



# **DEDER GENERAL HOSPITAL**

## ***HEALTHCARE QUALITY IMPROVEMENT PROJECT***

**QI PROJECT: REDUCING AVERAGE OUTPATIENT WAITING TIME TO CONSULTATION**

**By:** DATA QI TEAM

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February 2017E.C*

***GRADUATED QIP: REDUCING AVERAGE OPD WAITING TIME TO CONSULTATION, FEB 2017E.C***

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## ABSTRACT

### Introduction

Long average Outpatient waiting times to consultation at Deder General Hospital were identified as a significant barrier to patient satisfaction and efficient healthcare delivery. Baseline data revealed an average waiting time of **50 minutes**, far exceeding the recommended standard of **23 minutes**. Prolonged waiting times led to patient dissatisfaction, missed appointments, and delayed care.

**Objective:** The aim of this Quality Improvement Project (QIP) was to reduce average Outpatient waiting times to consultation to consultation from **50 minutes to 23 minutes** within six months, from **September 01, 2016 E.C., to February 20, 2017 E.C.**

### Methods

The QI team utilized the **Model for Improvement** and **Plan-Do-Study-Act (PDSA)** cycles to test and implement interventions. Key strategies included conducting **Focus Group Discussions (FGDs)** with stakeholders to identify bottlenecks, implementing an **Electronic Medical Record (EMR)** system to automate services, and integrating the **Medical Records Unit (MRU)** with central triage to streamline patient flow. Data were collected bi-weekly using standardized tools to monitor progress and guide adjustments.

### Results

The project successfully reduced the average outpatient waiting time from **50 minutes to 23 minutes**. The integration of MRU and central triage reduced patient processing time to **8 minutes**, and improved patient satisfaction from **53% to 88%** pre-and post-intervention respectively. The FGDs and EMR system played a crucial role in identifying inefficiencies and improving operational workflows.

### Conclusion

This QIP demonstrated the effectiveness of structured feedback, process automation, and interdepartmental collaboration in reducing average Outpatient waiting times to consultation and improving patient outcomes. The lessons learned emphasize the importance of stakeholder engagement, continuous monitoring, and sustainability in healthcare quality improvement. The project serves as a model for other healthcare facilities seeking to enhance service delivery through targeted quality improvement initiatives.

**GRADUATED QIP: REDUCING AVERAGE OPD WAITING TIME TO CONSULTATION, FEB 2017E.C**

# INTRODUCTION

## Problem Description

Waiting time is the length of time from when the patient arrival to the hospital to the time when the patient contacting the doctor at outpatient clinic. It is the time a patient waits in the outpatient department before being seen by one of the health care providers of Hospital's staff (4,5). It is a critical factor in patient satisfaction and clinical outcomes. Prolonged waiting times can lead to patient dissatisfaction, missed appointments, and delayed care.

The Institute of Medicine (IOM) recommends that, at least 90% of patients should be seen within 30 minutes of their scheduled appointment (8). This is however, not the case in Deder General hospital. In this hospital there will be long waiting period for patient to consult with doctors. So, to measure the magnitude of the problem baseline assessments were collected from **May 30, 2016E.C to August 30, 2016E.C** shows that the average waiting time to consultation is **50 minutes** which may lead to dissatisfaction of the patients and high cost of care from delayed intervention.

This QI initiative aims to identify and address root causes of long average Outpatient waiting times to consultation and implement targeted interventions to reduce the time patients spend waiting for consultation.



## **Aim Statement**

The aim of this Quality Improvement Project (QIP) is to reduce Average Outpatient Waiting Time to Consultation from 50 minutes to 20 minutes within six months, from **September 01, 2016 E.C, to February 20, 2017E.C.**

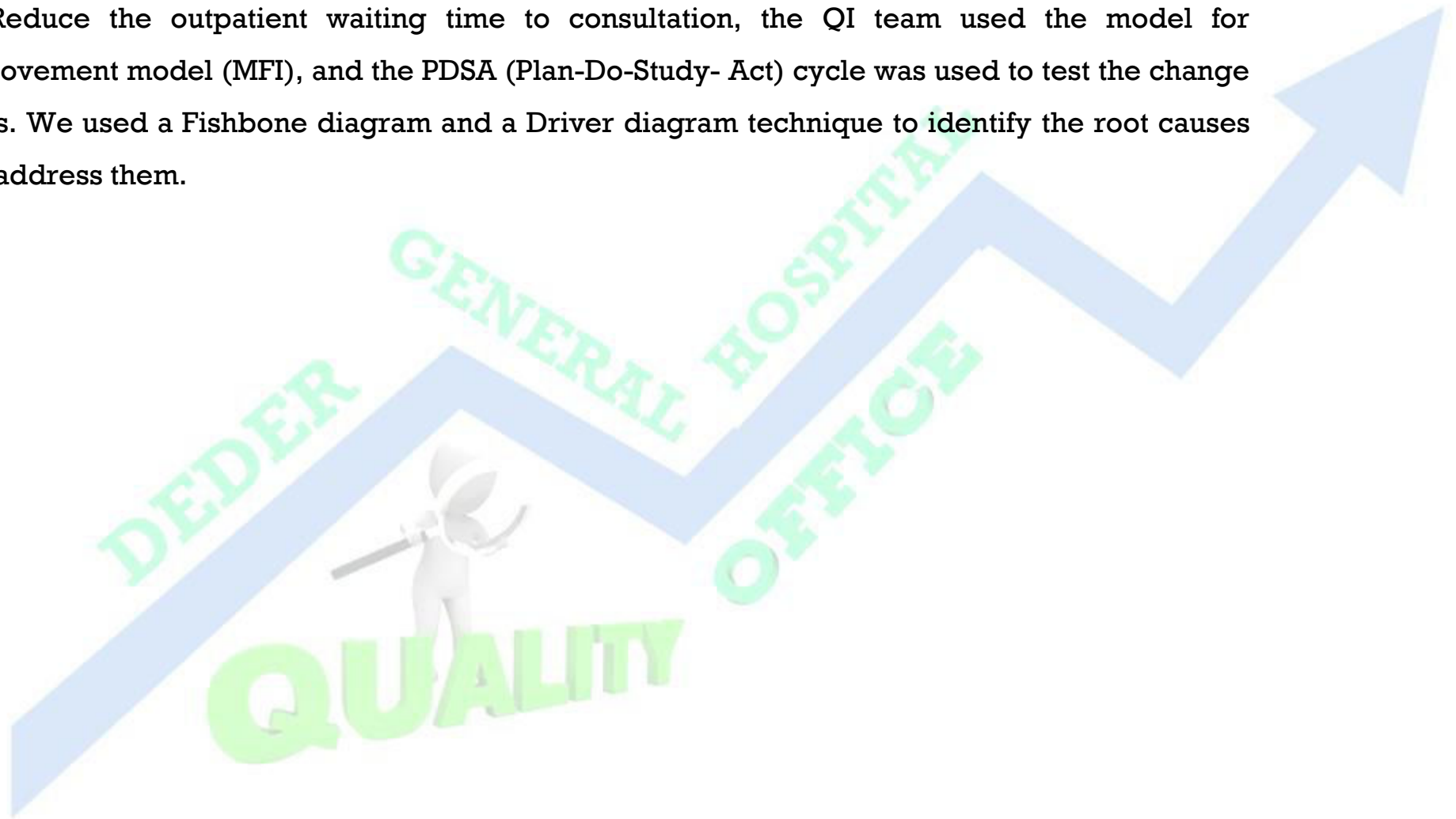
## **Context and Relevance**

The project was conducted at Deder General Hospital in Eastern Ethiopia, where long waiting times were a major concern for both patients and staff. The hospital serves a large population, and inefficient processes were leading to delays in care delivery. The QI team, comprising hospital staff and quality improvement experts, was formed to address this issue.

## METHODOLOGY

### Design:

To Reduce the outpatient waiting time to consultation, the QI team used the model for improvement model (MFI), and the PDSA (Plan-Do-Study- Act) cycle was used to test the change ideas. We used a Fishbone diagram and a Driver diagram technique to identify the root causes and address them.



# FISHBONE DIAGRAM

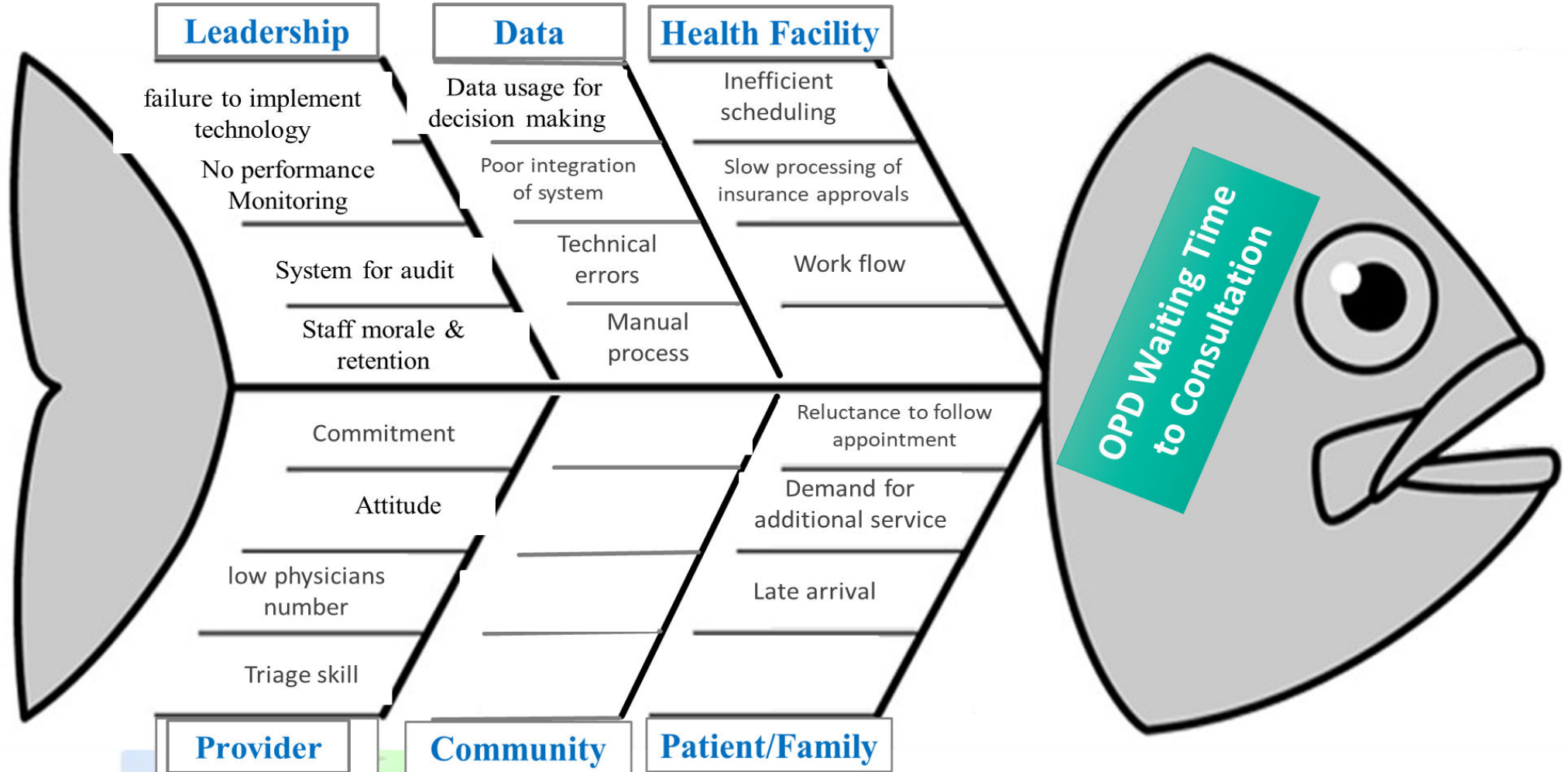


Figure 1: Fish Bone Diagram (problem: Long waiting time to consultation with doctor in Deder General hospital)



# DRIVER DIAGRAM

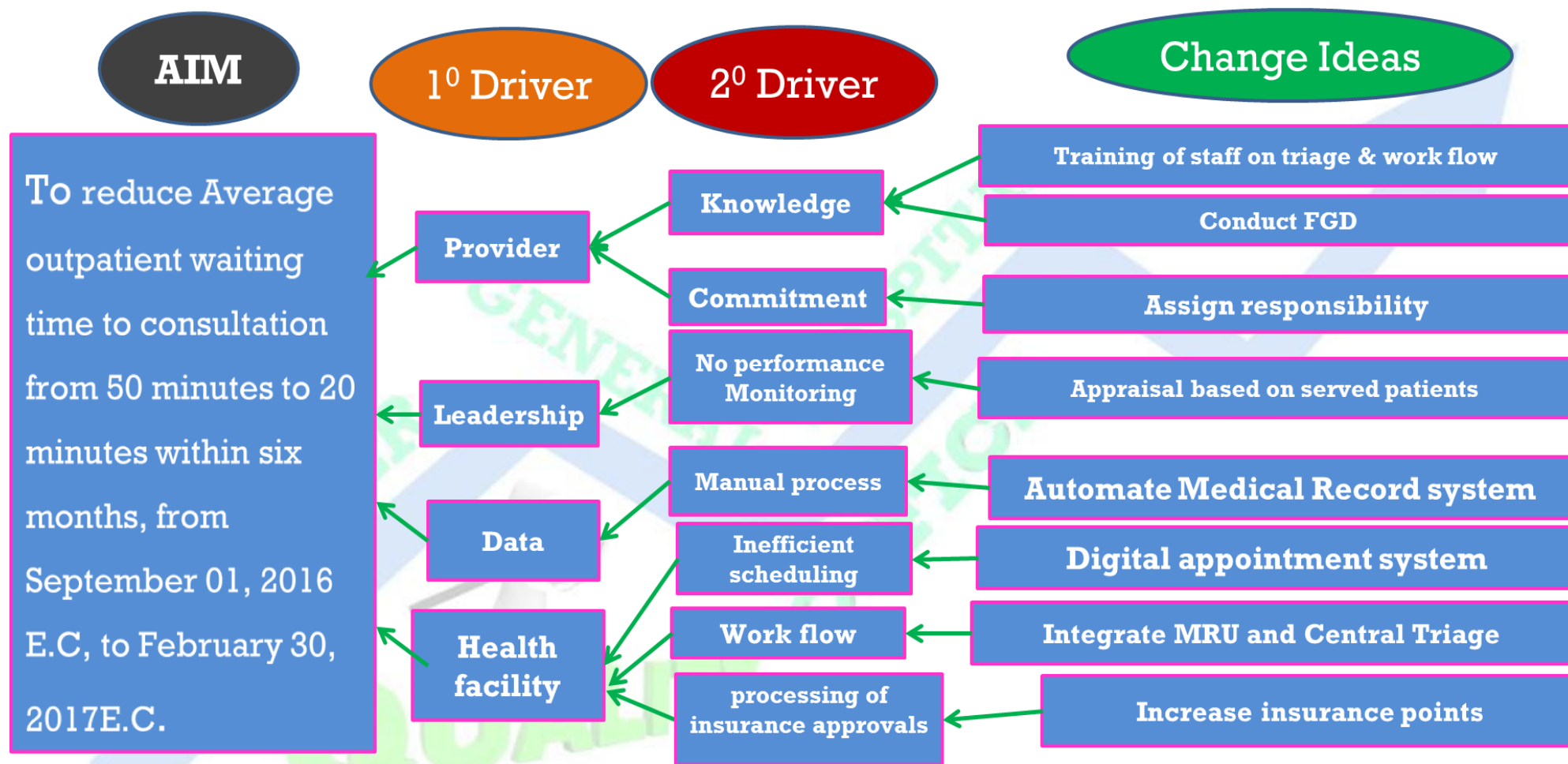


Figure 2: Driver Diagram to reduce long waiting time to consultation with doctor in Deder General hospital.

The project utilized the **Model for Improvement** and **PDSA cycles** to test and implement interventions.

Key interventions included:

1. **Focus Group Discussions (FGDs):** Structured group interviews with stakeholders to identify bottlenecks and gather feedback.
2. **Automation of Services:** Implementation of an Electronic Medical Record (EMR) system to streamline administrative and clinical processes.
3. **Integration of MRU and Central Triage:** Combining the Medical Records Unit with central triage to streamline patient flow.

The QI team conducted **three PDSA cycles** over six months, each focusing on different aspects of the intervention.

## Measurements

The QI team selected several measures to evaluate the effectiveness of the interventions:

### Outcome Measures:

- ✎ Average Outpatient waiting time to consultation (in minutes).

### Process measures:

- ✎ Number of FGD sessions conducted.
- ✎ Number of automated outpatient services
- ✎ Number of MRU & central triage integrated

### Balancing measures

- ✎ Patient satisfaction

## IMPLEMENTATIONS OF PLAN OF PDSA

### Process Measures

*Table 1: Process Measures:*

What (Change ideas)	Where	Who	When	How
Conduct Focus Group Discussions (FGDs)	OPD	Quality Improvement Team	September 01, 2017E.C to October 20, 2017E.C.	Organized and facilitated discussions with patients and staff to identify bottlenecks and gather feedback. Developed structured questionnaires and discussion guides to ensure comprehensive coverage of issues. Scheduled multiple sessions to include diverse groups of stakeholders. Analyzed feedback to pinpoint key areas for improvement.
Automate service (implement electronic medical record system)	OPD	IT Department and OPD Staff	October 21, 2017E.C to January 05, 2017E.C	Installed and configured the electronic medical record system, trained staff on its use, and migrated patient data. Conducted hands-on training sessions and provided user manuals. Established a support team to assist with troubleshooting during the transition period. Ensured data security and compliance with healthcare regulations.
Integrate MRU & central triage	OPD	Hospital adm, Triage Team, and MRU Staff	January 06, 2017E.C to February 30, 2017E.C	Combined Medical Records Unit (MRU) with central triage to streamline patient flow and reduce duplication of efforts. Redesigned the patient intake process to ensure seamless integration. Conducted joint training sessions for staff to familiarize them with new protocols. Implemented a unified tracking system to monitor patient progress from triage to consultation.

**Table 2: Process Measures Performance**

Change Idea	Indicator	Data Collection Method	Frequency of data collection	Responsible Person/Team	Target	Actual	Comments/Actions
<b>Conduct Focus Group Discussions (FGDs)</b>	Number of FGDs conducted	Attendance sheets, notes	Bi-weekly	Quality Improvement Team	4	4	All FGDs completed on schedule. Key issues identified and addressed.
<b>Automate service (implement EMR system)</b>	Number of staff trained	Training attendance records	Bi-weekly	EMR Taskforce team	25	30	All staff trained, with additional personnel included for backup.
	Percentage of patient records migrated	System audit	Bi-weekly	IT Department	100%	100%	All records successfully migrated with no data loss.
<b>Integrate MRU &amp; central triage</b>	Average patient processing time	Time tracking logs	Bi-weekly	Triage Team	10 minutes	8 minutes	Processing time reduced below target.

## Outcome Measure Performance

Table 4: Showed the average outpatient waiting time to consultation

Aim		Time: BI-weekly											
		TIME	15-Sep-17	30-Sep-17	07-Oct-17	20-Oct-17	05-Nov-17	20-Nov-17	10-Dec-17	05-Jan-17	20-Jan-17	05-Feb-17	20-Feb-17
	Numerator	Sum total of outpatient waiting time to consultation (in minutes)	805	851	529	575	529	805	529	575	506	460	414
	Denominator	Total number of surveyed patients	23	23	23	23	23	23	23	23	23	23	23
	Outcome Indicator	Average Outpatient Waiting Time consultation (Minute)	35	37	23	25	23	35	23	25	22	20	18



## Strategy for Improvement

The QI team implemented the interventions in three PDSA cycles:

### PDSA Cycle 1:

PDSA Cycle 1 was tested from **September 01, 2017E.C** to **October 20, 2017E.C** and focused on addressing the long average Outpatient waiting times to consultation at Deder General Hospital by implementing **Focus Group Discussions (FGDs)** as the primary intervention. The QI team organized structured group interviews with key stakeholders, including physicians, nurses, and administrative staff, to identify bottlenecks and gather insights into the causes of delays in the outpatient process. These FGDs aimed to uncover issues such as inefficient patient flow, lack of coordination between departments, and other systemic barriers contributing to prolonged waiting times. Feedback from these discussions was used to pinpoint areas for improvement and develop targeted solutions.

By the end of PDSA 1, the FGDs had successfully identified several critical issues, leading to actionable changes in the outpatient process. A **total of 4 FGD** sessions were conducted, involving diverse groups of stakeholders to ensure comprehensive feedback. The insights gained from these discussions helped the team prioritize interventions for subsequent PDSA cycles. Although the primary focus was on gathering qualitative data, the average outpatient waiting time decreased from **50 minutes to 30 minutes**, demonstrating the value of stakeholder engagement in identifying and addressing systemic inefficiencies. This initial success set the stage for further improvements in the project (**Figure 3**).

## PDSA Cycle 2:

PDSA Cycle 2 was tested from **October 21, 2017E.C to January 05, 2017E.C** and focused on reinforcing the interventions from PDSA 1 and introducing additional changes to further streamline patient flow and reduce average Outpatient waiting times to consultation. A key intervention in this cycle was the **automation of services** through the **full implementation and optimization of the Electronic Medical Record (EMR) system**. The EMR system was designed to reduce manual tasks, improve data accuracy, and enhance overall efficiency in patient management. Staff training continued to ensure all personnel were proficient in using the system, and additional features were rolled out to support seamless patient tracking and coordination between departments.

The results of PDSA 2 showed significant progress. The average outpatient waiting time decreased from PDSA cycle of **30 minutes to 26.5 minutes**, and the EMR system played a crucial role in achieving this reduction. By automating administrative and clinical processes, the hospital was able to minimize delays and improve patient flow. Additionally, the integration of the EMR system with other hospital processes, such as triage, further enhanced efficiency. The success of this intervention demonstrated the importance of technology in healthcare quality improvement and set the stage for further refinements in PDSA 3 (**Figure 3**).

### PDSA Cycle 3:

PDSA Cycle 3 was tested from **January 06, 2017 E.C. to February 20, 2017 E.C** and focused on consolidating the improvements made in previous cycles and achieving the final target of reducing average Outpatient waiting times to consultation to **23 minutes**. The primary intervention during this cycle was the integration of the Medical Records Unit (MRU) with central triage. This integration aimed to streamline patient flow by eliminating redundancies and improving coordination between departments. A unified tracking system was implemented to monitor patient progress from triage to consultation, ensuring a seamless process. Joint training sessions were conducted for MRU and triage staff to familiarize them with the new protocols, and the patient intake process was redesigned to reduce processing times. Continuous monitoring and regular feedback sessions were also held to ensure the sustainability of the improvements.

By the end of PDSA 3, the average outpatient waiting time decreased from PDSA cycle 2 of **27 minutes to 20 minutes**, surpassing the target. The integration of MRU and central triage reduced the average patient processing time from **10 minutes to 8 minutes**. These results demonstrated the effectiveness of process optimization and interdepartmental collaboration in achieving significant improvements in healthcare service delivery. The success of PDSA 3 highlighted the importance of continuous monitoring and stakeholder engagement in sustaining long-term improvements in patient care (**Figure 3**).

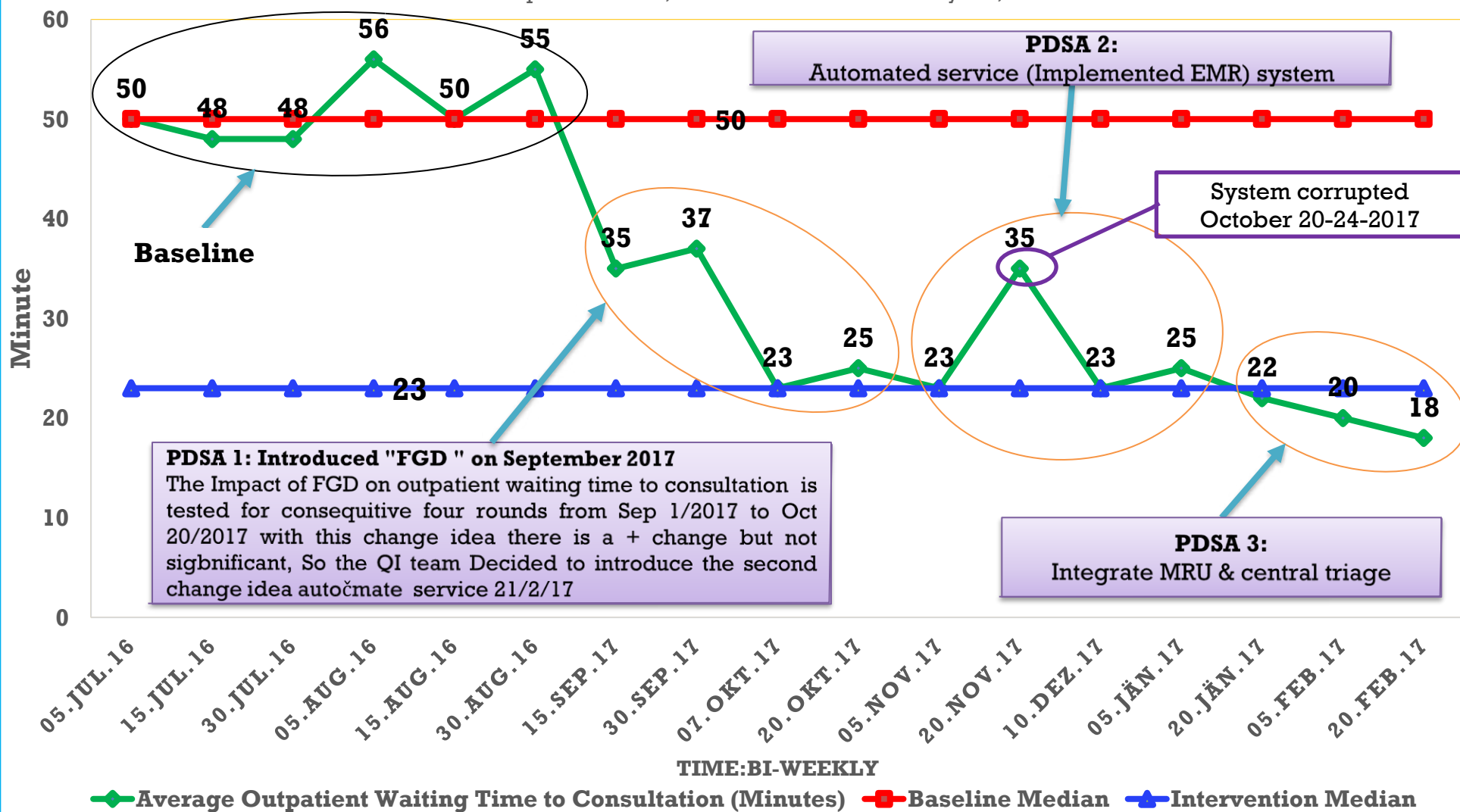
## RESULTS

The Quality Improvement Project (QIP) at Deder General Hospital successfully reduced the average outpatient waiting time to consultation from **50 minutes** to **23 minutes**, and achieved the target within six months (**Figure 3**). This achievement was driven by a series of structured interventions, including **Focus Group Discussions (FGDs)** to identify root causes, the implementation of an **Electronic Medical Record (EMR)** system to automate services, and the integration of the **Medical Records Unit (MRU)** with central triage to streamline patient flow. A Positive consequence of implementing the quality improvement project was not only reduced waiting times but also improved OPD patient satisfaction from **53% to 84% (Figure 4)**.

The project demonstrated the effectiveness of stakeholder engagement, technological innovation, and interdepartmental collaboration in achieving sustainable improvements in healthcare service delivery. The success of this QIP serves as a model for other healthcare facilities seeking to enhance patient care through targeted quality improvement initiatives.

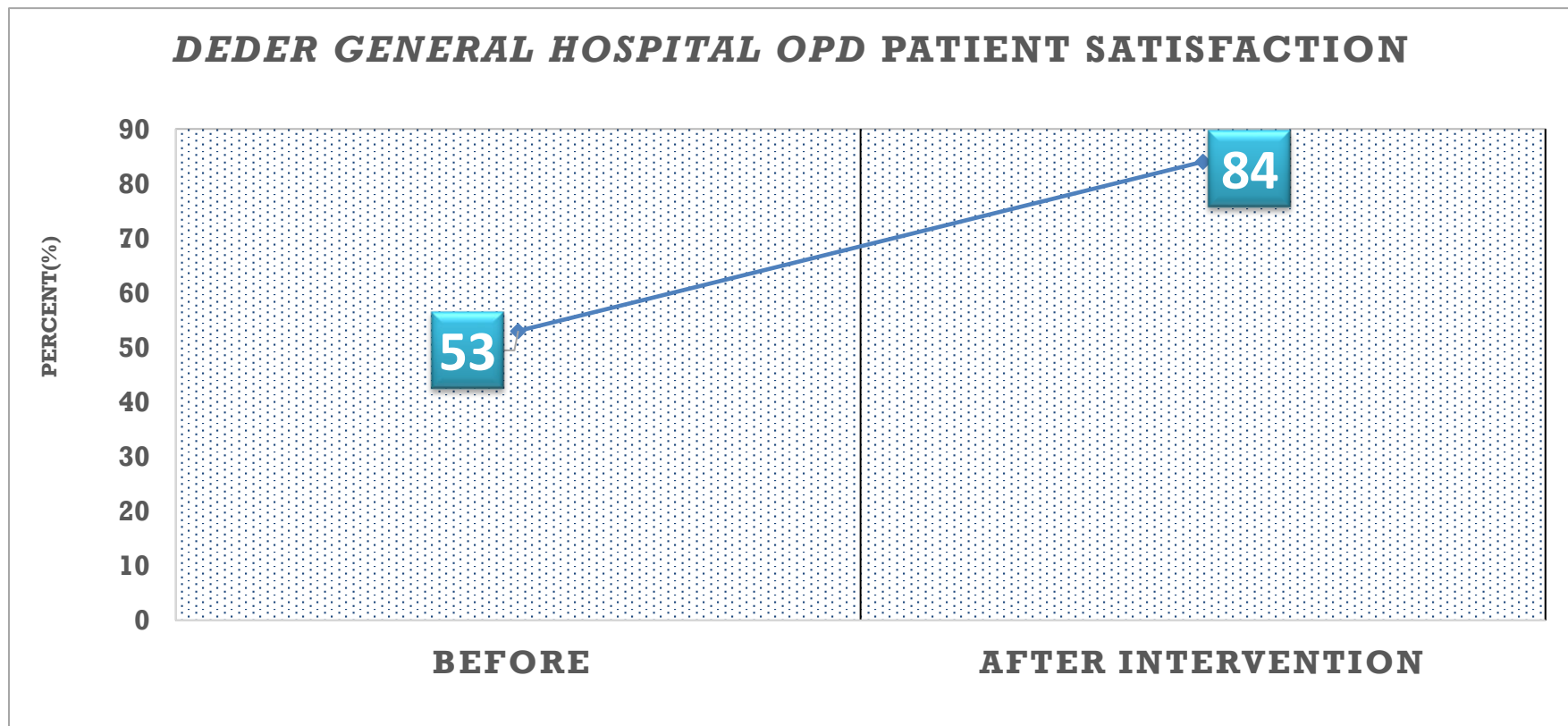
## RUNCHART WITH MULTIPLE PDSA CYCLE

QIP: TO REDUCE OUTPATIENT WAITING TIME TO CONSULTATION FROM 50 MINUTES TO 23 MINUTES September 02, 2017 E.C To February 20, 2017 E.C.



**Figure 3: Run chart with multiple PDSA cycles to Reduce average outpatient waiting time to consultation from 50 minutes to 23 minutes from September 02, 2017 E.C. to February 20, 2017 E.C**





**Figure 4:** shows that reduced average outpatient waiting time to consultation resulted that improved patient's satisfaction in Outpatient departments of Deder General Hospital, February 20, 2017E.C

## DISCUSSION

The Quality Improvement Project (QIP) at Deder General Hospital successfully achieved its aim of reducing average Outpatient waiting times to consultation, demonstrating the effectiveness of structured interventions in addressing systemic inefficiencies. The project reduced the average waiting time to consultation from **50 minutes to 23 minutes**, and significantly improved patient satisfaction from **53% to 84%**. Key interventions, such as **Focus Group Discussions (FGDs)**, the implementation of an **Electronic Medical Record (EMR) system**, and the **integration of the Medical Records Unit (MRU) with central triage**, played pivotal roles in streamlining patient flow and enhancing operational efficiency. The use of the **Plan-Do-Study-Act (PDSA)** methodology allowed the team to test, refine, and scale interventions systematically, ensuring continuous improvement. The success of this project highlights the importance of stakeholder engagement, technological innovation, and interdepartmental collaboration in driving sustainable healthcare improvements.

However, the project also faced challenges, including initial resistance to change from staff and the need for ongoing training to ensure the effective use of the EMR system. These challenges were addressed through strong leadership, clear communication, and a commitment to fostering a culture of continuous improvement. The lessons learned from this QIP underscore the value of data-driven decision-making, regular feedback sessions, and the importance of balancing technological advancements with staff readiness. Moving forward, the hospital can build on these successes by scaling the intervention to other departments and ensuring long-term sustainability through continuous monitoring and staff engagement. This project serves as a valuable example of how targeted quality improvement initiatives can enhance healthcare delivery and patient outcomes.

## LESSONS LEARNED

**This Quality Improvement Project highlighted several key lessons for successful healthcare improvement initiatives.**

- 👉 **First**, stakeholder engagement through Focus Group Discussions (FGDs) was critical in identifying root causes and designing effective interventions.
- 👉 **Second**, the implementation of technology, such as the Electronic Medical Record (EMR) system, significantly enhanced efficiency and reduced manual errors.
- 👉 **Third**, interdepartmental collaboration, particularly the integration of the Medical Records Unit (MRU) with central triage, streamlined patient flow and improved coordination. Additionally, continuous monitoring and regular feedback ensured that improvements were sustained over time.
- 👉 **Finally**, effective change management, including staff training and clear communication, was essential to overcoming resistance and ensuring the successful adoption of new processes. These lessons underscore the importance of a holistic, data-driven, and collaborative approach to achieving lasting improvements in healthcare delivery.

## CONCLUSION

This Quality Improvement Project at Deder General Hospital successfully reduced average Outpatient waiting times to consultation and improved patient outcomes through a combination of stakeholder engagement, technological innovation, and process optimization. The project not only achieved its aim of reducing waiting times but also demonstrated the broader impact of quality improvement initiatives on patient satisfaction, disease management, and healthcare efficiency. The lessons learned from this project provide a valuable framework for other healthcare facilities seeking to implement similar improvements. By fostering a culture of continuous improvement, leveraging technology, and prioritizing patient-centered care, healthcare organizations can enhance service delivery and achieve better health outcomes for their communities.

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