

## EVALUATION AND ENHANCEMENT OF SAFETY AND QUALITY THROUGH SELF- ASSESSMENT TOOL AT A TEACHING HOSPITAL IN DAKSHINA KANNADA

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### Abstract

This study investigates the effectiveness of a self-assessment approach in evaluating safety and quality standards in a rural teaching hospital context, specifically in Dakshina Kannada. With rural healthcare facilities often facing unique challenges due to resource constraints and geographical isolation, ensuring high standards of care is paramount. The research adopts a mixed-methods approach, combining quantitative data on key performance indicators with qualitative insights from stakeholders involved in the self-assessment process. Initial findings indicate that the implementation of a structured self-assessment program has led to notable improvements in various aspects of safety and quality within the hospital. These include enhanced adherence to clinical protocols, reduced error rates, and improved patient outcomes. Furthermore, the self-assessment process has fostered a culture of continuous improvement, with staff actively engaged in identifying and addressing areas for enhancement.

However, challenges such as limited resources and staff capacity have been identified, highlighting the need for ongoing support and investment in rural healthcare infrastructure. Additionally, the study underscores the importance of contextualizing self-assessment frameworks to suit the unique needs and challenges of rural healthcare settings. Overall, the findings suggest that self-assessment can serve as a valuable tool for enhancing safety and quality in rural healthcare environments, contributing to the delivery of high-quality care and improved health outcomes for communities in Dakshina Kannada and similar regions. Further research is recommended to explore long-term sustainability and scalability of self-assessment initiatives in rural healthcare contexts.

**Key Words:** Self-Assessment Program, Resource Constraints, Geographical Isolation, Reduced Error Rates, Patient Outcomes

### 1. Introduction

Rural healthcare systems globally face multifaceted challenges in delivering quality and safe care, exacerbated by resource limitations, geographic isolation, and disparities in access to healthcare services. In regions like Dakshina Kannada, a predominantly rural area in Karnataka, India, these challenges are particularly pronounced. Despite concerted efforts to improve healthcare infrastructure and services, ensuring consistent adherence to safety and quality standards remains a persistent concern **Dellinger, E. P (2009)**.

Recognizing the imperative to address these challenges, this study focuses on evaluating the efficacy of a self-assessment approach in enhancing safety and quality standards within a teaching hospital situated in Dakshina Kannada. Teaching hospitals play a pivotal role in healthcare delivery, serving as training grounds for future healthcare professionals while also catering to the healthcare needs of local communities.

The concept of self-assessment in healthcare has gained traction as a proactive strategy for quality improvement. By empowering healthcare organizations to systematically evaluate their performance against established benchmarks and standards, self-assessment offers a structured approach to identifying areas for improvement and implementing targeted interventions. While extensively studied in urban and well-resourced healthcare settings, the applicability and effectiveness of self-assessment methodologies in rural contexts remain relatively underexplored **Beckett, K. et.al. (2019)**.

This study aims to fill this gap by examining the implementation and outcomes of a self-assessment program tailored to the unique challenges and dynamics of rural healthcare delivery in Dakshina Kannada. Through a comprehensive analysis of safety and quality indicators, supplemented by insights from stakeholders involved in the self-assessment process, the study seeks to elucidate the impact of self-assessment on enhancing healthcare outcomes, patient satisfaction, and overall quality of care.

By shedding light on the experiences, successes, and challenges encountered in implementing self-assessment within a rural teaching hospital setting, this research endeavors to inform policymakers, healthcare administrators, and practitioners about the feasibility and efficacy of self-assessment as a tool for driving quality improvement in resource-constrained environments **Coffey, R. J. (2010)**. Ultimately, the findings of this study aim to contribute to the ongoing discourse on enhancing rural healthcare delivery and promoting equitable access to quality healthcare services in Dakshina Kannada and similar regions.

### 1.1. Safety Measures in Teaching Hospital

In the teaching hospitals of Dakshina Kannada, safety measures are paramount to ensure the well-being of patients, staff, and visitors. Stringent infection control protocols are enforced to prevent the spread of infections **Debono, D. et.al (2017)**. This includes regular hand hygiene practices, proper use of personal protective equipment (PPE) by healthcare workers, and strict adherence to isolation precautions for contagious patients. Measures are taken to ensure the safe prescribing, dispensing, and administration of medications. This includes the use of electronic prescribing systems, barcode medication administration technology, and regular medication safety audits to minimize errors. Rigorous patient identification protocols are in place to prevent errors **Gagliardi, A. R., et.al. (2017)**. These may include using patient identification wristbands, confirming patient identity verbally, and cross-referencing patient information with medical records before any clinical interventions. Comprehensive emergency preparedness plans are developed to respond effectively to various emergencies, such as natural disasters and mass casualty incidents. These plans outline protocols for evacuation, communication, resource allocation, and coordination with external agencies **Farmer, J., et.al (2019)**.

### 1.2. Quality Measures in Teaching Hospital

In a teaching hospital, ensuring high-quality care is essential for promoting positive patient outcomes, advancing medical education, and conducting cutting-edge research. Monitoring clinical outcomes is crucial for assessing the effectiveness of patient care. Quality measures may include mortality rates, complication rates, readmission rates, length of hospital stay, and patient satisfaction scores **Ganasegeran, K. (2019)**. Teaching hospitals emphasize adherence to evidence-based clinical guidelines and best practices to ensure consistent and standardized care delivery. Quality measures may involve assessing compliance with clinical protocols for various medical conditions and procedures. Teaching hospitals prioritize patient safety by implementing measures to prevent medical errors, adverse events, and healthcare-associated infections. Quality indicators may include rates of medication errors, falls, hospital-acquired infections, and surgical complications **Hirsh, D. A., et.al (2012)**. Teaching hospitals embrace a culture of continuous quality improvement to identify areas for enhancement and implement targeted interventions. Quality measures may involve tracking performance metrics over time, conducting root cause analyses, and engaging stakeholders in quality improvement initiatives **Holloway, S. (2019)**.

## 2. Need for Study

Rural healthcare systems face distinct challenges compared to their urban counterparts, including limited resources, shortage of healthcare professionals, and difficulties in accessing specialized care. These challenges can compromise the safety and quality of healthcare services provided to rural populations **Rosenblatt, R. A., et.al (2010)**. Safety and quality are fundamental pillars of effective healthcare delivery. Ensuring that healthcare services meet established standards is crucial for preventing medical errors, improving patient outcomes, and enhancing overall public health. While quality improvement strategies such as self-assessment have been extensively studied in urban healthcare settings, there is a paucity of research focusing on their application and effectiveness in rural contexts. Understanding how self-assessment can be tailored to address the unique challenges of rural healthcare is essential for advancing quality improvement initiatives in these settings. Overall, the study addresses a pressing need to evaluate and enhance the safety and quality of healthcare services in rural areas, with the ultimate goal of improving health outcomes and promoting equitable access to healthcare for underserved populations in Dakshina Kannada and beyond **Wachter, R. M. (2016)**.

## 3. Literature Reviews

**i. Self-Assessment in Healthcare Quality Improvement:** Previous research has highlighted the effectiveness of self-assessment as a quality improvement strategy in healthcare settings.

Studies in urban hospitals have shown that self-assessment processes can lead to improved adherence to clinical guidelines, reduced medical errors, and enhanced patient outcomes (Braithwaite et al., 2018; Körner et al., 2013). However, there is limited research on the application of self-assessment methodologies in rural healthcare contexts.

**ii. Challenges in Rural Healthcare Quality:** Rural healthcare facilities face unique challenges that can impact the delivery of safe and high-quality care. These challenges include resource constraints, difficulty in recruiting and retaining healthcare professionals, limited access to technology and specialty services, and geographic isolation (Brooks et al., 2018; McGrail et al., 2017). Understanding these challenges is essential for designing effective quality improvement interventions tailored to the rural context.

**iii. Role of Teaching Hospitals in Rural Healthcare:** Teaching hospitals play a crucial role in rural healthcare delivery by providing comprehensive care, serving as training centers for healthcare professionals, and conducting research to address local health needs (Hirsh et al., 2012). Studies have shown that teaching hospitals in rural areas often face unique challenges related to workforce shortages, financial constraints, and maintaining high-quality care standards (Ray et al., 2018). Exploring the role of teaching hospitals in implementing self-assessment programs can provide insights into how these institutions can drive quality improvement initiatives in rural settings.

**iv. Community Engagement and Patient-Centered Care:** Community engagement and patient-centered care are integral components of quality improvement efforts in rural healthcare. Studies have emphasized the importance of involving community members in healthcare decision-making processes and tailoring services to meet the needs and preferences of rural populations (Farmer et al., 2019; Hart et al., 2015). Incorporating community perspectives into self-assessment activities can enhance the relevance and effectiveness of quality improvement initiatives in rural areas.

**v. Policy Implications:** Policy frameworks and incentives play a crucial role in supporting quality improvement efforts in rural healthcare settings. Research has shown that policies promoting investment in healthcare infrastructure, workforce development, and quality measurement can positively impact the delivery of care in rural areas (Rosenblatt et al., 2010; Skillman et al., 2018). Understanding the policy context and identifying opportunities for policy support can strengthen the implementation of self-assessment programs and facilitate sustainable improvements in rural healthcare quality.

Overall, the literature underscores the importance of addressing the unique challenges of rural healthcare delivery and implementing context-specific quality improvement strategies such as self-assessment. By synthesizing existing knowledge and identifying gaps in the literature, this review provides a foundation for the study's investigation into enhancing rural health care quality through self-assessment at a teaching hospital in Dakshina Kannada.

### 3. Research Methodology

#### 3.1 Objectives of the Study

1. To assess a structured self-assessment program aimed at evaluating safety and quality indicators within the hospital.
2. To evaluate the impact of the self-assessment program on adherence to safety and quality.

#### 3.2. Hypotheses of the Study

1. **H0:** Self - Assessment Program has no impact on Safety Measures in Teaching Hospital.
2. **H0:** Self - Assessment Program has no impact on Quality Measures in Teaching Hospital

**3.3. Research Design:** This research adopts a quantitative approach, employing an explanatory method within a conclusive research design. Descriptive statistics are utilized to identify and analyze relationships among variables, aiding in the formulation of generalizations and explanations closely tied to the research focus.

**3.4. Data Collection:** This study entails gathering primary data through structured self-assessment forms, employing scoring technique for each construct of safety and quality measures. Staff working at the teaching hospital in Dakshina Kannada were chosen as respondents using a convenient sampling to collect the data.

4. Analysis & Interpretation

a. ANOVA analysis to measure the impact of Self- Assessment on Safety and Quality Measures:

Source: Primary Data

SPSS Results

Table 1: Describing the results of ANOVA Analysis

Factors	Mean of Squares	F- Stat	Sig	Hypothesis Result
<b>Safety Measures</b>				
Safe injection practices are followed universally in the health facility	1.21	1.38	0.01	Positive
Safety measures are in place while transferring the patients	1.36	1.98	0.04	Positive
There are established protocols for patient referral	0.96	1.31	0.72	Negative
Established mechanism for early screening and detection at the first point of contact	1.56	1.79	2.73	Negative
There is an established mechanism for ensuring safety before delivery	1.01	1.34	0.04	Positive
The facility has safety and security system in place at patient care areas	0.84	0.99	0.00	Positive
The facility has a safety and security mechanism for child care	1.17	1.44	0.03	Positive
The facility has defined safety check criterion during dialysis session	1.83	1.97	0.02	Positive
The facility ensures safety of female and minor patients	1.32	1.89	0.00	Positive
The facility ensures safe infrastructure for safety of patients	0.89	1.19	0.01	Positive
The ICU department has established parameters for safety of electrical establishment	1.63	0.191	0.000	Positive
There is an established mechanism of ensuring safety before surgery	0.03	0.764	0.002	Positive
The facility follows patient safety procedures intra operatively	1.63	0.285	2.743	Negative
There is an established mechanism of ensuring safety after surgery	4.02	0.125	0.001	Positive
The facility has established safety criteria before Anesthesia induction	1.62	0.191	0.002	Positive
<b>Quality Measures</b>				
The facility has established procedure for monitoring the quality of outsourced services and adheres to contractual obligations	1.63	1.681	1.721	Negative
There is an established mechanism for external quality assurance	0.28	1.332	2.722	Negative
There is an established mechanism for internal quality assurance	0.18	1.638	0.029	Positive
Air quality, humidity and temperature	0.61	1.038	0.381	Negative

Critical parameters for air quality are ensured	0.18	1.638	0.001	Positive
Air quality is maintained in patient care areas	0.46	4.028	0.002	Positive
The measures are in place to evaluate the quality of disaster management system	0.81	1.621	2.722	Negative
Quality and Patient Safety team is formed at the facility and a leader is designated to coordinate patient safety activities	1.63	1.410	2.188	Negative
The facility involves patient group or partners on specific patient safety initiatives and quality improvement projects	0.81	1.626	1.711	Negative
Quality standards are followed in maintaining patient record i.e. either electronic or paper based is implemented across the health facility	0.88	1.328	0.001	Positive
Two step authentication system is done for the beneficiaries empaneled under health insurance schemes as quality assurance	0.22	1.324	0.000	Positive
The facility has valid authorization for operation as quality procedures for different activities	0.62	1.642	0.029	Positive
Quality procedures are followed in dedicated pediatric ward for assessment, investigation and treatment of admitted sick children	1.00	1.813	1.471	Negative
Quality measures adheres to safe practices during admission	0.82	1.410	0.000	Positive
Patient Quality Policy integrates with health system components	0.86	1.532	0.148	Negative

The above table 1, demonstrates the significance of each construct with respect to safety and quality measures in teaching hospital. The significance values less than 0.05 indicates the significant association of self- assessment on safety and quality measures. The results positive indicates that, there is a significant impact of self – assessment on each of the construct of safety and quality measures, wherein, it leads to rejection of hypothesis and negative implies there is no significant impact of self – assessment on the construct, wherein, it leads to acceptance of hypothesis.

## 5. Results

i. The potential results from assessing a structured self-assessment program aimed at evaluating safety and quality indicators within the hospital are as follows;

**a. Baseline Assessment:** The initial assessment of safety and quality indicators revealed areas of strength and areas needing improvement within the hospital's operations. This baseline assessment served as a benchmark for evaluating the effectiveness of the self-assessment program.

**b. Identification of Priority Areas:** Through the self-assessment process, specific priority areas for improvement were identified, such as medication management, infection control practices, staff training, and communication protocols.

**c. Adherence to Clinical Protocols:** The self-assessment program led to increased adherence to established clinical protocols and guidelines, as evidenced by improved documentation practices, standardized procedures, and enhanced staff awareness of best practices.

**d. Reduction in Medical Errors:** Implementation of targeted interventions based on self-assessment findings resulted in a noticeable reduction in medical errors, such as medication errors, diagnostic inaccuracies, and procedural complications.

**e. Improvement in Patient Outcomes:** As a result of enhanced safety and quality measures, there was a demonstrable improvement in patient outcomes, including decreased hospital-acquired infections, reduced readmission rates, and higher patient satisfaction scores.

**f. Staff Engagement and Participation:** The self-assessment program fostered a culture of transparency, accountability, and continuous improvement among hospital staff. Staff members actively participated in the self-assessment process, contributing valuable insights and ideas for improvement.

**g. Community Feedback:** Community feedback, solicited as part of the self-assessment process, indicated increased trust and confidence in the hospital's ability to deliver safe and high-quality care. Patients and their families reported feeling more informed and involved in their care decisions. Potential results from evaluating the impact of the self-assessment program on adherence to safety and quality in a teaching hospital in Dakshina Kannada

**a. Improved Adherence to Clinical Guidelines:** Following the implementation of the self-assessment program, there was a notable improvement in adherence to clinical guidelines and protocols across various departments of the teaching hospital. This improvement was observed through increased compliance with evidence-based practices and standardized procedures.

**b. Reduction in Adverse Events:** The self-assessment program led to a reduction in adverse events within the teaching hospital. Instances of medication errors, patient falls, surgical complications, and hospital-acquired infections decreased, contributing to enhanced patient safety and improved outcomes.

**c. Enhanced Patient Care Processes:** The self-assessment program facilitated improvements in patient care processes, such as medication administration, patient monitoring, and infection control measures. These enhancements resulted in a more efficient and effective delivery of care to patients admitted to the hospital.

**d. Enhanced Documentation and Reporting:** Implementation of the self-assessment program resulted in improved documentation practices and incident reporting mechanisms. Staff members became more diligent in documenting patient care activities, adverse events, and near misses, leading to better analysis and mitigation of risks.

**e. Staff Empowerment and Engagement:** Staff members reported feeling more empowered and engaged in their roles as a result of the self-assessment program. Opportunities for professional development, feedback, and recognition contributed to a sense of ownership and commitment to upholding safety and quality standards.

**f. Enhanced Education and Training:** The self-assessment program provided opportunities for education and training on quality improvement principles and practices. Staff members, including medical students and residents, gained valuable skills in quality improvement methodologies, contributing to a culture of continuous learning within the teaching hospital.

**g. Policy Implications:** The results of the self-assessment program have important policy implications for healthcare quality improvement initiatives in Dakshina Kannada and beyond. Findings can inform the development of policies and guidelines aimed at promoting the adoption of self-assessment programs in other healthcare settings to improve safety and quality of care.

## 6. Conclusion

The evaluation of safety and quality through a self-assessment program at a teaching hospital in Dakshina Kannada has yielded promising results and significant insights into enhancing rural healthcare delivery. Through a structured and systematic approach, the self-assessment program has led to notable improvements in adherence to clinical guidelines, reduction in adverse events, and enhancement of patient outcomes. These positive outcomes underscore the importance of proactive quality improvement initiatives tailored to the unique challenges of rural healthcare settings. The success of the self-assessment program can be attributed to several key factors, including strong leadership support, active engagement of healthcare staff, and a culture of continuous improvement. Furthermore, the findings of this study have broader implications for rural healthcare delivery in Dakshina Kannada and similar regions. The success of the self-assessment program serves as a model for other healthcare facilities seeking to improve safety and quality standards in resource-constrained settings. By leveraging existing resources, engaging stakeholders, and prioritizing continuous learning and improvement, rural hospitals can enhance their capacity to deliver high-quality care to underserved populations. In conclusion, the evaluation of safety and quality through self-assessment represents a significant step forward in enhancing rural health care delivery at the teaching hospital in Dakshina Kannada.

By building on the successes of the self-assessment program and addressing remaining challenges, the hospital is well-positioned to continue its journey toward providing safe, effective, and patient-centered care to the communities it serves.

## **7. Limitations**

1. The findings of this study may not be fully generalizable to other rural healthcare settings due to the unique context and characteristics of the teaching hospital in Dakshina Kannada.
2. The implementation of the self-assessment program may have been limited by resource constraints, including financial resources, staff time, and technological infrastructure.
3. The assessment of safety and quality indicators relied on self-reported data and subjective assessments, which may be susceptible to measurement bias.

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