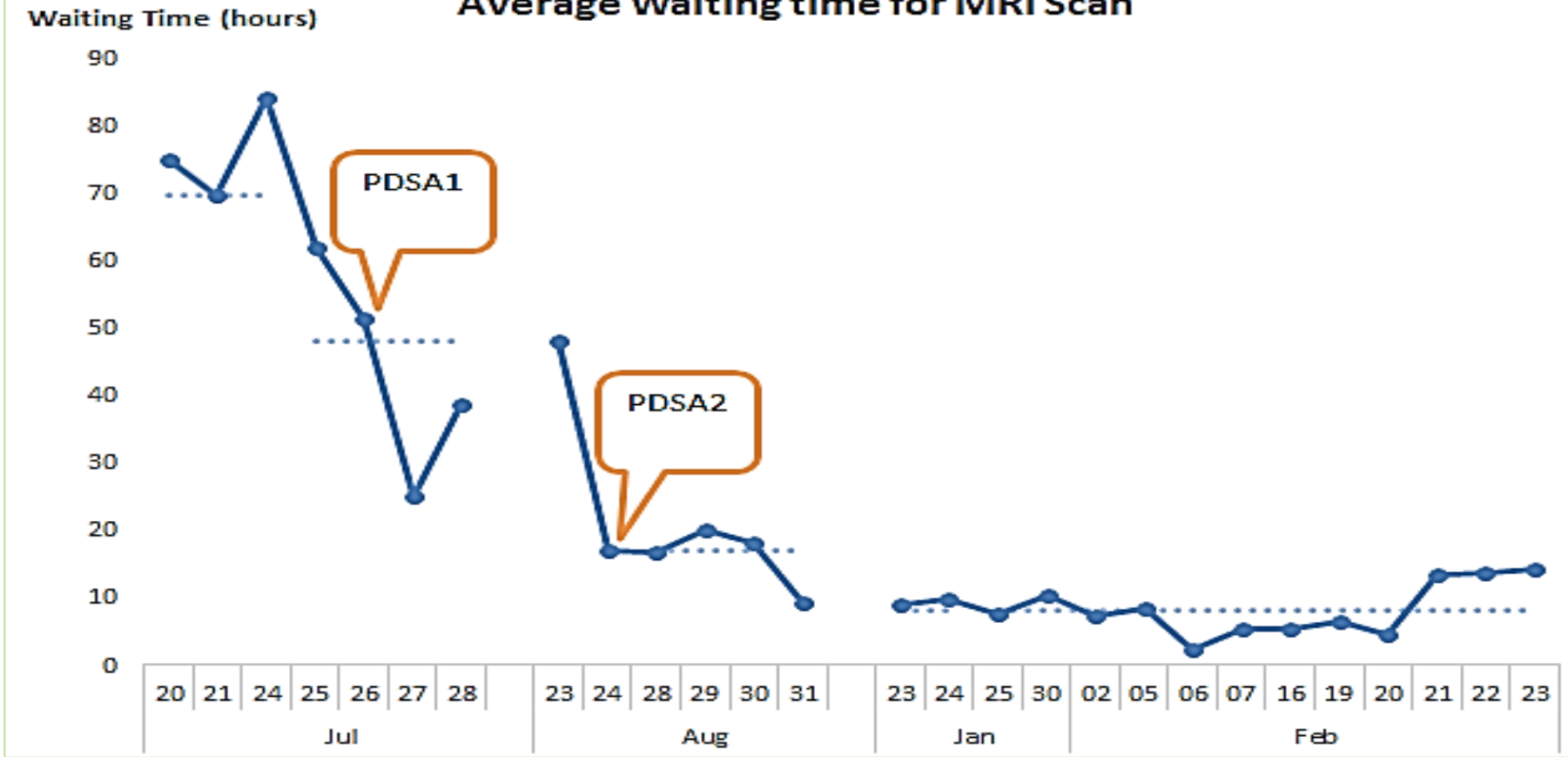
MRI Process Map - 2



MRI Process Map - 3



Average Waiting time for MRI Scan



Run Chart

Baseline data shows:

- Average waiting time for MRI is **68 hours** (more than 2.8 days)
- PDSA 1 - Applied the fast track MRI for patients that can be discharge, average waiting time for MRI at this time decreased to **45 hours** (more than 1.8 day)
- PDSA 2 – Increased 3-4 inpatient slot in the afternoon, average waiting time for MRI decreased to **17 hours**

Achievements

- **Engagement** from all stake holders, especially clinical imaging staff.
- **Commitment** of team members to implement the change -**24/7**
- Implementation of new protocol **(PDSA-1)** – positive anecdotal feedback
- Increased MRI capacity for inpatients **(PDSA-2)**
- Enhance **discharge process** in medical ward
- Change Cerner referral type from IP to OP**.**

Lessons Learned

- Better **understanding** of lean principles applied to this project
- Better understanding of **MRI process**
- Identified further **causes of delays** in MRI process
- Importance of **Communication**; weekly meeting, feedback & follow-up
- Focus on **realistic/feasible element** of project
- Collect and analyse the **right data** to demonstrate improvement

Improving Waiting Time of MRI for Medical Inpatients

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AIM: To improve waiting time for MRI for medical inpatients by December 2016.

BACKGROUND:

The discharge of medical patients was being delayed by 2-3 days wait for MRI. This impacted on patients and staff satisfaction and the movement of patients from the Emergency Department . The clinical imaging Department were willing team members.

METHODS:

- Mapping the process was done with stakeholders to identify opportunities for improvement. A new protocol between medicine, neurology and clinical imaging department was agreed and tested.
- **PDSA1** -Fast track protocol was applied (figure 1) to coordinate, facilitate and fast track the MRI requests for possible discharge patients in two categories:

1. Patient who can be discharged if an MRI done within 12 – 24 hours after result reviewed by Neurology.
2. Patients that can be discharged with outpatient appointment within 3-7 days.

- **PDSA 2** – Afternoon inpatient MRI slots increased by 3-4This was supported by. educational sessions for medical teams about the correct way in ordering MRI and avoiding unnecessary requests.

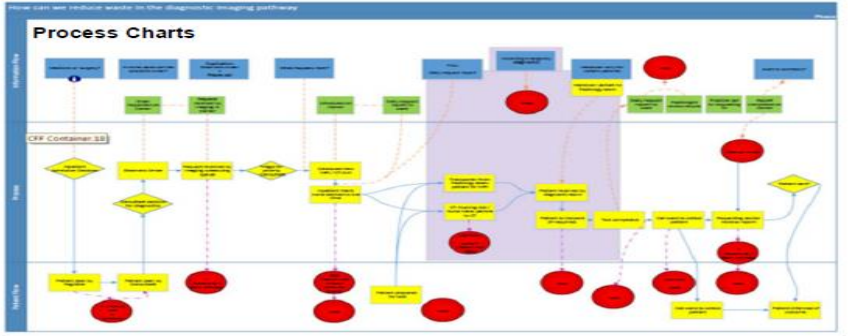

Figure 1. Process mapping

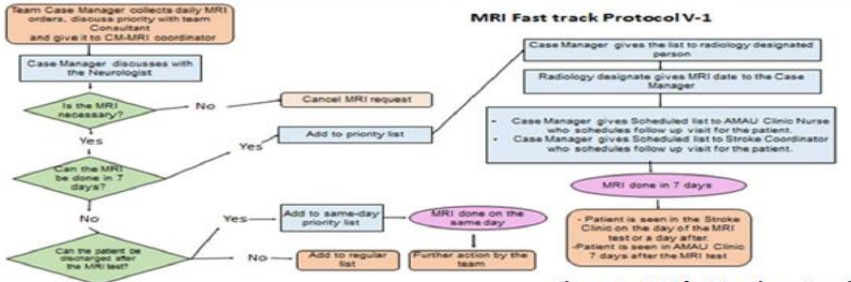

Figure 2. MRI fast track protocol

RESULTS:

- Baseline data shows that average waiting time for MRI was 68 hours (more than 2.8 days)
- After applying PDSA 1 (Fast track MRI protocol), average waiting time for MRI decreased to 45 hours (1.8 day)
- After applying PDSA 2 (Increased 3-4 inpatient slot) average waiting time for MRI decreased to 17 hours. In addition, a recent data collection (Jan-Feb2017) showed improvement in the average waiting time to 10 hours.

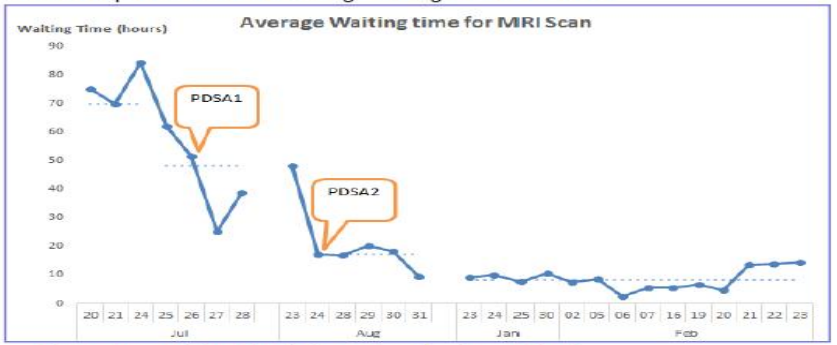

Figure 3. MRI waiting time by hours from the time ordered

Enhance Discharge Process in Medicine

Prepared by:

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RN, BSc, MSc

1 - Reducing Ambulance Turnaround Time

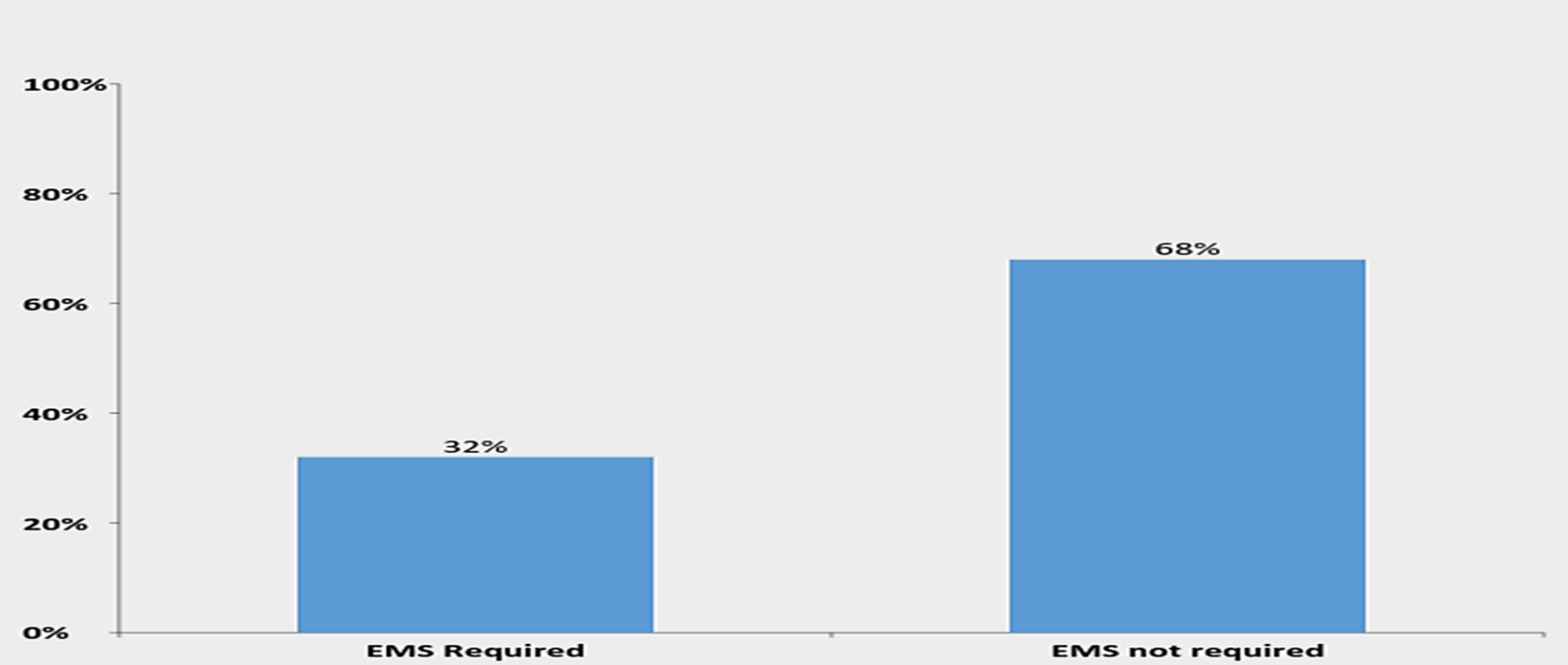
Objective

To reduce time of Ambulance collection for unplanned discharge inpatient from 50 to 20 minutes by mid March 2017.

Problem Statement

Prolong waiting time for booking EMS which impact on delay discharge/ transfers processes and patient satisfaction.

Percentage of Patients Requires EMS



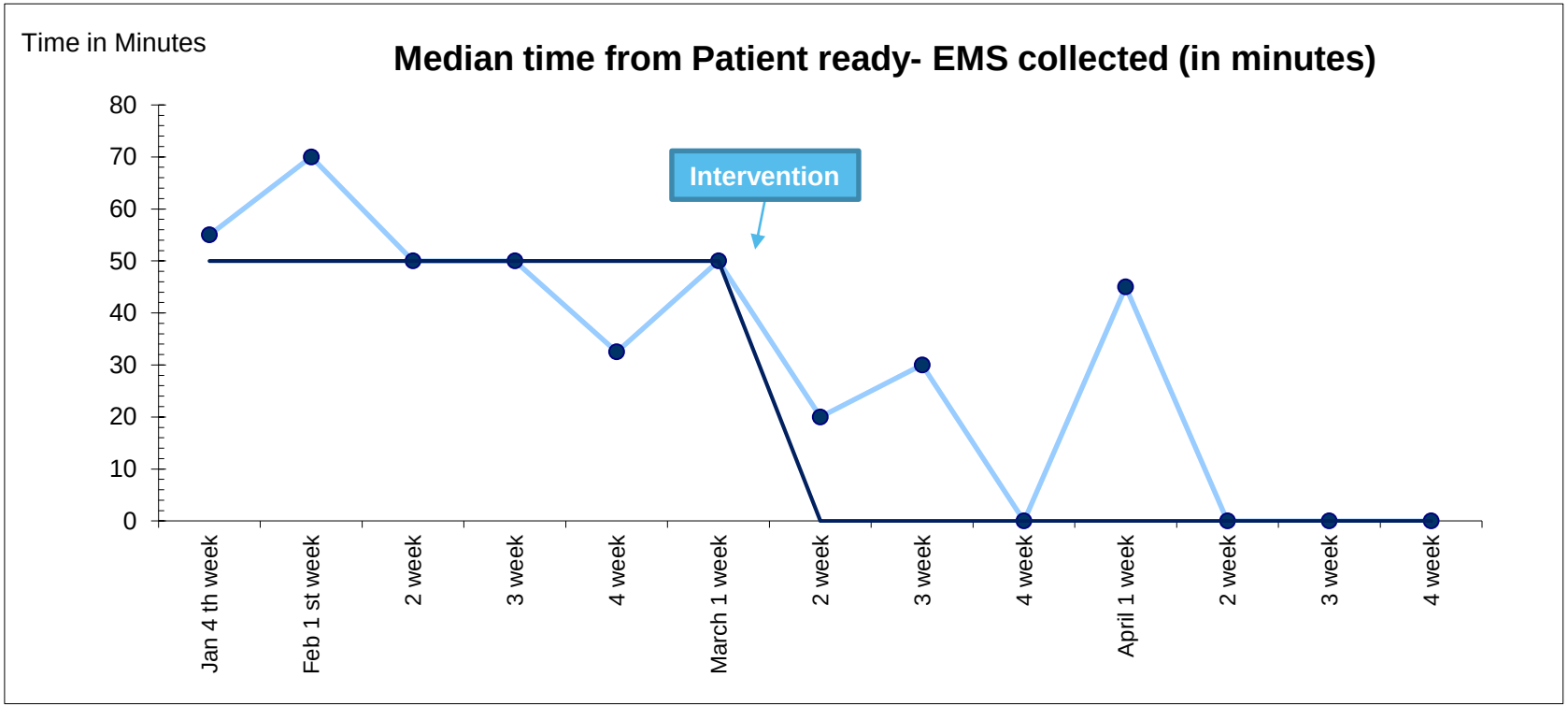
Intervention

- Assign one ambulance only for unplanned transfers/discharges
- Assign coordinator to communicate with ambulance services

Achievement

Reduce ambulance turn around time by 80 % from Average 50 minutes to 10 Minutes.

Median Time of Transport Patient by EMS



Reducing Ambulance Turn Around Time in Hamad General Hospital Using Lean

Pilot Study Conducted In Medical/Surgical Units Of Hamad General Hospital

Authors - Esmat Swallmeh (DON), Luay Smadi, (HN CBM), Rosemarie Angat (IP HN) , Lissy Roy (IP HN), Fatima Alshaer (CM), Hichem Askri (EMS Supervisor), Mounir Atchan (Clinical Pharmacy Specialist),Dr Mukesh Thakur (Consultant Internal Medicine, HGH)

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Background

Providing timely, coordinated and seamless care to patients as they are ready to transfer by ambulance service to other facility is a key component in the delivery of high quality care. Delay at this stage can affect patient satisfaction as well as outcome.

In Hamad General Hospital, we addressed this issue in Inpatient wards. We identify that the time when ambulance services are available to collect the patient from the hospital is high. This is delaying the overall discharge process from wards and eventually increasing crowding in ED

Objective

1. To reduce the time from Patient ready to Ambulance collected the Patient for transfer
2. To improve communication between In patient unit and ambulance services so that timely services can be arranged.
3. To arrange ambulance services for unplanned transfers/discharges

Aim

To reduce time of patient ready to leave the hospital and Ambulance collection from 50 minutes to 20 minutes by mid March 2017 in Acute Medical Assessment Unit of Hamad General Hospital.

Methodology

Our quality Improvement methodology is using Model for improvement as a framework to guide improvement work and frequent test of changes.

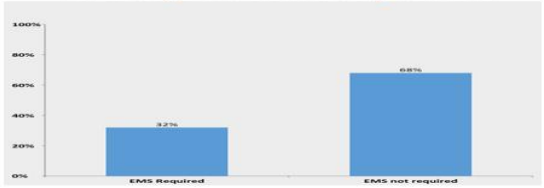
Model for Improvement

Interventions

PDSA – PLAN – DO – STUDY – ACT Driven Interventions

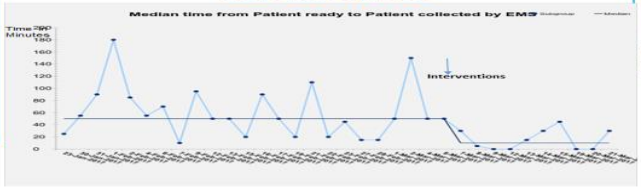
1. Engagement of stakeholders at all level including Nursing, physicians and Ambulance services
2. Arrangement of one ambulance only for unplanned transfers/discharges so that it can be available at all the times(PDSA 1)
3. Assign one Coordinator /secretary to communicate with ambulance services , so that continuity of plan can be managed and communication gaps can be avoided (PDSA 2)
4. After testing above changes and getting promising results, start implementing the new changes and educate Medical/Surgical team about the new service(PDSA 3)

Percentage of Patients requires EMS



Results

Median Time from Patient ready to Patient Collected by EMS



Conclusion

The most common factors leading to long waiting time for EMS to be arranged for patient transfer are communication gaps and to reach on a conclusion that which patients needs EMS transfers.
By this intervention implementation, we were able to reduce turn around time from patient ready to collected by ambulance from Average 50 minutes to 10 Minutes , by 80 % .

In addition, by this initiative, it was identified that almost 70 % of the patients do not need EMS transfers thus leaving it available for patients in real need for the same.

This will go a long way in ease the flow by facilitating early discharges from wards thus faster intake from ED and reducing ED crowding.

Sustainability Plan

The Acute Medical assessment Unit in Hamad General Hospital are busy wards with a high turnover of patients.
Inappropriate delays have been identified in Patient discharges /transfers via EMS. With the help of multidisciplinary team engagement, we are able to display promising results through this pilot study.

The profile of the issue needed to be raised and communicated to all levels of staff, with particular emphasis on patient experience, and expediting flow. Leaders at all level will play vital role in 'spreading the word' . Our next plan is to engage leaders at all levels and performance management by collection of the data and provide this new service to all HGH departments.

Team

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2 - Timely Discharge Medicine

Objective

To reduce time for discharge process from 4 hours to 2 hours by mid February 2017 in medical wards by piloting Standardized Discharge Process.

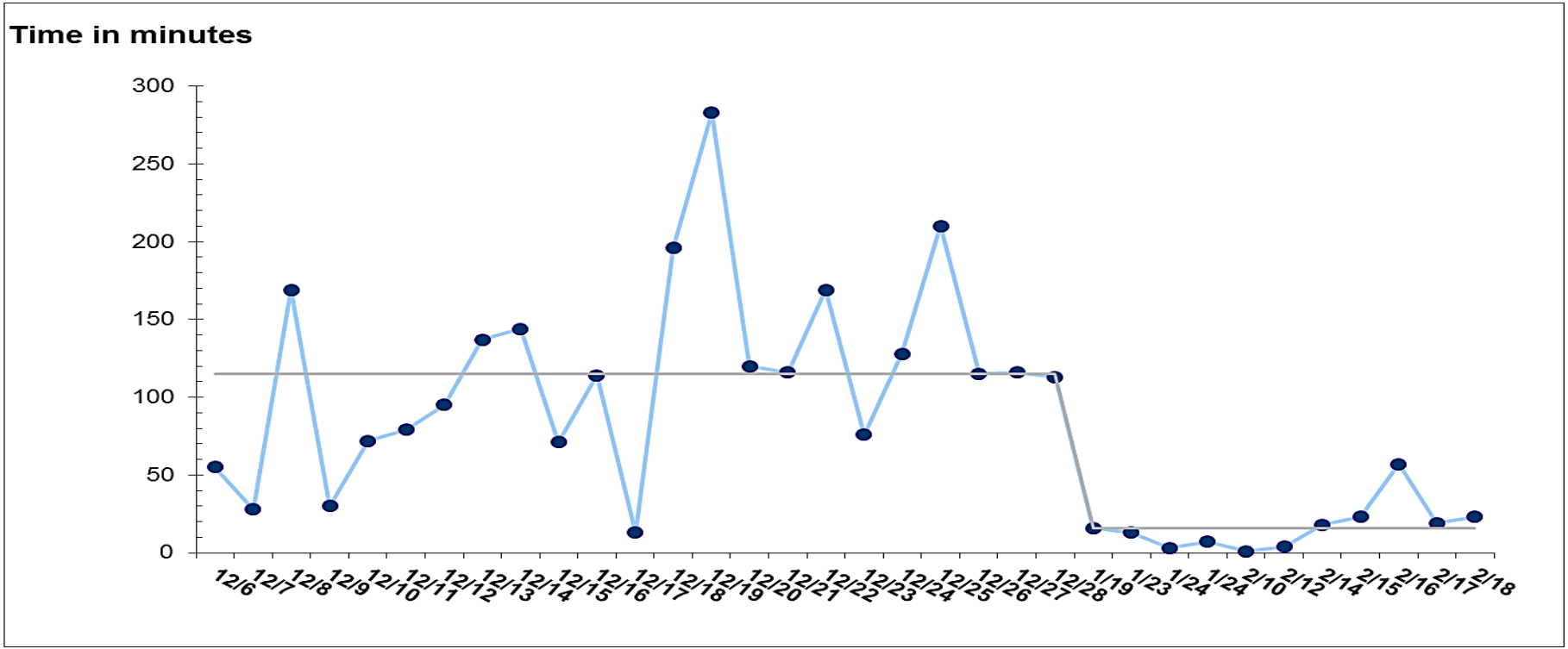
Problem Statement

Delay in placing discharge orders and medicine reconciliations for discharge patients.

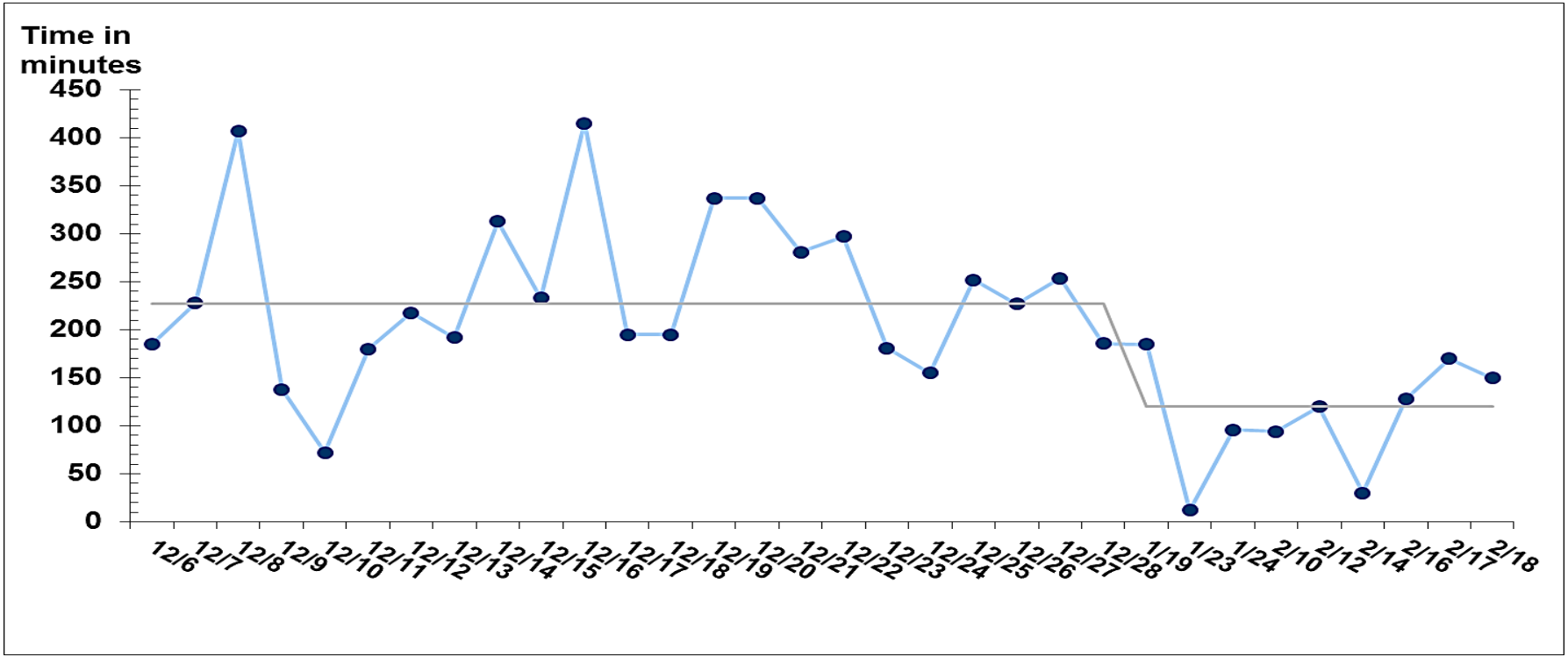
Methodology

- Detailed process mapping
- PDSA Cycles
- Run chart
- 5 S – Sort, Shine, Standardize, Set in Order & Sustain
- Standard Discharge Protocol developed and tested
- Utilize communications tool –SBAR

Average Time - Decision to Discharge Order



Average Time - Decision Discharge to Disposition



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Thank you

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