



DEDER GENERAL HOSPITAL

HEALTHCARE QUALITY IMPROVEMENT PROJECT

Improving Quality of Triage Care

By: Emergency Department QI TEAM

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Graduated QI Project: Improving Quality of Triage Care, April 2025

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ABSTRACT

Background: Ineffective triage systems in emergency departments lead to delayed care, poor patient outcomes, and inefficient processes. At Deder General Hospital, an audit conducted from July 15 to September 30, 2024, revealed only 43% adherence to appropriate triage care, resulting in long wait times, patient flow bottlenecks, and risks to critically ill patients.

Objective: This Quality Improvement (QI) project aimed to enhance triage care quality by increasing adherence from a baseline of 43% to $\geq 80\%$ from **October 1, 2024, to April 30, 2025**.

Methods: We used the Model for Improvement along with the Plan-Do-Study-Act (PDSA) cycle to guide our interventions. We analyzed the root causes of low triage care using fishbone and driver diagrams. Based on these findings, our main interventions included: training emergency staff on standardized triage protocols, redesigning the emergency department layout for better flow, introducing an electronic triage documentation system, and conducting monthly audits with feedback. The outcome measure data were collected monthly to track progress.

Results: The appropriate triage care increased steadily from 43% to 95% by April 2025 exceeding the target of 80%. Patient satisfaction increased from 34% to 71%. Each intervention played a role: training improved compliance to 53%, layout changes brought it to 79%, electronic documentation pushed it to 84%, and ongoing audits helped reach 95%. Importantly, these improvements didn't disrupt other workflows or strain resources.

Conclusion: This project showed that meaningful change is possible even in low-resource settings when there is commitment, teamwork, and a structured improvement approach. By combining practical changes with staff training and leadership support, we not only improved emergency triage care but also created a more responsive and patient-centered environment. The lessons we learned here can serve as a model for similar settings aiming to strengthen their emergency care systems.

INTRODUCTION

Emergency Triage is a critical process in healthcare systems to ensure that patients receive timely care based on the severity of their conditions. Ineffective triage can lead to delays in care, increased morbidity, and poor patient outcomes [1]. At Deder General Hospital, the current triage system faces challenges such as inconsistent standards, lack of training, and delays in identifying high-risk patients. This Quality Improvement (QI) project aims to enhance the appropriate triage care provided, ensuring accurate prioritization and improved patient outcomes.

This QI initiative aims to identify and address root causes of poor triage care and implement targeted interventions.

CONTEXT

This quality improvement project was implemented to improve quality of triage care at Deder General Hospital from September 10, 2024 to April 10, 2025.

STATEMENT OF PROBLEM

The emergency triage care provision audit conducted from **July 15, 2024** to **September 30, 2024** showed that the appropriate triage care provided is only **43%**. This led to inefficiencies in patient flow, prolonged waiting times, and potential adverse outcomes, particularly for critically ill patients.

AIM STATEMENT

This quality improvement project aims to improve pain management in inpatient departments from 35% from **September 10, 2024 to April 10, 2025**.

ASSESSMENT OF PROBLEM AND ANALYSIS OF ITS CAUSES:

To improve patient triage in the emergency department at Deder General Hospital, the quality improvement team used the Model for Improvement (MFI) and the Plan, Do, Study, Act (PDSA) cycle to test change ideas. We used Fishbone and Driver diagrams to identify and address root causes.

INTERVENTION

The QI team analyzed the root causes using a fishbone diagram (**figure 1**), plotted possible intervention packages using driver diagram and designed an implementation plan (**figure 2**). A series of PDSA cycles were conducted. Intervention data were collected and analyzed monthly. the intervened change ideas were:

1. Provide training for all Emergency Department staff,
2. Redesign Emergency Department layout
3. Implement an electronic triage documentation system, and
4. conduct regular audit with feedback.

FISHBONE DIAGRAM

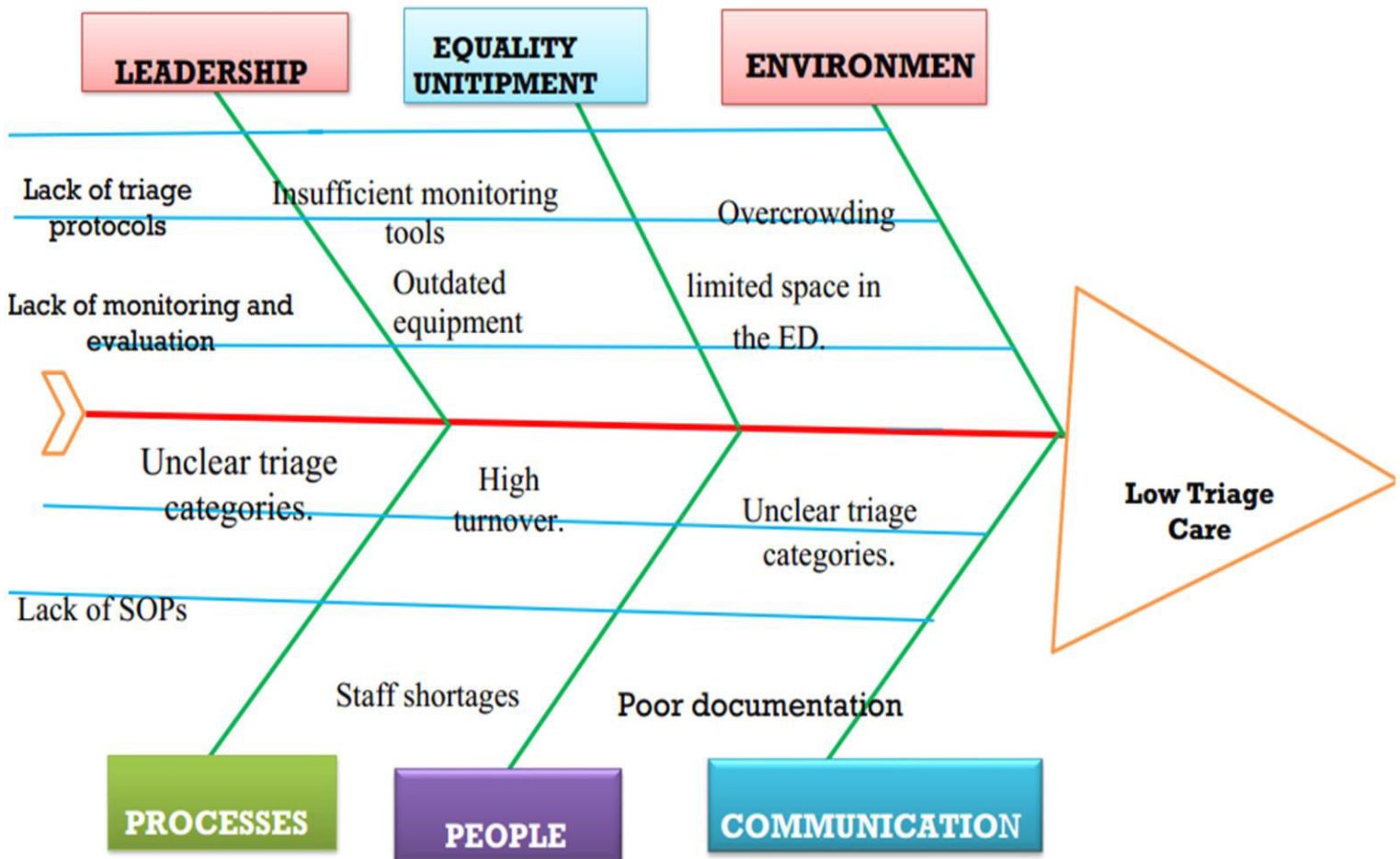


Figure 1: Fishbone diagram to improve the Quality of triage care from current median of 43% to 80% from October 01, 2024 to April 30, 2025.

DRIVER DIAGRAM

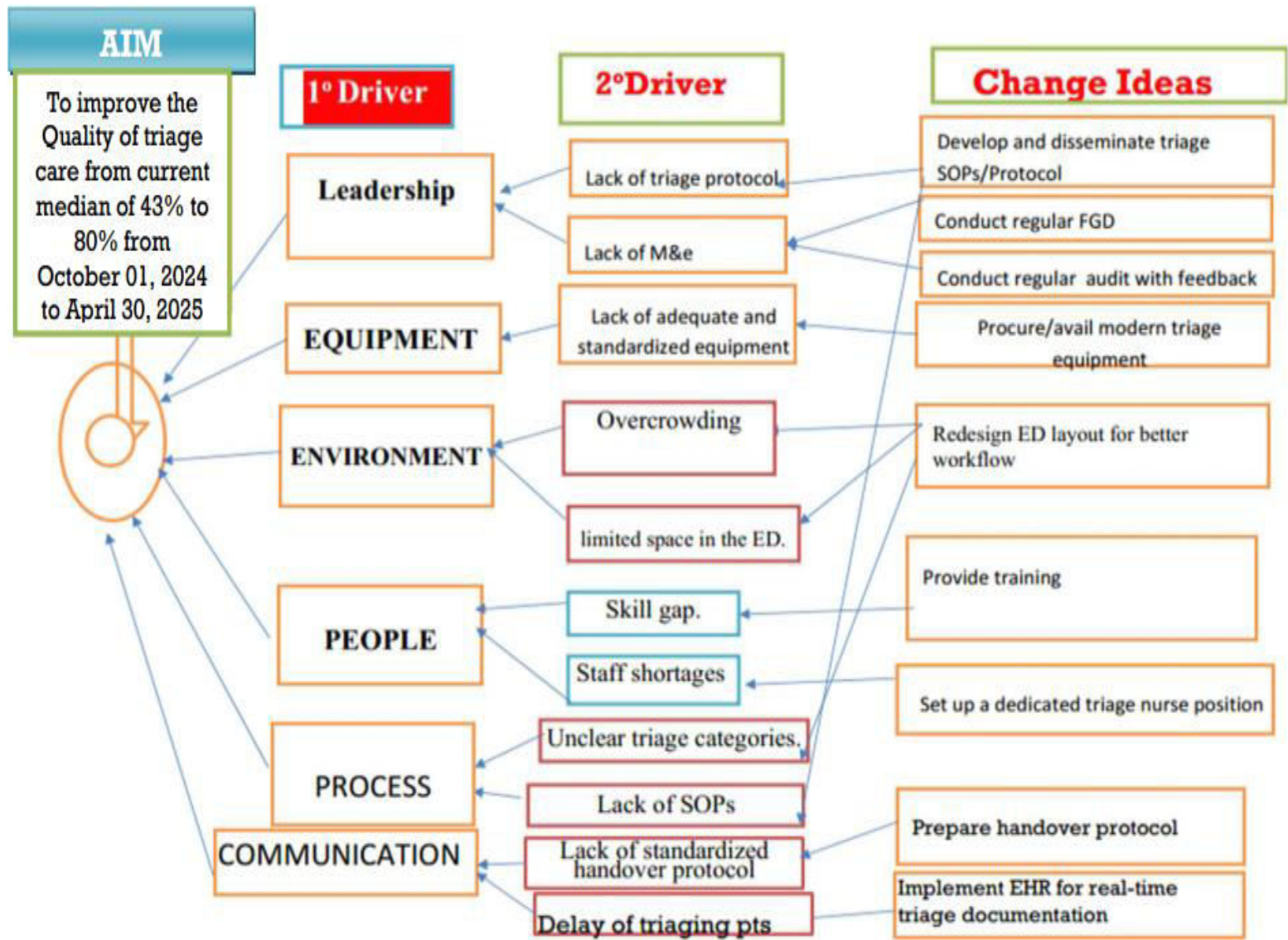


Figure 2: Driver diagram to improve the Quality of triage care from current median of 43% to 80% from October 01, 2024 to April 30, 2025.

MEASURES

Outcome measurement

- ✎ Percentage of patients received appropriate triage care

Process measures

- ✎ Proportion of trained staff
- ✎ Proportion of the emergency triage system redesigned
- ✎ Proportion of electronic triage documentation system
- ✎ Proportion of triage care audits conducted with feedback

Balancing measures

- ✎ Proportion of patient satisfaction

IMPLEMENTATIONS OF PLAN OF PDSA

Table 1: Process Measures:

Change idea	How	Responsible Body	When	Where
Provide training for all Emergency Department staff.	<ul style="list-style-type: none"> A training team was identified, and a curriculum was developed based on evidence-based guidelines. Training materials were prepared, and sessions were conducted. 	quality unit & Emergency director	October 01- 30, 2024	Deder General hospital training hall
Redesign Emergency Department layout	<ul style="list-style-type: none"> Feedback from staff was collected to identify bottlenecks. A redesigned floor plan was created and implemented after approval. Monthly meetings were established to address ongoing challenges and evaluate layout effectiveness. 	Hospital administration, quality unit, and emergency director	November 01,2024 To December 30, 2024	Deder General hospital Emergency department
Implement an electronic triage documentation	<ul style="list-style-type: none"> user-friendly electronic system was selected and piloted. Staff were trained, and backup documentation protocols were developed. 	Hospital administration, quality unit, and emergency director	January 01, 2025 To February 30, 2025	Deder General hospital Emergency department
Conduct regular audit with feedback	<ul style="list-style-type: none"> An audit checklist aligned with triage Quality standards was developed. Monthly audits were conducted, and feedback reports were shared with staff. 	Quality unit, Emergency director & Head Nurse	March 01, 2025 To April 30, 2025	Deder General hospital Emergency department

Table 2: Data collection Plan (process indicators)

Process/Change idea	Data source (Where)	Data collection method (how)	Time (When)	Frequency	Responsible body
Introduce standardized triage training for all ED staff.	Training attendance records	Attendance sheets, pre/post-assessment	October 01-30, 2024	Monthly	Emergency Dept head (Murad A)
Redesign ED layout to optimize triage workflow.	ED patient flow records	Observation checklists.	November 01,2024 To December 30, 2024	Monthly	Emergency Dept head (Murad A)
Implement an electronic triage documentation system	System-generated reports	Built-in system analytics, downtime report template	January 01, 2025 To February 30, 2025	Monthly	Emergency Dept head (Murad A)
Conduct regular audit with feedback	Audit reports and implementation tracking.	Audit forms, feedback and tracking template	March 01, 2025 To April 30, 2025	Monthly	Emergency Dept head (Murad A)

Table 3: Process Measures performance tracking sheet

S/N	Change Ideas/ Interventions	Process measure			Remark
		Number/session planned	Number/session performed	% of achievement	
1.	Introduce triage training for all ED staff.	2	2	100	
2.	Redesign ED layout to optimize triage workflow.	1	1	100	
3.	Implement an electronic triage documentation system	1	1	100	
4.	Conduct regular audit with feedback	2	2	100	

Do of PDSA

Table 4: Outcome Indicator Performance Tracking Sheet

Aim	Numerator, Denominator & outcome Indicator		Time: Monthly						
			30-Oct-24	30-Nov-24	30-Dec-24	30-Jan-25	28-Feb-25	30-Mar-25	30-Apr-25
To improve the Quality of triage care from current median of 43% to 80% from October 01, 2024 to April 30, 2025	Numerator	Number of patients triaged according to standard guidelines.	10	14	15	18	16	17	18
	Denominator	Total number of patients MR assessed/audit	19	19	19	19	19	19	19
	Indicator	Percentage of patients received appropriate triage care	53	74	79	95	84	89	95

RESULTS

The Quality Improvement Project (QIP) at Deder General Hospital led to a significant enhancement in the quality of emergency triage care. Within just seven months, compliance rates rose from **43% to 84%**, surpassing the initial target of **80%**. Progress was steady and encouraging throughout the project timeline: appropriate triage care improved to 53% by October 2024, climbed to 74% in November, reached 79% in December, and peaked at 95% by April 2025 (**Figure 3**).

The project used a series of Plan-Do-Study-Act (PDSA) cycles that drove these tangible improvements: **PDSA 1 (October 1–30, 2024)** centered on staff training, boosting compliance to 53%. **PDSA 2 (November 1–December 30, 2024)** focused on redesigning the Emergency Department layout, further improving compliance to 79%. **PDSA 3 (January 1–February 30, 2025)** introduced electronic triage documentation, raising compliance to 84%. And **PDSA Cycle 4 (March 1–April 30, 2025)** emphasized regular audits and feedback, sustaining gains at 95%. These cycles allowed for continuous learning and adaptation, including optimizing triage workflows and incorporating digital tools. The commitment of a multidisciplinary team and strong leadership support were essential in overcoming early resistance and embedding new standards into routine practice.

In terms of balancing measures, the QIP yielded notable positive results. Patient satisfaction increased significantly from **34% to 71%**, reflecting reduced waiting times and better communication during triage. Staff adherence to protocols improved, with no reported disruptions or unintended consequences—demonstrating that the new systems, such as electronic documentation, were smoothly integrated. Importantly, resource use remained stable despite these changes, highlighting the sustainability of the interventions (**Figure 4**).

RUNCHART WITH MULTIPLE PDSA CYCLE

QIP: To improve the Quality Unitality of triage care from current median of 43% to 80% from October 01, 2024 to April 30, 2025

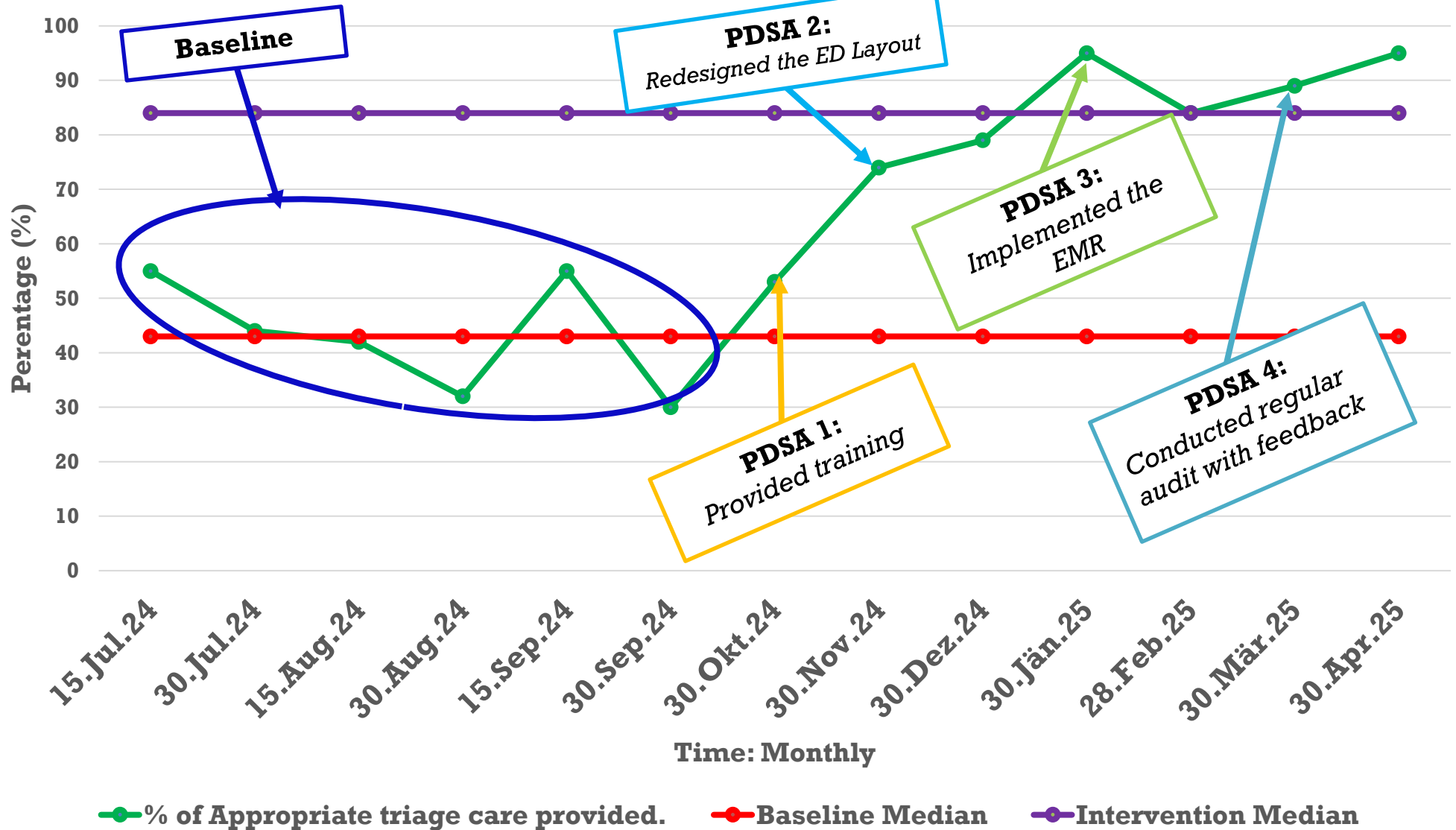


Figure 3: Run Chart with multiple PDSA showing improving an emergency triage care from 43% to >80% from October 01, 2024 to April 30, 2025

BALANCING MEASURE OUTCOMES

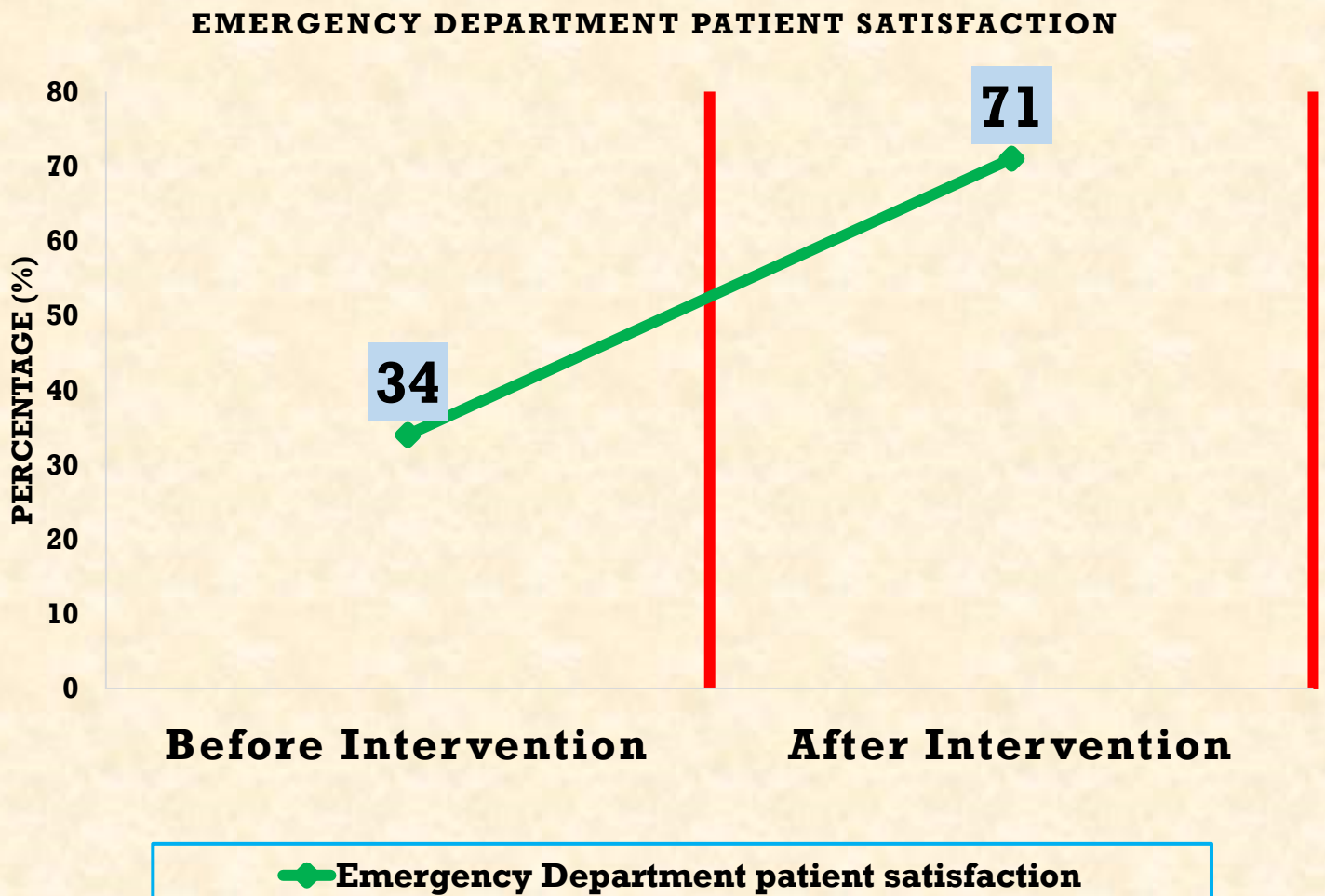


Figure 4: Shows that improving Quality of triage care resulted that improving patient's satisfaction at emergency department of Deder General Hospital, from **October 01, 2024** to **April 30, 2025**

CONCLUSION

The Quality Improvement Project at Deder General Hospital successfully improved emergency triage care compliance from **43% to 95%** by April 2025, surpassing the 80% target through structured interventions including **staff training, emergency department layout redesign, electronic triage documentation, and regular audits with feedback**. By leveraging PDSA cycles and fostering multidisciplinary collaboration, the initiative streamlined workflows, enhanced protocol adherence, and significantly boosted patient satisfaction from **34% to 71%**. Key lessons highlighted the importance of iterative learning, technology integration, and leadership engagement in overcoming systemic inefficiencies and embedding sustainable practices. This project underscores that resource-limited settings can achieve transformative healthcare improvements through low-cost, systematic strategies, offering a replicable model for enhancing emergency care quality and patient outcomes globally.

LESSON LEARNT

The **Triage care QIP** at Deder General Hospital highlighted critical insights for improving emergency care systems. **First**, structured frameworks like PDSA cycles proved indispensable for iterative testing and scaling interventions, enabling rapid adjustments and sustained progress. **Second**, multidisciplinary collaboration fostered staff ownership of protocols, ensuring consistent adherence to standardized triage practices. **Third**, integrating technology—such as the electronic documentation system—streamlined workflows, reduced errors, and enhanced accountability, even in resource-limited settings. **Finally**, leadership engagement and patient-centered approaches were pivotal: administrative support mitigated resistance to change, while prioritizing patient feedback directly improved satisfaction and care quality. These lessons underscore that strategic, low-cost interventions, coupled with cultural shifts toward teamwork and continuous learning, can transform emergency care delivery sustainably.

MESSAGES FOR OTHERS

The Deder General Hospital's Triage care QIP demonstrates that targeted, low-resource interventions such as **staff training, workflow redesign, electronic documentation, and data-driven audits** can transform emergency care, raising appropriate triage care compliance from the median of 43% to 84% while boosting patient satisfaction from **31% to 74%**. By adopting PDSA cycles and fostering multidisciplinary collaboration, healthcare teams can systematically address inefficiencies and embed standardized practices. Leadership engagement is critical to overcoming resistance and sustaining cultural shifts toward accountability and patient-centered care. This success underscores that even in resource-limited settings, prioritizing structured frameworks, technology integration, and iterative learning can achieve scalable, high-quality triage systems that save lives and enhance trust in emergency services.

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