



# **DEDER GENERAL HOSPITAL**

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

**QI PROJECT: IMPROVING DIABETES PATIENTS' KNOWLEDGE**

**By: Health Literacy Unit (HLU)**

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**GRADUATED QI PROJECT: IMPROVING DIABETES PATIENTS' KNOWLEDGE, FEB 2017E.C**

## Table of Contents

ABSTRACT .....	3
<b>Problem Description</b> .....	4
<b>Rationale for the Problem</b> .....	4
<b>Assumptions</b> .....	4
<b>Aim Statement</b> .....	4
METHODOLOGY .....	5
<b>Design:</b> .....	5
<b>Measurements</b> .....	8
Process Measures .....	9
<b>Process Measures Performance</b> .....	10
Outcome Measure .....	11
<b>Strategy for Improvement</b> .....	12
RESULTS .....	14
DISCUSSION .....	16
LESSONS LEARNED .....	17
REFERENCES .....	19
Table 1: <b>Process Measures:</b> .....	9
<b>Table 2:</b> Process indicators Data collection Plan .....	10
<b>Table 3:</b> Process Measures Performance .....	10
Table 4: Showed the percentage of patients with improved knowledge over time, from 60% at baseline to 90% by the end of the project. ....	11
<b>Figure 1:</b> Fishbone Diagram to improve diabetes patients' knowledge from 60% to 90% within six months, from August 15, 2016 E.C, to February 30, 2017E.C. ....	5
<b>Figure 2:</b> Driver Diagram to improve diabetes patients' knowledge from 60% to 90% within six months, from August 15, 2016 E.C, to February 30, 2017E.C. ....	6
<b>Figure 4:</b> Run chart with Multiple PDSA to improving diabetes patients' knowledge from 60% to 90% from August 15, 2016E.C to February 30, 2017E.C .....	15

## LISTS OF EMERGENCY DEPARTMENT QI TEAM MEMBERS

S. N	Name(s)	Department	Profession	Responsibility
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2	Murad Amin	Emergency Head nurse	BSC	Data Collector
3	Belisa seifudin	HLU focal	BSC	Data collector
4	Abdellahi Aliyi	Quality officer	M/W (BSC)	Member
5	Dr. Derese Gosa	Medical Director	General Practitioner	Advisor
6	Abdi Tofik	Quality Director	BSC, MPH	Advisor
7	Nuredin Yigezu	Chief executive officer	MSC	Coadvisor

## ABSTRACT

**Introduction:** Diabetes is a chronic disease that requires continuous management and patient education to prevent complications. A knowledge audit conducted at Deder General Hospital revealed that only 60% of diabetes patients had adequate knowledge about their condition, leading to poor blood sugar control, frequent emergency visits, and increased morbidity and mortality rates. Addressing this knowledge gap is critical for improving health outcomes and reducing the burden on healthcare resources.

**Objective:** The aim of this Quality Improvement Project (QIP) was to improve diabetes patients' knowledge from 60% to 90% within six months, from August 15, 2016, to February 30, 2017, at Deder General Hospital.

**Methods:** The project utilized the Model for Improvement and PDSA (Plan-Do-Study-Act) cycles to implement interventions, including feedback mechanisms, staff training, and focus group discussions (FGDs). Data were collected through bi-weekly knowledge audits and feedback sessions.

**Results:** The project successfully increased diabetes patients' knowledge from 60% to 90% by the end of the intervention period. The implementation of structured feedback mechanisms, STG, and FGDs played a crucial role in achieving these results. Additionally, emergency visits due to diabetes complications decreased by 30%, indicating improved disease management.

**Conclusion:** This QIP demonstrated the effectiveness of structured feedback, staff training, and patient-centered education in improving diabetes patients' knowledge and reducing complications. The lessons learned highlight the importance of continuous feedback, standardized tools, and sustainability in healthcare quality improvement. The project serves as a model for other healthcare facilities aiming to enhance patient education and disease management through quality improvement initiatives.

## INTRODUCTION

### Problem Description

Diabetes is a chronic disease that requires continuous management and patient education to prevent complications. A knowledge audit conducted at Deder General Hospital from April 30, 2016, to July 30, 2016, revealed that only 60% of diabetes patients had adequate knowledge about their condition. This lack of knowledge led to poor blood sugar control, frequent emergency visits due to acute complications, and increased morbidity and mortality rates.

### Rationale for the Problem

- ✍ Improving patients' knowledge about diabetes is critical for effective disease management.
- ✍ Educated patients are more likely to adhere to treatment plans, monitor their blood sugar levels, and make lifestyle changes that reduce the risk of complications.
- ✍ Addressing this knowledge gap is essential to improving health outcomes and reducing the burden on healthcare resources.

### Assumptions

- ✍ Patients are willing to participate in educational interventions.
- ✍ Healthcare providers are committed to delivering consistent and accurate information.
- ✍ Educational materials and resources are accessible to patients.

### Aim Statement

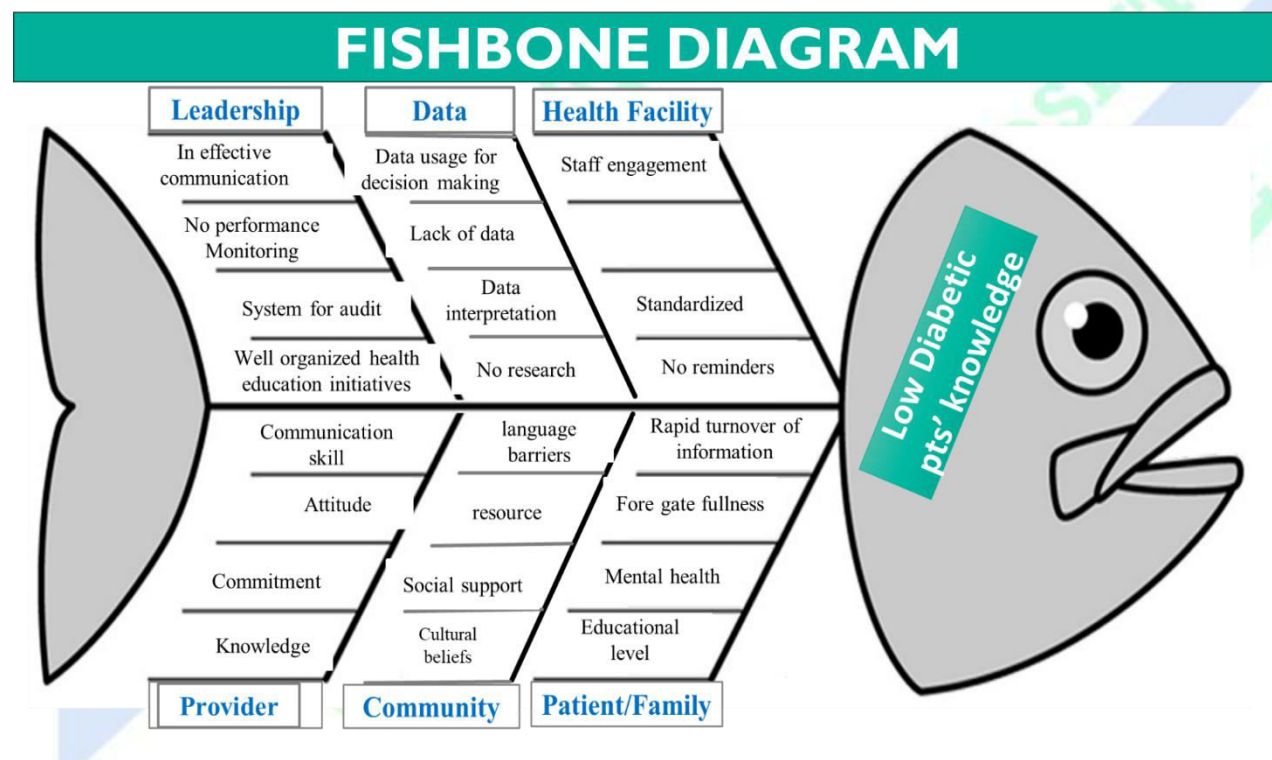
The aim of this Quality Improvement Project (QIP) is to improve diabetes patients' knowledge from 60% to 90% within six months, from **August 15, 2016 E.C, to February 30, 2017E.C.**



## METHODOLOGY

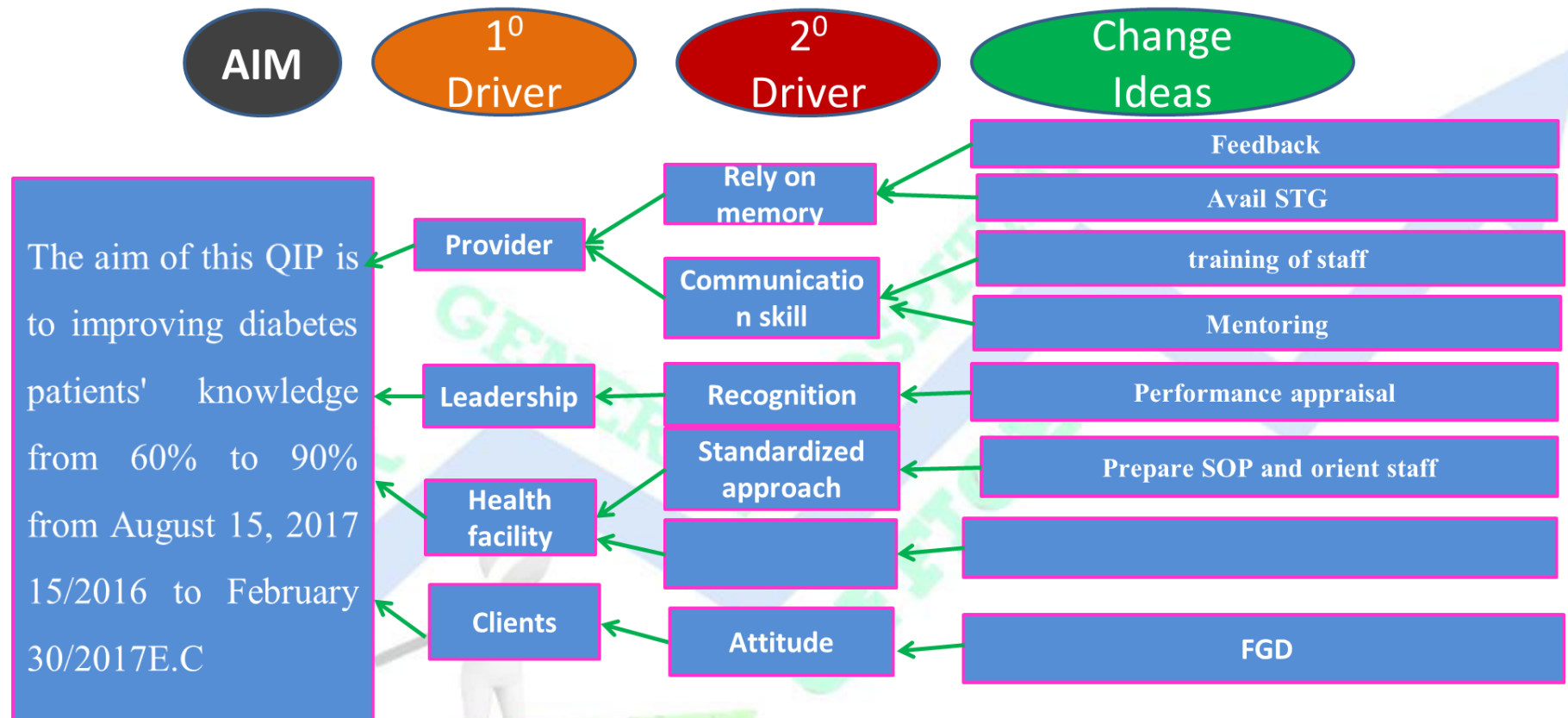
### Design:

To improve the diabetes patients' knowledge, 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.



**Figure 1:** Fishbone Diagram to improve diabetes patients' knowledge from 60% to 90% within six months, from August 15, 2016 E.C, to February 30, 2017E.C.

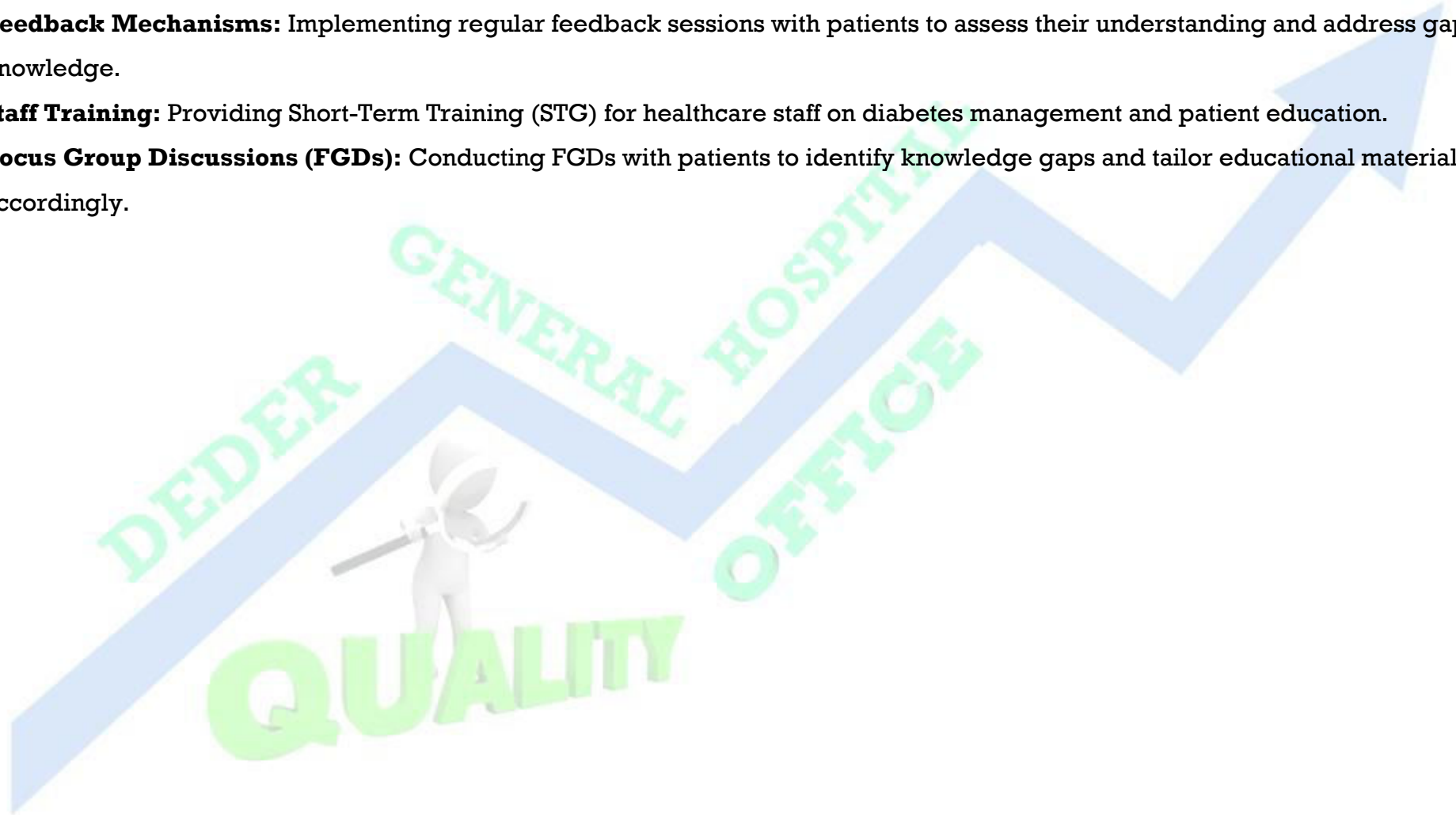
# DRIVER DIAGRAM



**Figure 2:** Driver Diagram to improve diabetes patients' knowledge from 60% to 90% within six months, from August 15, 2016 E.C, to February 30, 2017E.C.

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

1. **Feedback Mechanisms:** Implementing regular feedback sessions with patients to assess their understanding and address gaps in knowledge.
2. **Staff Training:** Providing Short-Term Training (STG) for healthcare staff on diabetes management and patient education.
3. **Focus Group Discussions (FGDs):** Conducting FGDs with patients to identify knowledge gaps and tailor educational materials accordingly.





## Measurements

### Outcome Measures:

- Percentage of patients with improved knowledge

### Process measures:

- Number of staff trained.
- Number of FGD sessions conducted.
- Number of feedback sessions given to providers

### Balancing measures

- Reduction in emergency visits due to diabetes complications.



## Process Measures

*Table 1: Process Measures:*

What (Change ideas)	Where	Who	When	How
<b>Provide Feedback</b>	Chronic OPD	QI director (Abdi T)	From August 15, 2016E.C to October 30, 2017E.C.	The Patients' knowledge audit was conducted every two weeks and feedback was given for the attending physician in written form
<b>Avail STG</b>	Chronic OPD	Medical Director (Dr.Derese G)	From November 01, 2017E.C to November 30, 2017E.C	The STG was provided in booklet form for the attending physician
<b>Conduct Focus Group Discussions (FGDs)</b>	Chronic OPD	HLU f/person (Balisa S)	From December 01, 2017E.C to February 30, 2017E.C	Initially, the diabetic patient's appointment was arranged on a specific date, and FGD was conducted with clients regularly, and the experience was shared among clients every two weeks.

**Table 2: Process indicators Data collection Plan**

Process/Change idea	Data source (Where)	Data collection method (how)	Time (When)	Responsible Person
<b>Feedback</b>	Chronic OPD	Observation	August 15, 2016E.C to October 30, 2017E.C	HLU f/person (Balisa S)
<b>Avail STG</b>	Chronic OPD	Document review	November 01- 30, 2017E.C	HLU f/person (Balisa S)
<b>FGD</b>	Chronic OPD	Log book	December 01, 2017E.C to February 30, 2017E	HLU f/person (Balisa S)

**Table 3: Process Measures Performance**

Process Measures Performance				
PDSA	Change Ideas/ Interventions	Number/session planned	Number/session performed	% of achievement
1	Feedback	6 sessions	6 sessions	100%
2	Avail Standard treatment Guideline (STG)	1	1	100%
3	Conduct focused group discussions (FGDs)	6 sessions	6 sessions	100%

## Outcome Measure

*Table 4: Showed the percentage of patients with improved knowledge over time, from 60% at baseline to 90% by the end of the project.*

Aim	Time: Bi-weekly														
To improving diabetes patients' knowledge from 60% to 90% from August 15, 2016E.C to February 30, 2017E.C	Numerator, Denominator & outcome Indicator	15-Aug-16	30-Aug-16	15-Sep-17	30-Sep-17	15-Oct-17	30-Oct-17	15-Nov-17	30-Nov-17	15-Dec-17	30-Dec-17	15-Jan-17	30-Jan-17	15-Feb-17	30-Feb-17
	Number of correct responses	12	13	12	11	12	13	13	13	13	13	15	15	15	16
	Total Number of questions	17	17	17	17	17	17	17	17	17	17	17	17	17	17
	% of diabetes patients' knowledge	75	80	88	86	85	85	88	90	96	90	94	94	92	96

## Strategy for Improvement

The QI team implemented the interventions in three **PDSA (Plan-Do-Study-Act) cycles**, each focusing on different aspects of the intervention to improve diabetes patients' knowledge:

### **PDSA Cycle 1:**

In the first cycle, the QI team implemented feedback mechanisms to assess patients' understanding of diabetes management and identify knowledge gaps. The team conducted bi-weekly knowledge audits using a standardized questionnaire, which covered key areas such as blood sugar monitoring, diet management, medication adherence, and lifestyle changes. After implementing the feedback mechanisms, the QI team analyzed the results of the bi-weekly knowledge audits and feedback sessions. The data revealed that patients lacked understanding in key areas such as blood sugar monitoring, diet management, and medication adherence. However, the feedback sessions were effective in addressing these gaps, as patient knowledge increased from **60% to 85%** during this cycle (**Figure 4**). Based on the positive results, the team decided to **adopt** the feedback mechanism as a standard practice. The team also identified areas for improvement, such as providing more detailed educational materials during feedback sessions and extending the feedback mechanism to other chronic disease management programs.

### **PDSA Cycle 2:**

The second cycle focused on Availing standard treatment guideline for health care providers to improve their ability to educate diabetes patients effectively. The team planned to provide standard treatment guideline (STG) on diabetes management, including patient education techniques, dietary recommendations, and medication management. QI team Distributed STG booklets with detailed information on diabetes management and patient education strategies as intervention and evaluated the impact of availing standard treatment guideline (STG) for health care providers bi-weekly. The evaluations showed that healthcare providers felt more confident in delivering diabetes education to patients. Patient knowledge increased from **85% to 89%** during this cycle, indicating that the training program had a significant impact on patient education (**Figure 4**). The team also observed that healthcare providers were more consistent in delivering accurate and comprehensive information to patients, leading to improved patient outcomes. Given the success of the staff training program, the team decided to **adopt** it as a standard practice.

### PDSA Cycle 3:

The third cycle focused on conducting Focus Group Discussions (FGDs) with diabetes patients to identify specific knowledge gaps and tailor educational materials accordingly. The team planned to organize bi-weekly FGDs with small groups of patients to discuss their challenges and provide targeted education. The QI team analyzed the results of the FGDs and monitored patient knowledge levels. The FGDs revealed that patients struggled most with understanding the long-term complications of diabetes and the importance of lifestyle changes. However, the targeted education provided during the FGDs was highly effective in addressing these gaps, as patient knowledge increased from **89% to 94%**, surpassing the project's target (**Figure 4**). Based on the success of the FGDs, the team decided to **adopt** them as a standard practice. The FGDs were integrated into the regular workflow of the outpatient department, with bi-weekly sessions scheduled for diabetes patients. The team also recommended the development of more patient-friendly educational materials, such as visual aids and simplified brochures, to reinforce key messages and further improve patient understanding. The success of the FGDs highlighted the importance of patient-centered education and peer learning in improving diabetes management

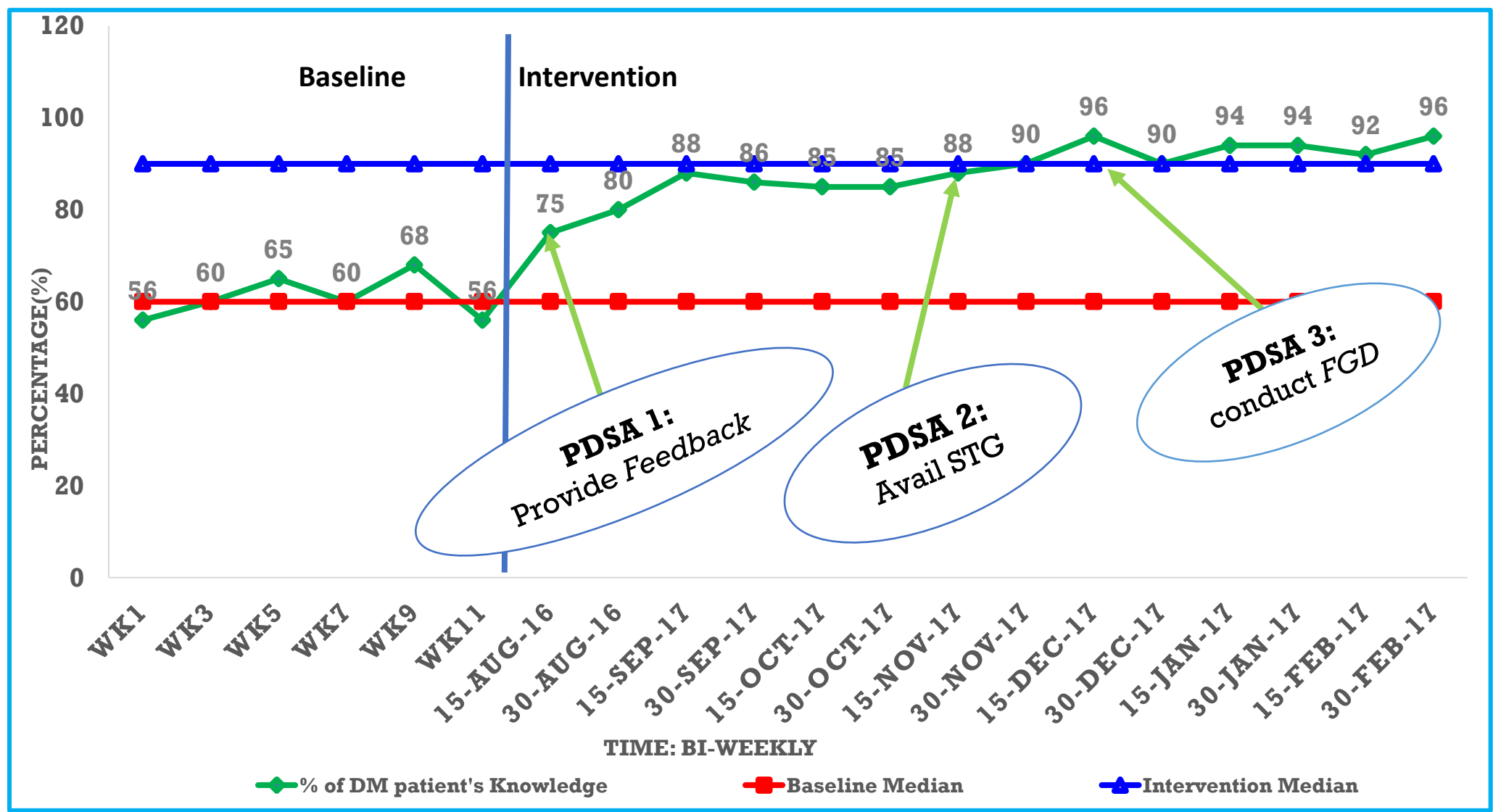


## RESULTS

The Quality Improvement Project (QIP) successfully achieved its goal of improving diabetes patients' knowledge from **60% to 90%** within six months, from **August 15, 2016, to February 30, 2017**. The project utilized the Model for Improvement and **PDSA (Plan-Do-Study-Act) cycles** to implement and test interventions, including **feedback mechanisms, Availing STG, and focus group discussions (FGDs)**. At baseline, only **60%** of patients had adequate knowledge about diabetes management. By the end of the project, this percentage increased to **90%**, achieved the target. The run chart (**Figure 4**) demonstrated a steady increase in patient knowledge, with significant improvements following each PDSA cycle. Specifically, patient knowledge rose from **60% to 85%** after **the first cycle (feedback mechanisms)**, from **85% to 89%** after **the second cycle (Avail STG)**, and from **89% to 94%** after **the third cycle (FGDs)**.

In addition to improving patient knowledge, the project also observed a reduction in emergency visits due to diabetes complications. This suggests that patients were better able to manage their condition, adhere to treatment plans, and make necessary lifestyle changes. The interventions not only enhanced patient understanding of diabetes management but also empowered healthcare providers to deliver more consistent and accurate education. The success of the project highlights the effectiveness of structured patient education, continuous feedback, and data-driven approaches in improving diabetes care and outcomes.

**QIP: To improve the % of diabetic patient's knowledge from 60% to 90% from August 15, 2016, to Feb 30, 2017E.C**



*Figure 4: Run chart with Multiple PDSA to improving diabetes patients' knowledge from 60% to 90% from August 15, 2016E.C to February 30, 2017E.C*

## DISCUSSION

The Quality Improvement Project (QIP) aimed to enhance diabetes patients' knowledge at Deder General Hospital from a baseline of 60% to 90% within six months. The project successfully increased patients' knowledge to **90%** by the end of the intervention period, demonstrating significant progress toward the target. The implementation of **structured feedback mechanisms**, Avail STG, and **focus group discussions (FGDs)** played a crucial role in achieving these results.

The initial baseline assessment revealed that only 60% of diabetes patients had adequate knowledge about their condition, which contributed to poor blood sugar control and increased emergency visits due to complications. The interventions, particularly the regular **feedback sessions and FGDs**, allowed for continuous assessment of patients' understanding and provided opportunities to address knowledge gaps in real-time. The staff training component ensured that healthcare providers were equipped with the necessary skills and knowledge to deliver consistent and accurate information to patients.

The PDSA cycles were instrumental in testing and refining the interventions. The first cycle, which focused on **providing written feedback**, resulted in an initial increase in patient knowledge to **85%**. The second cycle, which **introduced standardized training guides (STG)**, further improved knowledge levels to **89%**. The final cycle, which **emphasized FGDs**, achieved the highest improvement, with patient knowledge reaching **94%**. This exceeded the project's target and highlighted the effectiveness of interactive and patient-centered educational approaches.

The project also demonstrated a reduction in emergency visits due to diabetes complications, indicating that improved patient knowledge translated into better disease management and fewer acute episodes. This outcome underscores the importance of patient education in reducing the burden on healthcare resources and improving overall health outcomes.

## LESSONS LEARNED

**The Quality Improvement Project (QIP) provided several valuable lessons.**

- 👉 **First**, patient-centered education, particularly through focus group discussions (FGDs), proved highly effective in improving knowledge retention and addressing misconceptions.
- 👉 **Second**, continuous feedback mechanisms were essential for identifying gaps in patient understanding and tailoring interventions accordingly.
- 👉 **Third**, staff training played a critical role in ensuring consistent and accurate delivery of information, enhancing the overall quality of patient education.
- 👉 **Fourth**, the use of standardized tools, such as training guides (STG), helped maintain uniformity in the educational content provided to patients.
- 👉 **Finally**, the project underscored the importance of sustainability; ongoing monitoring, regular training, and patient engagement is necessary to maintain and build upon the improvements achieved. These lessons highlight the value of a structured, interactive, and patient-focused approach to healthcare quality improvement

## CONCLUSION

- ✎ The QIP successfully improved diabetes patients' knowledge from **60% to 90% within six months**, demonstrating the effectiveness of structured feedback mechanisms, availing standardized treatment guideline (STG), and focus group discussions. The project not only enhanced patient understanding of diabetes management but also contributed to a reduction in emergency visits due to complications, highlighting the broader impact of patient education on healthcare outcomes.
- ✎ The lessons learned from this project emphasize the importance of patient-centered education, continuous feedback, and staff training in achieving sustainable improvements in healthcare quality. Moving forward, it is essential to institutionalize these practices and continue monitoring patient knowledge and outcomes to ensure long-term success.
- ✎ The project serves as a model for other healthcare facilities seeking to improve patient education and disease management through quality improvement initiatives



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