

**ADDIS ABABA UNIVERSITY**  
**COLLEGE OF BUSINESS AND ECONOMICS**  
**SCHOOL OF COMMERCE**  
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**ASSESSMENT OF IMPLEMENTATION OF CONTINUOUS  
QUALITY IMPROVEMENT PROJECTS IMPLEMENTATION  
AND ASSOCIATED FACTORS IN PUBLIC HOSPITALS OF  
SIDAMA REGION, SOUTHERN ETHIOPIA**

**PROJECT WORK FOR THE PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR MASTER OF ARTS IN PROJECT  
MANAGEMENT (MA PM)**

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**Addis Ababa**

## **DECLARATION**

I, Abdu Abera Yimer, certify that this thesis is my original work, which I completed under the supervision of Dr Dakito Alemu. All sources of information utilized in the thesis have been properly credited. I further affirm that the thesis has not been submitted to any other higher learning institution, in part or in whole, with the intention of acquiring a degree.

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## LETTER OF CERTIFICATE

This is to confirm that Abdu Abera’s final project work, “ASSESSMENT OF IMPLEMENTATION OF CONTINUOUS QUALITY IMPROVEMENT PROJECTS IMPLEMENTATION AND ASSOCIATED FACTORS IN PUBLIC HOSPITALS OF SIDAMA REGION, SOUTHERN ETHIOPIA” had been completed and presented in partial fulfillment of the Master of Arts in Project Management degree requirement that conforms with university requirements and fulfills acceptable criteria in terms of originality and quality.

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Chair of Department

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## **Acronyms**

CQI	Continuous Quality improvement
EBC	Evidence Based Care
IHI	Institute for health care improvement
IOM	Institute of Medicine
KPI	Key Performance Indicators
MOH	Ministry of health
MBNQAC	Malcolm Bridge national quality award criteria
MNH	Maternal and newborn health
MSD	Medical Services Directorate
NIST	National Institute of Standards and Technology
NHQSS	National Healthcare Quality Strategy
NQS	National Health Care Quality Strategy
PDSA	Plan-Do-Study-Act cycle
PHCU	Primary Healthcare unit
QI	Quality improvement
RHB	Regional health bureaus
SMT	Senior Management team
Sub-QIT	Sub Quality improvement team
WHO	World Health Organization
ZHD	Zonal Health Department

## **Abstract**

*Continuous Quality Improvement (CQI) is a process of creating an environment in which management and staffs strive to create constantly improving quality. The objective of this study was to identify factors affecting the implementation of continuous quality improvement projects in Public Hospitals in Sidama region, Southern Ethiopia. Cross-sectional study was carried out from April to May 2022, in 10 Public Hospitals across the region. After data collection, the data was coded, entered, and cleaned and analyzed on SPSS Version 21. Binary logistic regression analysis was computed, with the final model interpreted using adjusted odd ratio with 95% confidence interval and  $p\text{-value} < 0.05$  to measure factors for Continuous Quality Improvement project implementation. A total of 120 conveniently selected respondents were participated in the study. Majority of participants were received quality improvement related trainings. Quality improvement related training were more likely implemented Quality improvement as compared to non-trained. Participants who had awareness about Quality improvement was more likely implemented Quality improvement as compared to their counter parts. Hospital leaders who used data to drive decision making were more likely to implement CQI. Staff who believe their work can contribute to CQI were more likely implemented quality improvement project plan as compared to those didn't believe. The levels of quality improvement implementation at the study area were high as compared to national figures. In this research, the independent factors associated with continuous quality improvement identified by logistic regression factor were staffs trained on Quality improvement, having awareness about Quality improvement, Leaders who used data drive to decision making, Staffs who believed Continuous quality improvement can contribute for improvement in their work and Staff recognition based on their performance were positively associated with CQI implementation.*

**Key Words-** Continuous quality improvement, Sidama, Southern Ethiopia

# Chapter ONE

## 1. Introduction

Globally, for the very first time, healthcare quality and safety has gotten attention in the 55<sup>th</sup> world health assembly in 2002. Health care facilities are compelled to change and continuously improve, due to increments in life expectancy (Nolte & McKee, 2003), different technical innovations and expansion of healthcare treatment modalities. Healthcare professionals all over the world have experienced the significant growth, development, and prioritization of quality improvement in healthcare in the last two decades. Quality improvement approaches manifested by looking in the current system & processes identifying missed own opportunities that reduce cost of healthcare provision, continuous improvement and learning from the system performance (Grol, 2001).

Continuous quality improvement, or CQI, is a management philosophy that organizations use to reduce waste, increase efficiency, and increase internal (meaning, employees) and external (meaning, customer) satisfaction. It is an ongoing process that evaluates how an organization works and ways to improve its processes.

It is a progressive incremental improvement of safety, processes, and patient care. Continuous quality improvement goals might improvement of operations, outcomes, systems processes, improved work environment, or regulatory compliance. Continuous quality improvement development commonly includes defining the problem, benchmarking, setting a goal, then iterative quality improvement projects. Continuous quality improvement may be "gradual" or "breakthrough" in nature. Using iterative process, improvements are made, the effect of the improvements is measured, then the process is repeated until the desired outcome is achieved. There are different methodologies for continuous quality improvement includes Lean, Six Sigma, Lean & six sigma combined, Plan-Do-Study-Act (PDSA) cycles, and Baldrige Criteria. (Liu JJ et al., 2018)

The underlying philosophy of continuous quality improvement is that when problems arise it is generally a result of poor work design, unclear instructions, or the failure of leadership, not the people performing the processes. But for those organizations that utilize continuous quality improvement - as most do in some form or another nowadays - how they improve their products and processes permeates the culture of an organization; it's not just for the management team to worry about.

The underlying philosophy of continuous quality improvement is that when problems arise it is generally a result of poor work design, unclear instructions, or the failure of leadership, not the people performing the processes. But for those organizations that utilize continuous quality improvement - as most do in some form or another nowadays - how they improve their products and processes permeates the culture of an organization; it's not just for the management team to worry about.

To meet continuously changing patient needs, service providers need to search, identify and adopt new ways of working and employers are also expected to capacitate their employees. In resource-poor settings like African and especially sub-Saharan Africa, like our country Ethiopia, the evidence for the effectiveness of continuous quality improvement (CQI) is too low. Based on a study from Africa Health Research Institute (AHRI), intervention delivered by an expert of continuous quality improvement team of mentors shows continuous quality improvement as an important tool to improve delivery of a quality healthcare in Africa. (Yapa et al., 2020).

Africa Health Research Institute (AHRI) study showed an intervention delivered by an expert of CQI team of mentors shows CQI as an important tool to improve quality of healthcare delivery in Africa with evidence for the effectiveness of continuous quality improvement (CQI) in resource-poor settings like African and especially sub-Saharan Africa is very limited. Clinical application of continuous quality improvement has a positive impact when it takes place within a supportive regulatory and competitive environment, when it is aligned with financial incentives, and when it is under the direction of an organizational leadership that is committed to integrating all aspects of the work. (Yapa et al., 2020)

The common Continuous quality improvement goals includes reduction of cost, decreased appointment wait time, higher patient volume, reduced in-department wait time, reducing defects, increased patient safety, increased patient and/or staff satisfaction. (Amaratunga T, & Dobranowski J, 2016)

The very 1<sup>st</sup> Ethiopian Health Sector Transformation Plan (HSTP-I) was executed from 2015 to 2019. This transformation plan brought an improvement in improving the health of its population and increasing access to basic health care services. It also showed a huge improvement in increasing utilization of health services. During this time there was a remarkable reduction in morbidity and mortality from common communicable diseases such as HIV, tuberculosis/TB, and malaria. During this 1<sup>st</sup> HSTP, maternal and child health/MCH

has also improved which helped to save the lives of millions of women and children across the country. In addition to the maternal and child health success, other health outcome indicators have also shown improvement.

Then the 2<sup>nd</sup> second national health sector transformation plan (HSTP II) developed after benchmarking the learnings gained from the first health sector transformation plan. This health sector transformation plan will serve for five years strategic plan from 2020/21-24/25. It aims at improving the health of Ethiopian population by focusing on accelerating progress towards Universal Health Coverage (UHC), creating Woreda transformation, protecting people from different emergencies, and making the country's health system responsive to people's needs and expectations.

Ethiopia ministry of health prepared the very first healthcare quality strategy during the first Health Sector Transformation Plan (HSTP-I) from 2015/16 to 2019/20 wherein significant achievements were registered in improving quality management systems at levels of the health system. The capacity building of healthcare professionals and improvement initiatives and projects have resulted in significant improvement in the patient's outcome and experiences. National Learning platforms and inter facilities learning and collaborative endeavors have been established.

Despite these gains still, a lot of miles remains to institute robust quality management systems that guarantee continuous improvement in the systems. Collaborative implementation of the strategy and integration of the interventions in the existing programs and projects has been picked as a major weakness in the implementation of the previous strategy.

Building on the success of the first National quality strategy and redressing the gaps by incorporating new interventions, Ethiopia aims to improve healthcare outcome and experience of care in the coming five years. Then the 2<sup>nd</sup> National Healthcare Quality and safety strategy considered as the next five-year National quality strategy with reasonable emphasis given to the safety of healthcare that covers the period between 2013-2017 Ethiopian fiscal years (July 2020- June 2025).

Health facilities are implementing a facility level Continuous Quality improvement with the major activity being implementing a quality improvement Project.

The Institute for Health Care Improvement (IHI) lays out several steps for implementing a quality improvement project at health facilities. This starts with health facilities stating what they are trying to accomplish by setting “time specific and measurable aims” (IHI website). Then, health facilities establish measures that will indicate whether the improvement works. Changes that result in an improvement need to be identified and then tested in a Plan-Do-Study-Act (PDSA) or Plan-Do-Check-Act (PDCA) cycle. Innovative change ideas need to be planned, tested, studied, and then members must act on what they have learned (IHI website). PDSA cycles should start out in a small group before being tried in a large institutional setting. Most projects that use rapid PDSA cycles to address issues with patient handoffs measured their compliance with a standardized communication method (Wilson, 2007).

It is believed that small regional collaborative and local projects are vital to implementing healthcare quality improvements. A regional collaborative is more cost and time effective for facilities than a project that requires significant travel. A small collaborative provides the opportunity for participation by more staff than just the “usual suspects” of key administrative staff thus increasing its chance of success. A smaller group provides for increased opportunity for discussion and interaction among participants and encourages participation of community organizations.

Institute for Health Care Improvement/IHI in collaboration with Ministry of Health and Regional Health bureaus designed a results-based Improvement Collaborative for improving quality of services provided to mothers and newborns. The Collaborative is designed with three phases of prototype phase, test of scale phase, and scale-up phase. The prototype phase has an objective of understanding the implementation of a typical Collaborative approach and developing a change package to improve MNH quality across different geographies and contexts. Test of scale phase is designed to test a sustainable Improvement Collaborative arrangement which is fully integrated into the existing health system of the regions in the country. Full scale-up process will be designed based on the lessons learnt during the prototype and test of scale phases.

Prototype phase had been implemented in the Amhara, Tigray, Afar, SNNPR and Oromia regions. The Selected districts form a collaboration consisting of Primary Hospitals, Health centers, Health Posts and Referral Hospitals. Using prototype Woredas work, change package is developed for further use among themselves and at the test of scale sites. Sustainability work is underway in the prototype sites. Test of scale Woredas are selected by the regional

health bureaus using guiding selection criteria for maximum learning process. The scale-up implementation aims to support the Ethiopia Ministry of Health in reaching its goal of a high quality, equitable health system. This quality scale up initiative project has been implemented from Oct 2019 to September 2022.

Twenty-seven zones were planned to be enrolled in the 5 regions (Afar, Amhara, Oromia, SNNP and Tigray) regions over the three years of project period in a phased way. But the scaleup implemented in 8 regions where some regions are newly separated (Sidama and SWE) and Addis Ababa is newly added as perinatal mortality reduction collaborative.



## 1.1 Statement of the Problem

Continuous quality improvement in health care were developed for use at health facility level, and that is where they have been used the most, often addressing defined care processes. Despite that, in different settings different factors have been important to support institutionalization. Every year, there are more than 11 million children to preventable diseases because of inequalities in health and development and problems are even bad where resources are rarely available; those who need more care have the least access to healthcare. (Gwatkin et al., 2000).

With failure to utilize continuous quality improvement approaches, which are increasingly used to bridge gaps between the evidence base for best practice, what happens in practice, and achievement of better population health outcomes, there's still a long way to go to improve quality of healthcare delivery. Galipeau J. et al., (2012)

Increased differences and inequalities in healthcare resources which hinders equal access to healthcare. This problem is vast in Ethiopia in which all segments of the population in the country are not getting uniform quality healthcare throughout the country. Poor quality of care frequently occurs in low-resource environments when illness loads are still high and many health institutions lack necessities like pharmaceuticals or other supplies, working equipment, and educated employees. The impact can be significant. There remain gaps because, despite hopeful signals like a higher percentage of births taking place in hospitals, health outcomes have not improved. When nations face the simultaneous challenges of providing those efficient interventions at scale and maintaining a tolerable threshold for the quality of medical care being provided, simply knowing what needs to be done to lower maternal and neonatal mortality and prevent stillbirths in low-resource settings is insufficient. (Chou VB et al., 2019)

Governments, healthcare professionals, and the public all prioritize improving the quality and safety of healthcare, with efforts frequently concentrating on investments in changes to the organization and delivery of healthcare (system-level quality improvements). (England: NHS; 2014)

To overcome healthcare access and quality inequalities and disparities implementation of continuous quality improvement projects within the healthcare facilities is an ideal solution

agreed by Ethiopian Ministry of Health and implementing partners to improve the lives of Ethiopian population.

The gaps in quality of care, control of non-communicable diseases (NCDs), efficiency in delivery, control of health expenditures, and public satisfaction are still high all over the world especially in sub-Saharan countries like Ethiopia.

Ethiopian Ministry of Health stressed on utilizing continuous quality improvement in different departments like Maternal and Child Health/MCH to tackle maternal, neonatal and child mortality and morbidity. This causes the country to struggle in achieving mortality especially perinatal mortality which includes still births and early neonatal deaths.

Differences in success of continuous quality improvement project implementation doesn't result from lack of healthcare professional compassion and motivation rather it's a result of gaps in understanding healthcare quality, misuse of available technology, or the inability of healthcare organizations to change. With local healthcare systems unable to link practitioner incentives and objectives, to measure clinical practice, or to link quality improvement to better health outcomes (John W. et al, 2006). The complexity of healthcare systems and delivery of healthcare services, the unpredictable nature of healthcare market, and the occupational differentiation and interdependence among clinicians and systems make implementing quality improvement projects difficult (Ronda, 2008).

The challenges of implementing quality improvement project still there and hindering the health facilities to overcome quality and equity problems of the community. Moreover, literature on continuous quality improvement project implementation challenges in health care focuses on mainly in developed countries but limited in developing countries including Ethiopia. Healthcare quality problems and spiraling costs have resulted in widespread interest in solutions like continuous quality improvement that improve the effectiveness and efficiency of the health care system

Public Hospitals in Ethiopia faced many challenges in implementing continuous quality improvement projects which hampers them from overcoming healthcare quality and equity gaps of their communities. Most of the studies on continuous quality improvement project implementation challenges in healthcare setting are from developed countries which created literature shortage on the topic in sub-Saharan countries like Ethiopia.

As Sidama Region is indifferent to the above context and this being aggravated by being a newly formed region, public hospitals in the region faced many challenges to implement continuous quality improvement.

In the study conducted in Ethiopia more than half of the leaders in healthcare facilities were not receptive to new ideas which is a basis for continuous quality improvement. Moreover, most leaders (62.5%) were not encouraging of learning, and 66% were not engaged in any quality improvement project implementation process. A similar study finding showed only 35% health facilities had implemented continuous quality improvement projects. (Wendossen et al., 2018). This result is lower than comparison studies conducted in Sri Lanka (43%). (Somatunga et al, 2015)

Therefore, the findings of this study aim to identify the major factors contributing to implementation of continuous quality improvement projects in public hospitals.

## 1.2 Research Questions

This study guided by the research questions mentioned below

- What are the factors affecting the continuous quality improvement project implementation at health facility level?
- What are quality improvement project implementation challenges in public health facilities?
- How much is the level of involvement in public hospitals on quality improvement project implementation by health professionals?
- What are the factors that influence hospital leadership in healthcare quality improvement projects implementation?
- How is the Clinical governance and quality team of the hospital's functionality and their involvement in the hospital CQI work?

## 1.3. Objectives

### 1.3.1. General objective

The general objective of this Study is to assess implementation of continuous quality improvement projects implementation and associated factors in public health facilities for the better delivery of health care service in the case of Sidama region, Southern Ethiopia

### 1.3.2. Specific Objectives

- To determine levels of quality improvement implementation among public hospitals of Sidama region
- To identify factors that determines implementation of continuous quality improvement projects in the health facilities.
- To identify influence of leadership in healthcare quality improvement projects implementation.
- To determine health professionals' involvement in continuous quality improvement implementation

#### 1.4. Scope of the Study

By identifying the factors affecting continuous quality improvement project implementation, this study evaluates the level of involvement by health professional and leaders in the continuous quality improvement project implementation at health facility level.

The scope of the study illustrated in identify factors that affect continuous quality improvement project implementation in public hospitals in the case of Sidama Region, Southern Ethiopia.

Geographically the scope of this study limited for public hospitals in Sidama region starting implementation of quality improvement project with the support of institute for health care improvement project. The respondents of the study will be health professionals and hospital leadership who are participating in the implementation of continuous quality improvement project in those hospitals.

#### 1.5. Significance of the Study

The finding of study can serve as evidence to tackle continuous quality improvement project implementation challenges in the health facilities in Ethiopia. It provides evidence and knowledge for public health facilities to see implementation level gaps to ensure involvements of health professionals and leader to improve quality of health care delivery for clients in need of the service. Moreover, the research findings will pave the way for further research on this topic.

#### 1.6. Limitations of the Study

The selection of participants was specified to public hospitals supported by institute for health care improvement/IHI perinatal mortality reduction project. Finally, since the study used cross-sectional study with limited sample size the find will have of causal and effect relationship dilemma. Also, there was financial limitation which limited the study from undertaking this study at large scale. The other challenges were absences of adequate local studies on this topic.

#### 1.7. Ethical Issues

First permission and ethical clearness from the Research and Ethics Review Committee of Addis Ababa University, College of business and Economics was secure and delivered to the regional health bureau and the hospitals CEO were communicated to get permission and support to collect data from the health professionals and leaders of the respective health

facilities for the research. The data collectors explained to all participants about the purpose and importance and those participants who refused to participate in the study will not force to participate.

Finally, data was collected after informed verbal consent obtained and confidentiality of the information was maintained by excluding participants names and personal identification. Participants were informed that the information obtained from them will not be disclosed to any third person and/or body.

### 1.8. Organization of the Study

The study was organized in 5 chapters. The first two chapters includes the introduction of the study and review of related literatures respectively. The 3<sup>rd</sup> chapter contains methodology of the research. Finally, the fourth and fifth chapter presented the finding of data analysis and interpretation including discussion and conclusion and recommendation respectively.

# CHAPTER TWO

## REVIEW OF LITERATURES

### 2.1 Defining quality

There are many definitions of quality. In different dictionaries, there are several definitions. In addition, every quality expert defines it in different way depending on their environment and criteria. Since quality is widely used by practitioners and academics, there is no generally agreed definition of it, with different definitions of quality are appropriate under different circumstances (Ojasalo, 2006)

The word quality originates from the Latin word “qua litas”, meaning “usefulness”. The Oxford dictionary (website) defines quality as “a distinctive attribute or characteristic possessed by someone or something.”

Garvin (1984) described 5 approaches for quality definition (the transcendent approach; the product-based approach; the manufacturing-based approach; value- based approach; and the user-based approach). These approaches have been adapted, refined, and expanded throughout different literatures to define quality. (Zu et al., 2008).

Quality means “The degree to which a set of inherent characteristics fulfills requirements”. Quality also refers to the entirety of an entity's traits that affect its capacity to meet both explicit and implicit needs. ISO – 9000:2000

The most used definition of quality was introduced by Juran (1951) and Juran and Godfrey (1999:2.2) which meets all the previous conditions, where quality is defined as fitness for use with use is associated with customer requirements, while fitness suggests conformance to measurable product/service characteristics (Nanda, 2005).

Quality in healthcare has also different definitions. The Institute of Medicine/IOM defines quality in healthcare as “The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (Soriano, 2006). Sollecito and Johnson (2011) emphasize that QI in healthcare is a structured process for involving the personnel in a continuous flow of

improvements, aiming to provide high-quality healthcare that meets or even exceeds expectations.

The first Ethiopian National Healthcare quality and safety strategy/NQS defined Quality improvement (QI) as a “continuous process in which organizations iteratively test and measure changes in work routines, set & achieve ambitious aims, shift whole system performance, and spread best practices for rapid uptake at a larger scale to address a specific issue or suite of issues they have determined to improve.”

The second Ethiopian National Healthcare quality and safety strategy/NHQSS define quality in healthcare as “a comprehensive and integrated care that is measurably safe, effective, people-centered, and uniformly delivered in a timely way that is affordable to the Ethiopian population and appropriately utilizes resources and services efficiently.” NHQSS 2021



## 2.2. The Concept of Quality improvement

The American Society for quality defined quality as Characteristics of a service or product and totality of its features which bear on its ability to satisfy the given needs. (American Society for Quality). One of the founders of quality improvement science, Edward Deming (2000) wrote quality as “Quality should be aimed at the needs of the customer, present and future”.

Over the years the concept of quality developed from industrial control thinking (Bergman & Klevsjö, 2002) to a comprehensive view based on the principle of continuous improvement (Batalden & Davidoff, 2007). Classical theory in quality management proposes the following key principles as customer focus, continuous improvement, process orientation, teamwork and decisions based on facts (Dean & Bowen, 1994; Hackman & Wageman, 1995; Sousa & Voss, 2002; Schroeder et al., 2005).

Sometimes Quality Improvement knowledge is called improvement science and most researchers and practitioners agree that it has developed and become more common since its introduction to healthcare, some twenty years ago. According to Bessant et al. (2001) “there is a considerable and unhelpful confusion in the way the term ‘continuous improvement’ is used”. Several different expressions (e.g., quality improvement, continuous improvement, quality assurance) are used. Riley et al. (2010) conclude that healthcare has not embraced a shared and common definition for QI.

It is the methodology used to systematically improve processes. Setting goals, testing, and measuring are all aspects of quality improvement. With QI, standardized procedures are built for ongoing oversight, evaluation, and development.

The key principles according to classical theory in quality management and improvement proposes that are customer focus, continuous improvement, process orientation, teamwork and decisions based on facts (Dean & Bowen, 1994; Hackman & Wageman, 1995; Sousa & Voss, 2002; Schroeder et al., 2005). Over the years, quality concept developed from industrial control thinking (Bergman & Klevsjö, 2002) to a comprehensive view of the principle of continuous improvement (Batalden PB & Davidoff F, 2007).

Several different expressions (e.g., quality improvement, continuous improvement, quality assurance) are used. Riley et al. (2010) conclude that healthcare has not embraced a shared and common definition for QI.

According to the U.S. Department of Health and Human Services, there's a need to find a common definition of quality improvement in healthcare, helping both practitioners and patients (customers) to know what they can expect (Riley et al., 2010). Batalden and Davidoff (2007) responded to the question "What is quality improvement?" as "the combined and unceasing efforts of everyone healthcare professionals, patients and their families, researchers, payers, planners and educators to make the changes that will lead to better patient outcomes (health), better system performance (care) and better professional development (learning)".

According to the United Kingdom Health Foundation "Improvement Science" (Health Foundation, 2011) stated that "improvement science is about finding out how to improve and make changes in the most effective way". There is substantial confusion in the way the term 'continuous improvement' is used" like quality improvement, continuous improvement, quality assurance) according to Bessant et al., 2001).

Establish a culture of quality in organization, processes, and procedures should support and be integrated with QI efforts. The culture of a practice—attitudes, behaviors, and actions—reflect how passionately the practice team embraces quality. The quality improvement culture looks different for every practice, but may include establishing dedicated continuous quality improvement teams, holding regular continuous quality improvement meetings, or creating policies around agreed continuous quality improvement goals as main concepts.

Determine and prioritize potential areas for improvement, identify and understand the ways in which the healthcare delivery practice could improve is a vital concept. Examine the patient population (e.g., to identify barriers to care, frequently diagnosed chronic conditions, or groups of high-risk patients) and your practice operations (e.g., to identify management issues such as low morale, long patient wait times, or poor communication). collect and analyze data.

The other main concepts in quality improvement, data collection and analysis lie at the heart of quality improvement. The data will help understand how well the current systems work, identify potential areas for improvement, set measurable goals, and monitor the effectiveness of change. It's important to collect baseline data before beginning a QI project, commit to regular data collection, carefully analyze your results throughout the project, and make decisions based on your analysis.

### 2.3. Continuous quality improvement

Continuous quality improvement (CQI) is a quality management philosophy that encourages all team members, including board members, volunteers, and employees, to continuously ask what can be done better. Continuous quality improvement builds on existing quality management approaches such as total quality management, Lean, and Six Sigma, but emphasizes that internal and external customer satisfaction is paramount, and that problems are caused by processes, not people. (Donabedian, 2003).

Continuous Quality Improvement (CQI) is a deliberate, defined process which is focused on activities that are responsive to community needs and improving population health. It is a continuous and ongoing effort to achieve measurable improvements in the efficiency, effectiveness, performance, accountability, outcomes, and other indicators of quality for state and local program levels.

Continuous quality improvement (CQI) is a means for attaining quality in various endeavors. It helps to understand what to do and how to improve on it. It builds on quality to attain higher standards. Humans are constantly improving who they are and what they do to be valued more. A continuous quality improvement process study examines how well a healthcare delivery system works. These studies concentrate on how an organization completes a particular activity, which is frequently a nonclinical task that is perhaps connected to a clinical operation.

The quality management approach known as continuous quality improvement (CQI) urges all members of the health care team, including educators and other nonprofit or organization members, to constantly ask themselves, "How are we doing?" and "Can we do it better?" To continuously learn about an organization's implementation and program operations, continuous quality improvement systems are developed to design questions, measurement tools, and processes as well as practices for analysis, reporting, and discussion. To continually assess whether a business is accomplishing its stated goals and objectives, a systematic planning strategy is needed. (Edwards et al., 2008)

A program for continuous quality improvement frequently aims to take a closer look at several different procedures inside a healthcare institution. However, a continuous quality improvement program also focuses on a particular area of how an organization runs. Classifying a program as either a continuous quality improvement process study or a continuous quality improvement outcomes study is one method to distinguish that focus.

Continuous quality improvement initially developed in the 20th century by Walter Shewhart. Shewhart developed continuous quality improvement to solve procedural problems before mistakes could harm potential products. The statistical process control developed by Walter Shewhart/ Shewhart Control Charts which traced to the 1920s and 1930s as the beginning of continuous quality improvement enabled employees to track changes in processes and product output using a chart called Shewhart control chart.

Since the 1990s, quality control methods and management theories used in the industrial and manufacturing sectors have been incorporated into the application of continuous quality improvement in the healthcare industry. In its original form, continuous quality improvement was founded on five key tenets, namely: a focus on organizational processes and systems rather than individuals within the system; the use of statistically and methodologically robust structured problem-solving approaches; the use of multidisciplinary team working; empowerment of employees to help identify problems and action improvement opportunities; and a focus on "customers" (i.e., the general public) through an emphasis on creating value for them. (Griffin P et al., 2016)

#### 2.4. The Need for quality improvement in healthcare

The need for Quality improvement arises to standardize the processes and structure the system to reduce variation, achieve predictable results, and improve patient care and health outcomes for patients, healthcare systems, and organizations. Having great potential to be used together with other different change approaches Quality Improvement uses audit to inform iterative tests of change or consecutively using QI to adapt published research to local context. (Jones B, Vaux E, Olsson-Brown, 2019)

It is commonly acknowledged that inadequate health care quality is a significant obstacle to achieving ideal health outcomes and economic development, particularly in low- and middle-income countries. Health care services around the world frequently fall short of providing patients with safe, compassionate treatment when and when they need it, despite the abundance of evidence-based recommendations. Studies of care delivery in low- and middle-income countries demonstrate widespread deficiencies in the care provided at all levels of the health system. While there is broad global consensus on what should be done to deliver quality health care, many simple, high-impact interventions capable of saving lives and alleviating suffering are not reaching the people who most need them. Much of this implementation "know-do" gap is related to weak health systems and processes of care delivery.

The necessity of quality improvement may be seen in many places. Increased patient safety, more effective and efficient care, and better patient outcomes can all result from quality improvement. It may also assist in lowering healthcare expenses. Every health care organization should be engaged in a constant process of quality improvement. QI teams can greatly increase results because they are made up of individuals with different expertise and skill sets. The FOCUS-PDSA model is an example of a typical framework that teams can use to think about the improvement process.

Quality improvement in healthcare is a systematic approach by a healthcare organization that monitors, assesses, and improves the standards of quality healthcare. The organizational chain of activities is cyclic, and needs continuous improvement to seek a higher level of performance. Continuous upgradation in healthcare activities can pull out healthcare organizations from inefficient traditional concepts and utilize technology/tools to perform efficiently and hence generate better quality results. Quality improvement is a means for enhancing safety, effectiveness, and efficiency accelerate performances.

The need for quality improvement in healthcare is critical to boosting performance through a methodical process that necessitates ongoing improvement. Additionally, it contributes to the community's general health improvement, improves patient experiences, and improves provider experiences by lowering the cost of care.

Quality improvement professionals review patient and other medical data and analyze processes used to provide care. Using that information, they work to identify areas of improvement and highlight areas of excellence, said Sowell. The goal of this work is to improve patient outcomes, achieve efficiency in the delivery of medical care and reduce healthcare costs. (Batalden & Davidoff, 2007).

Engaging primary care practices in quality improvement (QI) activities is essential to achieving the triple aim of improving the health of the population, enhancing patient experiences and outcomes, and reducing the per capita cost of care, and to improving provider experience. With Ethiopia's 85% of healthcare system delivery dependent on Primary healthcare, QI is vital to achieve a robust primary healthcare for the country.

## 2.5. Continuous Quality Improvement Implementation

Continuous Quality Improvement (CQI) is a disciplined to be implemented in problem solving as basic building blocks of the program like leadership, planning, quality control, and quality improvement. It is customer focused, data driven, and empowers the employees to meet the needs of their patients.

Continuous Quality Improvement is in the process of being implemented in hospitals around the world. To gain a better understanding of the “best management practices” the International Quality Study is being conducted in four countries-Canada, Germany, Japan, and the United States-and across four industries-Health Care, Banking, Automotive and Computers. (Denise A. Van Valkenburgh, 2001).

continuous quality improvement Programs that are implemented multiple times are frequently subject to review to ensure that the intended benefits are being achieved. Continuous quality improvement (CQI) is one important aspect of evaluation that can be used to improve a repeated program’s effectiveness. (Wilson et al. 2009)

Implementation concept is closely connected to change and improvements according to Institute for Healthcare Improvement website. (IHI website).

In research, Improvement Science (Ting et al., 2009) and Implementation Science (Fixen et al., 2005) are two clearly distinct fields. In practice, however, it is often hard to draw the boundary line between them. However, this thesis will be situated within the field of improvement science, and the field of implementation science will not be applied. The first reason for this is that this thesis mainly deals with change and improvements from a specific case view, and in this case, implementation is not explicitly included, which can be seen as a weakness, but not unusual in improvement initiatives in healthcare (Wallin, 2009).

## 2.6. CQI Implementation Models

Healthcare operational excellence and optimization of processes, products, and clinical care services have become an important strategy for healthcare organizations better service provision. (Sanchez and Blanco 2014).

Since Continuous quality improvement processes in health care developed for use at health facility level, they have been used the most to address defined care processes. (B. A. Lameijer, et al., 2021)

Quality improvement Model is a framework or roadmap used to organize the work of improvement initiatives or activities. These models encourage planning based on theory, empowers people in the organization/facility to take action, facilitates use of teamwork and emphasizes and encourages iterative learning. (NQSS, 2021)

Considering Ethiopia, an appropriate, robust, and sustainable model for improvement in health system performance is essential to improve the existing gaps in the healthcare settings especially facility level problems. Improvement would be contingent upon the convergence of commitment, expertise, and resources throughout the system. Such type of robust model for improvement would embrace all the dimensions that are critical to health by addressing not only the risk factors of disease but also cross-cutting issues and linkages between health and employment, food security, nutrition, and financing for health.

Several overlapping and complementary quality improvement models exist, but all stem from Science of Improvement. The models start with an aim, then develops ideas and tests towards improvement. Some models provide framework to improve patient/client care/service like Care Model and Lean Model, while some others focus on processes that monitor the results like Six Sigma Model, FADE (Focus, Analyze, Develop, Execute), MFI (Model for Improvement) models. (NQSS, 2021)

The essential elements of the suggested models or use in Ethiopian health system include decentralized governing structures linking the health system to communities; identification of an essential care package for health (ECPH) based on peoples' priorities; an improved information system to provide evidence of improvement in service access, delivery, and outcomes; and regular dialogue among stakeholders to enhance informed demand, responsibility, and accountability. The model attempts to pay due regard to the people's own beliefs, knowledge, customs, experiences, practices, systems, and structures that give meaning to the ECPH and mitigate the discontinuity between people's perceptions and the health intervention package through regular dialogue.

## 2.7. Continuous quality improvement projects

Ethiopia launches the second national Healthcare quality and Safety strategy (NQSS) in 2021 after learning and benefiting a lot from the first ever NQS which first developed in 2016. One priority area among the identified five areas of the NHQSS is quality and equity with the other four being information revolution, motivated competent and compassionate health workforces, transformation in Leadership, transformation in healthcare financing. Transformation in equity and quality of health service delivery intends to consistently improve patient's clinical care outcomes, patient safety, patient-centered and integrated care, while increasing access and equity for all segments of the Ethiopian population without discrimination based on different personal characteristics like race, ethnicity, gender, socio-economic characteristics.

Guided by the first National Healthcare Quality Strategy, a quality structure was created at Ministry of Health. Then the structure extended to regional health bureaus, zonal health departments, hospitals and up to primary healthcare unit/PHCUs. At Ministry level Directorate was formed as Quality directorate, while quality unit was formed as case team at regional health bureau level which is less powerful as it's not at directorate level. At zonal Health departments and Woreda Health office level also quality structure created ranging from focal person to quality teams. Now, the second strategy allows to create a more powerful unit at RHB and higher-level hospital level by allowing to have a quality directorate structure. The Ethiopian National healthcare quality strategy/NQS recommends using two quality improvement models for use in Ethiopian healthcare system. These two quality improvement models are Kaizen as entry point and Model for Improvement to drive the improvement work.

Different implementing partners support the healthcare quality improvement work in Ethiopia in the past few years after the development of the national healthcare quality strategy. Institute for Healthcare Improvement/IHI is one of the pioneers supporting the healthcare quality initiatives in Ethiopia. Now Institute for Healthcare Improvement works in 6 regions of the country and is now supporting 10 Public hospitals in Sidama region in collaboration with Sidama regional health bureau to implement CQI with the aim of reducing Perinatal mortality rate.



## 2.8 Factors affecting continuous quality improvement projects implementation

Multiple determinants affect continuous quality improvement projects implementation in health facilities. The factors vary across different health institutions even though not well studied. Healthcare service quality is influenced by personal aspects of the patient and provider as well as by organizational, systemic, and environmental factors. The availability of resources, effective management of those resources, staff, and processes, as well as collaboration and cooperation among providers, all contribute to higher healthcare quality. (Mosadeghrad, 2014)

Based on a recent study conducted in South Peoples Nations and Nationalities/SNNPR health facility leaders sharing information about health facility service delivery status, facility leaders who are receptiveness to new ideas, and health facilities who have a quality improvement project plan are factors affecting continuous quality improvement projects implementation in health facilities. (Addisu G., 2019).

According to on another study by Somatunga et al (2015), shortage of training of the staff, resistance from supervisor; absence of management support for the quality improvement initiatives, Organization objectives are not being publicized, mostly government hospitals are disorganized, and staff spend most of their time for non-value-added activities makes hospitals unable to concentrate on their quality improvement activities. (Somatunga et al., 2015).

Based on another study, less examination of multiple contexts and analysis in studying improvement, less investigation of different improvement method adoption, poor association between change processes and organizational performance outcomes, and episodic versus continuous change processes, and weak partnership between scholars and practitioners in studying various approaches are some of the factors affecting continuous quality improvement project implementation. (Cheng & Heng, 2002).

According to (Lau, 2001) elements like teamwork, trust, and education and training, top management leadership, employee involvement and customer satisfaction affects continuous quality improvement and quality management initiatives.

There's a need to convince people there is a problem challenge to convince people of improvement solutions, design, and planning of quality improvement interventions since relying on the intrinsic motivations of staff for quality improvement will takes too much time. Different factors like not getting leadership for quality improvement, chauvinism, and poor

staff engagement, are affecting health facilities continuous quality improvement/CQI project implementation. (Mary Dixon-Woods et al., 2012)

According to a study conducted to assess the factors influencing continuous quality improvement implementation experience in Korean hospitals, it appears that the most important contributing factors to active continuous quality improvement implementation in Korean hospitals were the use of scientific skills in decision-making and the adoption of a quality information system capable of producing precise and valid information. (Sunhee Lee et al., 2002)

## 2.9 Conceptual Framework

The conceptual framework developed based on the Malcolm Baldrige National Quality Award (MBNQA) (NIST, 2017). The Malcolm Baldrige National Quality Award (MBNQA) is an award established by the U.S. Congress in 1987 to increase awareness of quality management and recognize United States companies that have implemented successful quality management systems. This award is the US's highest presidential honor for performance excellence. It is composed of 9 different dimensions like system readiness, hospital leadership engagement, Clinical governance, and quality unit of Hospitals.

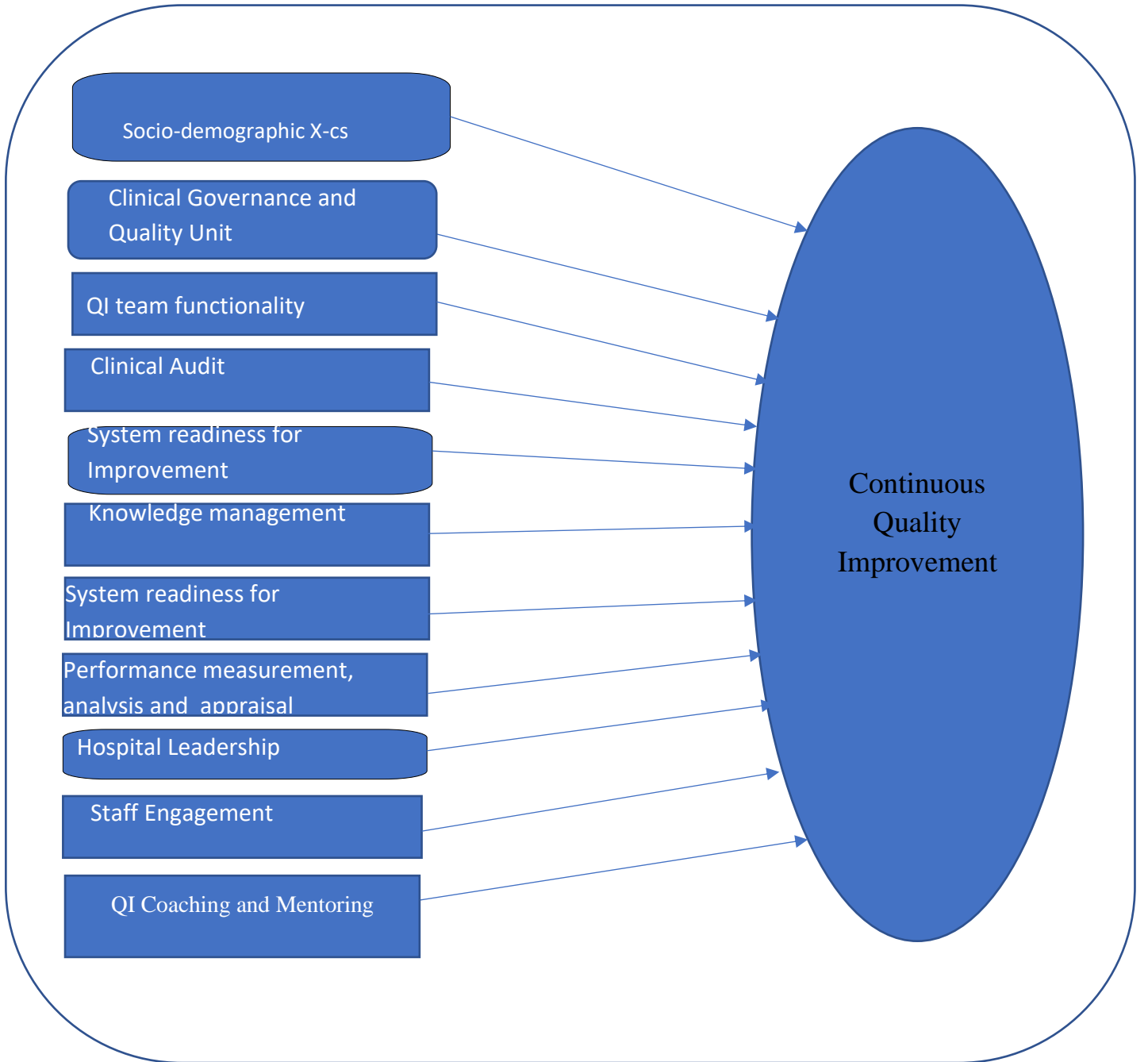


Figure 1 *Conceptual framework factor influencing continuous quality improvement project implementation in health facilities*

## CHAPTER THREE

### 3. RESEARCH METHODOLOGY

#### 3.1 Contents

This chapter described description of the study Area/Organization, study design, data collection, sampling design, data collection instrument, data management and analysis that was used for the study.

#### 3.2 study Area/Organization

The study was conducted in 10 Public Hospitals implementing Institute for Healthcare Improvement's Perinatal mortality reduction project in Sidama region, Southern Ethiopia. Sidama National regional state is one of the ten regional states and two city administration of the Federal Democratic Republic of Ethiopia. It was formed on 18 June 2020 from the Southern Nations, Nationalities, and Peoples' Region (SNNPR) and transformation of the Sidama Zone after a 98.52% vote in favor of increased autonomy in the 2019 Sidama referendum.

Sidama is bordered to the south by the Oromia Region (except for a short stretch in the middle where it shares a border with Gedeo zone), on the west by the Bilate River, which separates it from Wolayita zone, and on the north and east by the Oromia Region. Sidama has a population of around 3.2 million in 2017. The region has 21 hospitals and 133 health centers. Among the 21 Hospitals, 5 of them are general Hospitals, 1 comprehensive specially hospital and the other remaining Primary Hospitals.

#### 3.3 Research Approach and Design

A Cross-sectional study design was used to assess factors on continuous quality improvement project implementation in Public Hospitals in the case of Sidama, Southern Ethiopia; from April to May 2022.

#### 3.4 Data Type and Source

Primary sources were collected from health professionals and health managers involved in the continuous quality improvement project implementation while Secondary data sources for this study were from published and unpublished continuous quality improvement related literatures, assessments, national guidelines.

### 3.5 Study population

#### 3.5.1 Target and Source population

##### 3.5.1.1 Source population

All health care providers working in Hospitals which implemented continuous quality improvement project with in Sidama Region

All Hospital leadership who has a part in continuous quality improvement project implementation in the Sidama Region

##### 3.5.1.2 Target population

Health care providers and managers who are working in Hospitals Sidama Region supported by Institute for healthcare improvement.

Leaders of the 10 Public Hospitals in the Sidama Region supported by Institute for healthcare improvement.

### 3.6 Sample size determination & Sampling selection procedure

Convenient sampling technique was used to select the study participants. Healthcare professionals and leadership staffs who has direct contribution to the CQI work selected. Conveniently selected health care providers and Hospital leadership working in Institute for Healthcare Improvement supported public Hospitals participated in the study. To control limitation of the sampling method, I diversify the data collection by recruiting as many participants as possible I also distributed the study at different days and times and use different methods for recruiting participants.

### 3.7 Data Collection Methods and tools

Structured self-administered questioner which administered to the hospital staffs was used as data collection instrument for the quantitative method. After getting verbal consent from the participants, data on factors affecting continuous quality improvement project implementation was collected by administering a pre-tested structured questionnaire. As mentioned in the conceptual framework, Malcolm Bridge national quality award criteria (MBNQAC) data collection tool adopted from National Institute of Standards and Technology (NIST) of united states (NIST, 2017) used. In addition, considering number of the study population and the geographical nature of the hospitals 3 data collectors were

involved in the data collection. Regarding the secondary data both general literature and related works were reviewed.

### 3.8 Plan for data quality control

The English version of the structured questionnaire was used for the questioner. The questionnaire was pre-tested on 5% of the sample size of the study who are working in another Hospital to ensure clarity, ordering, consistency, and acceptance. It was then finalized by making necessary corrections from the pre-tested

Data collectors and supervisors were trained for two days. The principal investigator attended and controlled the field work. Before data collection, clear introduction on the purpose of the study was given to respondents. During data collection, supervisors watched over the data collectors on site and every evening they checked the data for accuracy, consistency, and completeness. Supervisors rechecked five to ten percent of the samples to cross check the collected data.

### 3.9 Data analysis and Data Presentation

One the data collected, the data was checked for completeness, consistency, and clearance. Then data entered and analyzed with the help of statistical package for social science (SPSS 21.0) windows version. Frequency distribution of the responses was determined by computing descriptive statistics and presented by tabulation. To identify factors associated with outcome variable binary logistic regression was used. In bi variable analysis co-variables with P-value <0.25 were included in multi variable analysis and the final model was interpreted using AOR with 95%; CI at P-value of <0.05.

### 4.0 Plan for dissemination of the results

The findings of the study will be submitted to Addis Ababa University School of Commerce, project management program. It'll also be disseminated to Sidama RHB, and the 10 public Hospitals included in the study and Institute for Healthcare Improvement and other relevant concerned bodies. Finally, the result will be presented on scientific conferences, quality summits and will be published on scientific journals.

## CHAPTER FOUR

### 4. Data analysis, presentation, and Discussion

#### 4.1 Results

##### **Socio-demographic Characteristics of health professionals working at public hospitals of Sidama region**

A total of 120 conveniently selected respondents were participated in the study. The mean (SD) age of study subjects was 33.9( $\pm$ 6.3) years. Among 120 respondents' majorities 94(78.3%) were males.

Concerning their age above half of them 66(55.0%) were belongs to 25-35 years age groups followed by 36-45 years 38(31.7%). Regarding profession of participants, Physicians share the majority with 38.3% while the lowest is HITs with 8.3% from the total study participants. Majorities of participants were working in Clinical governance and Quality Unit. Among a total of 120 study subjects 76 (63.3%) of them received quality improvement related trainings. (Table 1).

Table 1; socio-demographic of health professionals working at public hospitals of Sidama region, southern Ethiopia 2022

Variables	Category	Frequency	%
Sex	Male	94	78.3
	Female	26	21.7
Age	$\leq$ 25 years	7	5.8
	25-35 years	66	55.0
	36-45 years	38	31.7
	$\geq$ 45 years	9	7.5
Profession of the Participant	Midwife	16	13.3
	Nurse	29	24.2
	Public Health Officer	19	15.8
	Physician	46	38.3
	HIT	10	8.3
Educational level of the	Diploma	21	17.5



Participant	Degree	75	62.5
	Post-graduate	24	20.0
Current Working Department of the	Clinical governance and Quality Unit	45	37.5
Participant	OPD/IPD	36	30.0
	HMIS	9	7.5
	MNCH	18	15.0
	Others, Specify ____	12	10.0
Take any QI related Quality Improvement training	Yes	76	63.3
	No	44	36.7

### **Clinical governance and Quality Improvement team Functionality and Quality Improvement work at public hospitals of Sidama region**

Majority of staffs 46 (38.3%) responded that, every staff member is responsible for contentious quality improvement while 18.3% think the responsibility goes to the leadership. Above half of the respondents 93(77.5%) were believed that the health facility staffs can contributing to continuous quality improvement /CQI Project implementation.

77.5% of the health facility staffs focused on quality of patient care. 50% of the Hospital workers are aware of external quality improvement expertise but not utilized. 71.7% of Hospital staffs focused on the quality of patient care, and confident in their ability to improve quality of health care.

Table 2; Clinical governance and Quality Improvement team Functionality and Quality Improvement work at public hospitals of Sidama region, 2022

Variables	Category	Frequency	%
Who do you think is responsible for Quality Improvement Project implementation	QI team members	35	29.2
	Leadership	22	18.3
	Every staff member	46	38.3
	Clinical audit team members	17	14.2
Staffs focused on the quality of	Yes	93	77.5

patient care	No	27	22.5
Believe staffs are contributing to	Yes	93	77.5
Quality Improvement project	No	27	22.5
implementation			
Staffs focused on the quality of	Yes	86	71.7
patient care, and confident in their	No	34	28.3
ability to improve quality of care			
Hospital workers are aware of	Yes, and utilized QI	13	10.8
external quality improvement	expertise		
	Yes, but not utilized	60	50.0
	Not aware at all	17	14.2
	I don't know	30	25.0

### **Hospital Leadership engagement on Quality improvement at public hospitals of Sidama**

From a total of 120 respondents in almost half 59(49.2%) health facility leaders were engaged in preparing quality improvement Project plan, however majority of QI projects 78(65.0%) were initiated without Senior management team/SMT approval. Of the total 120 study subjects less than half 47(39.2%) replied leaders shares information/ data about health facility and encourages learning that will help employees advance their knowledge of service delivery. 23.3% of staffs don't know whether health facility leaders use data to drive decision making. Majorities leaders 63(52.5%) were using Quality improvement dashboard/ KPI for decision making during QI meeting. (Table 3). Only 39.2% of Health facility leadership encourages learning that will help employees advance their knowledge. Only 15% Do hospital leaders allocate necessary resources like adequate time, trained manpower, equipment, and budget for Quality Improvement projects to be successful.

Table 3; Leadership engagement on Quality improvement at public hospitals of Sidama Region, Southern Ethiopia 2022

<b>Variables</b>	<b>Category</b>	<b>Frequency</b>	<b>%</b>
Including Quality Improvement agenda in board meeting	Yes	18	15.0
	No	54	45.0
	I don't know	48	40.0
Leaders use data to drive decision making	Yes	15	12.5

	No	77	64.2
	I don't know	28	23.3
Health facility leadership engaged in preparing Quality Improvement Project plan	Yes	59	49.2
	No	61	50.8
How many Quality Improvement projects facility leadership design with QI teams to improve the service in the last 1 year?	In None	56	46.7
	In Some	52	43.3
	In all	12	10.0
Senior management approve Quality Improvement Projects before initiation and graduation	Yes	42	35.0
	No	78	65.0
Health facility leadership shares information/ data about health facility service delivery	Yes	47	39.2
	No	65	54.2
	I don't know	8	6.7
Health facility leadership encourages learning that will help employees advance their knowledge	Yes	47	39.2
	No	65	54.2
	I don't know	8	6.7
Health facility leaders use Quality Improvement dashboard/ indicators for decision making	Not at all	39	32.5
	Yes, during QI meeting	63	52.5
	Yes, during performance review	18	15.0
Do hospital leaders allocate necessary resources like adequate time, trained manpower, equipment, and budget for Quality Improvement projects to be successful.	Not allocated	15	12.5
	To some extent	86	71.7
	Allocate enough Resource	18	15.0

### **The levels of quality improvement implementation among public hospitals of Sidama region**

The levels of quality improvement implementation among public hospitals of Sidama region was 70(58.3%) with 95%; CI (49.2, 67.5).



**Figure 2;** *the levels of quality improvement implementation among public hospitals of Sidama region southern Ethiopia 2022.*

**Factors associated with Quality improvement implementation in bi variable analysis**

In bivariable analysis, those who received Quality Improvement related training, health workers who cooperate and work as a team, Health workers who are aware of continuous quality improvement, hospital Leaders using data to drive decision making, including quality improvement agenda in board meeting and during Quality Improvement meeting and recognized staffs based on their performances were nominated for multi variable analysis. (Table 4).

Table 4; Co variables associated with Quality improvement implementation during bi variable analysis at public hospitals of Sidama region, southern Ethiopia 2022

Variables	Category	QI implementation			P-value
		Yes (%)	No (%)	COR(95%:CI)	
Sex	Male	54(77.1)	40(80.0)	0.84(0.34,2.05)	0.66
	Female	16(22.9)	10(20.0)	1	
Professional	Diploma	11(15.7)	10(20.0)	0.66(0.20,2.17)	.49

	Degree	44(62.9)	31(62.0)	0.85(0.33,2.19)	.74
	Post-graduate	15(21.4)	9(18.0)	1	
received Quality Improvement related training	Yes	52(74.3)	24(48.0)	3.13(1.45,6.77)	<0.01
	No	18(25.7)	26(52.0)	1	
Health facility health workers cooperate and work as a team	Yes	60(85.7)	32(64.0)	1	
	No	10(14.3)	18(36.0)	0.30(0.12,0.72)	0.01
Do you believe staffs are contributing to Quality Improvement implementation	Yes	56(80.0)	37(74.0)	1.41(0.59,3.33)	0.44
	No	14(20.0)	13(26.0)	1	
	<5 years	30(42.9)	16(32.0)	1.31(0.53,3.27)	0.56
	5-10 years	20(28.6)	20(40.0)	0.70(0.28,1.76)	0.45
Work experience	>10 years	20(28.6)	14(28.0)	1	
Heath staffs aware about Quality Improvement	Yes	48(68.6)	15(30.0)	5.09(2.32,11.19)	<0.01
	No	22(31.4)	35(70.0)	1	
Leaders use data to drive decision making	Yes	41(58.6)	11(22.0)	5.01(2.21,11.39)	<0.01
	No	29(41.4)	39(22.0)	1	
Including Quality Improvement agenda in board during Quality Improvement meeting	Yes	39(55.7)	15(30.0)	2.94(1.36,6.32)	0.01
	No	31(44.3)	35(70.0)	1	
Staff who believed Continuous Quality Improvement/ CQI can contribute for improvement in their work	Yes	39(55.7)	15(30.0)	2.51(1.19,5.31)	0.02
	No	31(44.3)	35(70.0)	1	
Promotion and growth opportunities based on work performance	Yes	21(30.0)	7(14.0)	3.25(1.02,10.38)	0.05
	No	37(52.9)	30(60.0)	1.34(0.53,3.35)	0.54
	I don't know	12(17.1)	13(17.1)	1	
	Yes, regularly	13(18.6)	6(12.0)	1.17(0.67,7.04)	.198
recognizing staffs based on their performances	Yes, occasionally	40(57.1)	27(54.0)	1.48(0.65,3.40)	.354
	Not at all	17(24.3)	17(34.0)	1	

### **The overall factors associated with Quality improvement project implementation**

After adjustments of possible confounder was done; those received Quality improvement related training were 3.74(AOR=3.74; 95%: CI (1.30, 10.70) times more likely implemented Quality improvement as compared to non-trained. Not working as a team reduced Quality improvement project implementation by (83. %) (AOR= 0.17; 95%: CI (0.04, 0.62)). Those participants who had awareness about Quality improvement was 8.39(AOR=8.39; 95%: CI (2.77, 25.40)) times more likely implemented Quality improvement as compared to their counter parts.

Hospital leaders who used data drive to decision making were 7.53(AOR=7.53; 95%: CI (2.44, 23.21)) times more likely implemented quality improvement. Staff who believed Continuous Quality improvement can contribute for improvement in their work were 1.31(1.16, 4.23) times more likely implemented quality improvement project plan as compared to those didn't believe. Recognized staffs based on their performance were 3.74(AOR=3.74; 95%: CI (1.77, 18.31)) times more likely implemented quality improvement project plan. (Table 5)

Table 5; Factors associated with Quality improvement project implementation at public hospitals of Sidama region, southern Ethiopia 2022

Variables		Category	QI implementation				P-value
			Yes (%)	No (%)	COR (95%:CI)	AOR (95%:CI)	
received Improvement training	Quality related	Yes	52(74.3)	24(48.0)	3.13(1.45,6.77)	3.74(1.30,10.70)	0.01
		No	18(25.7)	26(52.0)	1	1	
health staff cooperate and work as a team		Yes	60(85.7)	32(64.0)	1	1	0.01
		No	10(14.3)	18(36.0)	0.30(0.12,0.72)	0.17(0.04,0.62)	
Heath staffs aware about Quality Improvement		Yes	48(68.6)	15(30.0)	5.09(2.32,11.19)	8.39(2.77,25.40)	<0.01
		No	22(31.4)	35(70.0)	1	1	
Staff believe CQI can contribute for improvement of their work		Yes	39(55.7)	15(30.0)	2.51(1.19,5.31)	1.31(1.16,4.23)	0.03
		No	31(44.3)	35(70.0)	1	1	
Do Leaders use data to drive decision making at all levels of the organization		Ye	39(55.7)	15(30.0)	2.51(1.19,5.31)	7.53(2.44,23.21)	<0.01
		No	31(44.3)	35(70.0)	1	1	
		Yes, regularly	13(18.6)	6(12.0)	1.17(0.67,7.04)	3.74(1.77,18.31)	
recognizing based on their performances	staffs their	Yes, occasionally	40(57.1)	27(54.0)	1.48(0.65,3.40)	1.01(0.25,4.00)	0.99
		Not at all	17(24.3)	17(34.0)	1	1	

## 4.2 Discussion

The levels of Continuous quality improvement project implementation among public hospitals of Sidama region was 70(58.3%) with 95% CI (49.2, 67.5). This result is consistent as compared to Quality Improvement done in Health Facilities of Southern Nation and Nationalities People Region; the finding indicates that; (66%) of participants of the study replied that their respective health facilities implemented continuous quality improvement project (Addisu Gize 2019).

This figure is low when compared to a study done in Sri Lanka (43%) (Somatunga et al, 2015). But this magnitude is high when compared to a study done in Ethiopia (35%) health facilities implemented continuous quality improvement projects. (Wendossen et al, 2018). This discrepancy might be due to the difference of study time and assessment tool differences used for the studies.

Staffs who believed Continuous quality improvement can contribute for improvement in their work were 1.31(1.16, 4.23) times more likely implemented quality improvement project plan as compared to those didn't believe. This result was agrees with Southern Nation and Nationalities People Region; in 82% health facilities which have health Staffs who believed Continuous quality improvement can contribute for improvement in their work were 82% implemented CQI (Addisu Gize Yeshanew 2019).

After adjustments of possible confounder was done; those who received Quality improvement related training were 3.74(AOR=3.74; 95% CI (1.30, 10.70) times more likely implemented Quality improvement as compared to non-trained.

This finding is in line with study done at Sri Lanka which indicates that providing quality improvement training has an effect on CQI(Sitatunga L C 2015). But this finding contradicts another study conducted in SNNPR in which trainings doesn't have significant association with Continuous quality improvement project implementation. This might be justified by the timing of the training, quality of the training. (Wendossen et al., 2018)

Not working as a team decreased Quality improvement performance by (83. %) (AOR= 0.17; 95% CI (0.04, 0.62)). This magnitude is in line with a research done in Government Hospitals of Sri Lanka (Somatunga L C 2015). This result is also supported by a similar study



conducted in Tanzania; when team roles & responsibilities plays great roles in disputable quality improvement implementation (Eliudi 2014).

Those who had awareness about Quality improvement was 8.39(AOR=8.39; 95%: CI (2.77, 25.40)) times more likely implemented Quality improvement as compared to their counter parts. This finding was supported by study done at Primary healthcare in Australia. (Karen Gardner 2018)

Hospital leaders who used data to drive decision making were 7.53(AOR=7.53; 95%: CI (2.44, 23.21)) times more likely implemented quality improvement. This finding was in line with study done at (Addisu Gize Yeshanew 2019).

Recognized staffs based on their performance were 3.74(AOR=3.74; 95%: CI (1.77, 18.31)) times more likely implemented quality improvement project plan which was consistent with study done in Sri Lanka (Somatunga L C 2015).

## CHAPTER FIVE

### 5. Conclusion and Recommendation

#### 5.1 Conclusion

The levels of quality improvement implementation at the study area were high as compared to national figures. Multi variable analysis revealed that; trained on Quality improvement, having awareness about Quality improvement, Leaders who used data drive to decision making, Staffs who believed Continuous quality improvement can contribute for improvement in their work and staff recognition based on performance were positively associated with contentious quality improvement implementation while not working as a team reduced Quality improvement implementation.

#### 5.2 Recommendation

Based on findings from this study the following recommendations is given for quality improvement implementation:

QI related training like basic QI training and QI coaching and mentoring trainings are vital for Continuous quality improvement so capacity building training should have to give by stake holders and Sidama regional health bureau for health workers to enhance quality improvement implementation.

Hospital leaderships needs to actively and continuously engage in continuous quality improvement project implementation to foster CQI culture in the health facilities. Sidama region public hospitals should have taken measures to improve the quality of healthcare services provided by facilities across the region by helping improve their health service quality using QI methodologies.

Hospitals should give enough emphasis to staff engagement for successful continuous quality improvement project implementation.

Sidama regional health bureau needs to articulate the learnings from those hospitals and scale up the CQI work to other health facilities in the region.

Considering CQI is relatively to new Ethiopian healthcare system, more studies need to build up by this study to explore more and improve the lives of Ethiopian by providing a better healthcare service.

Ministry of Health need to address the bigger factors affecting public health facilities from implementing a continuous quality improvement project. The Ministry also need to accelerate the implementation of the national Healthcare Quality and Safety Strategy at large.

## References

- Addisu Gize, Nebiyou Wendwessen, Dereje Teklemariam, 2019. Factors affecting Implementation of Continuous Quality Improvement in Health Facilities in Southern Nation and Nationalities People Region (SNNPR)'.  
Ali Mohammed Mosadeghrad. Factors influencing healthcare service quality *Int J Health Policy Manag.* 2014 Jul; 3(2): 77–89.  
Amaratunga T, Dobranowski J. Systematic Review of the Application of Lean and Six Sigma Quality Improvement Methodologies in Radiology. *J Am Coll Radiol.* 2016 Sep;13(9):1088-1095.e7  
Anell, A. (2005) Swedish health care under pressure. *Health Economics*, 14, 237-254  
Apker et al. (2007) Communicating in the “gray zone”: perceptions about emergency physician/hospitalist handoffs & patient safety. *Aca Emerg. Med.* 14(10), 884-94  
Bekele, H., 2011. Ergonomic hazard and risk assessment of Ethiopian leather shoe factory (case study at Anbessa leather shoe factory), Addis Ababa: Unpublished term paper  
Beshah, B., 2011. Quality Management and Engineering Practice and the Challenges in Ethiopia, Addis Ababa: Addis Ababa University (PhD Dissertation).  
Bessant, J., Caffyn, S. & Gallagher, M. (2001) Evolutionary model of continuous improvement behavior. *Technovation*, 21, 67-77  
Batalden, P. B. & Davidoff, F. (2007) What is “quality improvement” and how can it transform the healthcare? *Quality and Safety in Health Care*, 16, 2-3  
Cheng & Heng, 2002. A Construction partnering process and associated critical success factors: quantitative investigation. *Journal of Management in Engineering*, Vol., 18(4), pp. 194-203.  
Chou VB, Walker N, Kanyangarara M (2019) Estimating the global impact of poor quality of care on maternal and neonatal outcomes in 81 low- and middle-income countries: A modeling study. *PLOS Medicine* 16(12): e1002990. <https://doi.org/10.1371/journal.pmed.1002990>  
Coleman et al. (2004) Lost in Transition: Challenges and Opportunities for Improving the quality of Transitional Care, *Ann Intern Med.* 140:533-36.

- Dahlgaard, J.J., Pettersen, J. & Dahlgaard-Park, S.M. (2011) Quality and lean health care: A system for assessing and improving the health of healthcare organizations. *Total Quality Management and Business Excellence*, 22(6), 673-689
- Dean, J.W. & Bowen, D.E. (1994) Management theory and total quality: improving research and practice through theory development. *Production & Operations Management Review*, 19(3), 392-418
- Denise A. Van Valkenburgh, Implementing Continuous Quality Improvement at the Facility Level, *Advances in Renal Replacement Therapy*, Volume 8, Issue 2, 2001, Pages 104-113, ISSN 1073-4449, <https://doi.org/10.1053/jarr.2001.23989>.
- Deming, W.E. (2000). *Out of the Crisis*. Cambridge, MIT Press
- Donabedian, A. (2003) *An Introduction to Quality Assurance in Health Care*. Oxford, Oxford University Press
- Edwards, P. J., Huang, D.T., Metcalfe, L. N., & Sainfort, F. (2008). Maximizing your investment in EHR: Utilizing EHRs to inform continuous quality improvement. *Journal of Healthcare Information Management*, 22(1), 32–37
- Ethiopian National Healthcare Quality and Safety Strategy (NQSS) 2021-2025 (2013-2017 EFY)
- FMOH web site: [www Federal ministry of health, Ethiopia.org](http://www.federalministryofhealth.gov.et), accessed; April 25, 2018
- Fixen, D.L., Naom, S.F., Blase, K.A., Friedman, R.M. & Wallace, F. (2005) *Implementation Research: A Synthesis of the Literature*. Tampa, Florida, University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231)
- Griffin P, Nembhard H, DeFlitch C, Bastian N, Kang H, Muñoz D. *Healthcare systems engineering*. Hoboken: Wiley; 2016.
- Grol, R. (2001) Improving the Quality of Medical Care: Building Bridges Among Professional Pride, Payer Profit, and Patient Satisfaction. *JAMA*, 286(20), 2578-2585
- Horwitz et al. (2008) Dropping the Baton: A qualitative analysis of failures during the transition from emergency department to inpatient care. *Annals of Emergency Med*. Article in press, accessed April 21, 2018

Horwitz et al. (2009) Evaluation of an Asynchronous Physician Voicemail Sign-out for Emergency Department Admissions. *Annals of Emergency Med.* In press, accessed April 21, 2018.

Hackman, J.R. & Wageman, R. (1995) Total Quality Management: Empirical, Conceptual, and Practical Issues. *Administrative Science Quarterly*, 40, 309-342

Health Foundation website, available at <http://www.health.org.uk/>, accessed May 02, 2018

IOM (Institute of Medicine). (2001) *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, D.C., National Academy Press

Idvall, E. (2013, Ed.) *Kvalitetsindikatorer inom omvårdnad* (in Swedish). Stockholm, SFS och Gothia förlag

JCAHO. *Improving Handoff Communications: Meeting National Patient Safety Goal 2E*. *Joint Perspectives on Patient Safety*. 2006; 6(8): 9-15.

Jones B, Vaux E, Olsson-Brown How to get started in quality improvement. *BMJ*2019;364:k5408. doi:10.1136/bmj. k5437 pmid:30655245 FREE Full Text Google Scholar

John W. Peabody, et al. *Improving the Quality of Care in Developing Countries; Disease Control Priorities in Developing Countries; 2006- NCBI Bookshelf.htm* accessed date: May 10, 2018)

Joint Commission on Accreditation of Healthcare Organizations. *Sentinel event root causes*. *Jt Comm Perspect Patient Saf.* 2005; 5(7):5–6.

Karen Gardner, Beverly Sibthorpe, Ginny Sargent, Michelle Dowden and Dan Daniel McAullay 2018. 'R E S E A R C H A R T I C L E Open Access Implementation of continuous quality improvement in Aboriginal and Torres Strait Islander primary health care in Australia: a scoping systematic review'.

Kohn, L.T., Corrigan, J.M. & Donaldson, M.S. (2000, Eds.) *To Err Is Human: Building a Safer Health System*. Washington, D.C., IoM and National Academy Press

Lau, H., 2001. The soft foundation of the critical success factors on TQM implementation in Malaysia. *The TQM Magazine*, 13(1), pp. 51-60.

Liu JJ, Raskin JS, Hardaway F, Holste K, Brown S, Raslan AM. Application of Lean Principles to Neurosurgical Procedures: The Case of Lumbar Spinal Fusion Surgery, a Literature Review and Pilot Series. *Oper Neurosurg* (Hagerstown). 2018 Sep 01;15(3):332-340

Mary Dixon-Woods, Sarah McNicol and Graham Martin (2012). Ten challenges in improving quality in healthcare: lessons from the Health Foundation's programme evaluations and relevant literature, *BMJ Qual Saf* published online, doi: 10.1136/bmjqs-2011-000760

National Institute of Standards and Technology (NIST), 2017, Baldrige Performance Excellence Program, Available at: <https://www.nist.gov/baldrige>

NHS England. NHS five year forward view. England: NHS; 2014

Nolte, E. & McKee, M. (2003) Measuring the health of nations; analysis of mortality amenable to health care. *BMJ*, 327

Owens et al. (2008) Improvement Report: Improving Resident-to-Resident Patient Care Handoffs, *IHI.org*, accessed April 29, 2018.

Riley, W.J., Moran, J.W., Corso, L.C., Beitsch, L.M., Bialek, R. & Cofsky, A. (2010) Defining Quality Improvement in Public Health. *Journal of Public Health Management and Practice*, 16(1), 5-7

Ronda G. Hughes. Chapter 44. Tools and Strategies for Quality Improvement and Patient Safety; 2008

Runy, Lee Ann (2008) Patient Handoffs, pitfalls and solutions of transferring patients safely from one caregiver to another. *H&HN.com*, accessed April 29, 2018.

Sanchez, L., and B. Blanco. 2014. "Three Decades of Continuous Improvement." *Total Quality Management & Business Excellence* 25 (9–10): 986–1001. doi:<https://doi.org/10.1080/14783363.2013.856547>. [Taylor & Francis Online], [Web of Science ®], [Google Scholar]

Schroeder, R.G., Linderman, K. & Zhang, D. (2005) Evolution of Quality: First Fifty Issues of Production and Operations Management. *Production and Operations Management*, 14(4), 468-481

SFGH website; <http://sfghed.ucsf.edu/Index.htm>, accessed April 21, 2018.

Sinha et al. (2007) Need for standardized sign-out in the emergency department: a survey of emergency medicine residency and pediatric emergency medicine fellowship program directors. *Aca Emerg Med.*; 14(2) 192-6.

Somatunga L et., 2015. 'Factors Influencing Continuous Quality Improvement Programme In Government Hospitals Of Sri Lanka'. Solet et al. (2005) Lost in Translation: Challenges and Opportunities in Physician-to-Physician Communication During Patient Handoffs. *Academic Medicine*; Volume 80 - Issue 12

SUNHEE LEE, KUI-SON CHOI, HYE-YOUNG KANG, WOOHYUN CHO, YOO MI CHAE, Assessing the factors influencing continuous quality improvement implementation: experience in Korean hospitals, *International Journal for Quality in Health Care*, Volume 14, Issue 5, October 2002, Pages 383–391, <https://doi.org/10.1093/intqhc/14.5.383>

Tricco AC, Ivers NM, Grimshaw JM, Moher D, Turner L, Galipeau J, et al. Effectiveness of quality improvement strategies on the management of diabetes: a systematic review and meta-analysis. *Lancet* (2012) 379(9833):2252–61. doi:10.1016/S0140-6736(12)60480-2



# Appendix

## Introduction

My name is \_\_\_\_\_. I am working with Abdu Abera who is doing research for the partial fulfillment of Master of Arts in Project management degree at Addis Ababa University, School of commerce. This questionnaire is intended collect the necessary information to identify contributing factors affecting continuous quality improvement projects in public health hospitals, for a partial fulfillment of the requirements of Master of Arts in Project management programme at Addis Ababa University, School of commerce.

Study title: Factors Affecting Continuous Quality Improvement Project Implementation in Public Hospitals of Sidama Region, Southern Ethiopia, 2022

The name of participants won't be written, and the answers will be kept completely confidential. You giving an honest response to each question will help me understand better which factor most important for implementing continuous quality improvement projects and to identify problems related to such issues and finally to bring the possible intervention to tackle the problem. The findings of this study could help in designing priority intervention strategies that improve continuous quality improvement project implementation. I would like to appreciate your truthful participation in filling the questionnaire.

## Questionnaire

<b>Part I: Socio Demographic Characteristics of the Respondent</b>			<b>Remark</b>
<b>S. No</b>	<b>Questions</b>	<b>Response items</b>	
101	Sex of the Participant	1. Male 2. Female	
102	Age of the Participant	_____	
103	Profession of the Participant	1. Midwife 2. Nurse 3. Public Health Officer 4. Physician 5. HIT 6. Other Specify _____	
104	Educational level of the Participant	1. Diploma 2. Degree 3. Postgraduate	
105	Current Working Department of the Participant	1. Clinical Governance and Quality Unit 2. OPD/IPD 3. HMIS 4. MCNH 5. Other, specify _____	
106	Working experience in year?	_____ -	
107	Did you take any QI related QI training	Yes No	
<b>Factors affecting implementations of continuous quality</b>			

<b>improvement project in the health facilities</b>			
<b>Part II- Staff Engagement</b>			
201	Who do you think is responsible for Quality Improvement Project implementation	<ol style="list-style-type: none"> <li>1. QI team members</li> <li>2. Leadership</li> <li>3. Every staff member</li> <li>4. Clinical audit team members</li> </ol>	
202	In your hospital does health staff make changes that will improve the Quality Improvement work?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. I don't know</li> </ol>	
203	In your health facility does health staff willingly cooperate and work as a team?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>	
204	Do you believe staffs are contributing to Quality Improvement project implementation	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. I don't know</li> </ol>	
205	Are staffs focused on the quality of patient care, and confident in their ability to improve quality of care	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>	
206	Does your hospital health staff aware of external quality improvement expertise for additional support?	<ol style="list-style-type: none"> <li>1. Yes, and utilized QI expertise</li> <li>2. Yes, but not utilized</li> <li>3. Not aware at all</li> <li>4. I don't know</li> </ol>	
<b>Part III: Leadership engagement</b>			
301	Do you believe your facility include Quality	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>	

	Improvement agenda in board meeting adequately?	I don't know	
302	Do facility Leaders use data to drive decision making at all levels of the organization- Evidence based care/EBC	1. Yes 2. No 3. I don't know	
303	Did the health facility leadership engaged in preparing the facility's Quality Improvement Project plan	1. Yes 2. No	
304	In how many Quality Improvement projects, the hospital leadership design with Quality Improvement teams to improve the service in the last one year?	1. None 2. In some 3. In all	
305	Do Senior management team/SMT approve Quality Improvement Projects before initiation and for graduation/celebration	1. Yes 2. No	
306	Does the hospital leadership share updated information about health facility service delivery status?	1. Yes 2. No 3. I don't know	
307	Does the hospital leadership encourage learning that will help employees advance their knowledge?	1. Yes 2. No 3. I don't know	
308	Do the hospital leadership use Quality Improvement	1. Not at all 2. Yes, during QI meeting	

	dashboard/ key performance indicators (KPI) for decision making and to share information about service delivery?	3. Yes, during performance review	
309	Do hospital leaders allocate necessary resources like adequate time, trained manpower, equipment, and budget for Quality Improvement projects to be successful.	1. Not allocated 2. To some extent 3. Allocate enough Resource	
<b>Part IV- Clinical Governance and QI Team Functionality</b>			
401	Do you believe the Composition of the Quality Improvement team members in your hospital is based on the merits of Quality Improvement project's objective.	1. Yes 2. No 3. I don't know	
402	Do you think your hospital's Quality Improvement team performance is being regularly tracked for progress and accomplishments of expected outcomes?	1. Yes 2. No 3. I don't know	
403	Do you think your hospital's QI team members complete tasks and meet commitments	1. Yes 2. No 3. I don't know	
404	Do you think your hospital	1. Yes	

	have a multidisciplinary QI team capable of carrying out the QI work?	2. No	
405	Do your facility's QI teams use data to solve problems and overcome barriers	1. Yes 2. No 3. I don't know	
406	Does your organization have a sub-QI team as required by its level/per each department	1. Yes 2. No	
407	Do you think sub- QI teams are able to plan and execute QI projects by themselves	1. Yes 2. No	
408	How often does the facility teams use quality improvement methods or tools	1. Never 2. Somewhat Often (Less than once a year) 3. Often (Several times a year but less than once a month) 4. Very Often (Once a month or more frequently)	
<b>Part V- Clinical Audit</b>			
501	Do you know there is a clinical audit team in your hospital?	1. Yes 2. No 3. I don't know	
502	Do you think your facility has conducted regular clinical audit to identify Quality gaps in the last one year?	1. Yes 2. No	
503	Which tool your facility uses for audit	1. HSTQ 2. Customized audit tool	

		3. Donabedian framework-based audit tool 4. Other	
504	Most of the time, when your hospital Clinical audit team conducts clinical audits?	1. When there's death 2. When there's near miss 3. Regularly 4. Not conducting audits at all	
505	Does your Hospital Quality Improvement team uses the results of the clinical audit to design QI Projects	1. Yes 2. No	
<b>Part VI- QI Coaching and Mentoring</b>			
601	Do you think your hospital have enough trained Quality improvement coaches for QI Coaching and mentoring	1. Yes, have enough 2. Yes, but not enough 3. No	
602	Does Quality Improvement coaches have experience of using the different quality improvement tools like driver diagram/Fish bone, forcefield analysis, prioritization matrix, run chart/Control Chart while coaching?	1. Yes, sometimes 2. Yes, always 3. Not at all	
603	Do you think your facility is getting enough virtual/onsite Quality	1. Yes 2. No 3. I don't know	

	Improvement coaching from different organizations?		
604	Which type of Quality Improvement coaching and mentoring your organization received in the last one year?	<ol style="list-style-type: none"> <li>1. Yes, Onsite</li> <li>2. Yes, Virtual</li> <li>3. Yes, both Onsite and virtual</li> </ol>	
605	Which organizations do you think give adequate and competent Quality Improvement coaching and mentoring	<ol style="list-style-type: none"> <li>1. RHB QI coaches</li> <li>2. MOH QI Experts</li> <li>3. Partners/NGOs</li> <li>4. Lead Hospitals</li> </ol>	
<b>Part VII- System readiness for improvement</b>			
701	Does Quality improvement activities included in your facility's staff job description?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>	
702	Do you know your hospital have a quality improvement project plan?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. I don't know</li> </ol>	
703	Does your hospital have adequate number of trained staff on Continuous Quality Improvement project implementation	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. I don't know</li> </ol>	
704	Do you think enough working hours allocated for Quality Improvement team members to engage in Quality Improvement activities per week?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>	
705	Does your health facility	<ol style="list-style-type: none"> <li>1. Yes</li> </ol>	



	have client feedback and compliant receiving mechanisms like feedback box, client compliant handling officer, customer satisfaction survey, and involving community members in Quality Improvement team	2. No	
706	Do you think the health care decision makers knowledgeable about the type and availability of organizational resources required for implementation of Quality Improvement projects	1. Yes 2. No 3. I don't know	
707	Does Senior Physicians and clinicians support the Quality Improvement work as expected from them	1. Yes, as expected 2. Yes, but sometimes 3. Not at all	
<b>Part VIII: Knowledge Management</b>			
801	Do you know effective use of Knowledge management increases the success of quality improvement Projects?	1. Yes 2. No	
802	Does your organization focus on processes of creating and sharing knowledge and the cultural technical foundations that support Quality	1. Yes, sometimes 2. Yes, Always 3. Not at all	

	Improvement?		
803	Does your hospital have a platform to facilitate the flow of knowledge from where it resides, to where it is required for achieving the organization's objectives?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>	
804	Does your organization have a strategy for identifying, capturing, and leveraging knowledge to enhance competitiveness	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. I don't know</li> </ol>	
<b>Part IX- Performance Measurement, analysis, and Performance appraisal</b>			
901	Do your colleagues know how to measure the quality and performance of the work they have done?	<ol style="list-style-type: none"> <li>1. Yes, all of them</li> <li>2. Yes, some of them</li> <li>3. None</li> <li>4. I don't know</li> </ol>	
902	In your institution do health staffs know how to analyze and review the quality of their work to see if changes are needed?	<ol style="list-style-type: none"> <li>1. Yes, all staffs</li> <li>2. Yes, some staffs</li> <li>3. None</li> <li>4. I don't know</li> </ol>	
903	In your hospital do staffs use these analyses of their quality of work to make decisions about their work?	<ol style="list-style-type: none"> <li>1. Yes, all staffs</li> <li>2. Yes, some staffs</li> <li>3. Not at all</li> <li>4. I don't know</li> </ol>	
904	In your health facility do health staffs get the information they need to know how the Hospital is	<ol style="list-style-type: none"> <li>1. Yes, all staffs</li> <li>2. Yes, some staffs</li> <li>3. Not at all</li> <li>4. I don't know</li> </ol>	

	doing?		
905	Do your facility recognize staffs based on their performances and achievements?	<ol style="list-style-type: none"> <li>1. Yes, regularly</li> <li>2. Yes, occasionally</li> <li>3. Not at all</li> </ol>	
906	Are your hospitals promotion and growth opportunities based on work performance and achievements?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. I don't know</li> </ol>	