

Original Research Article

Quality Improvement Initiatives and Clinical Protocol Adherence in Primary Healthcare: Evidence from Three Facilities in Sunyani, Ghana

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Abstract: Quality Improvement (QI) has become a central strategy for strengthening primary healthcare systems, particularly in low- and middle-income countries where gaps between clinical guidelines and routine practice persist. This study examined the Quality Improvement initiatives implemented in three primary healthcare facilities in Sunyani, Ghana: Seventh Day Adventist Hospital, Rafchik Health Centre, and Nkrankrom Community-Based Health Planning and Services compound and explored how these initiatives influence healthcare providers' adherence to quality guidelines and protocols. A qualitative case study design was employed, guided by an interpretivist paradigm. Semi-structured interviews were conducted with twenty-one healthcare providers purposively selected for their involvement in clinical care and Quality Improvement activities. Data were analysed thematically to identify recurring patterns and meanings. The findings show that Quality Improvement activities across the facilities were organised around four main initiatives: peer review, community engagement, participation in the SafeCare programme, and the routine use of patient satisfaction surveys and clinical protocols. These initiatives focused on improving patient care, infection prevention and control, preventive health services, and operational efficiency. Healthcare providers reported that Quality Improvement initiatives contributed to better patient outcomes, smoother workflows, increased staff motivation, and improved performance in external assessments. Providers demonstrated a high level of familiarity with quality guidelines and generally strong adherence to protocols. However, full compliance was sometimes constrained by resource shortages, emergency care pressures, and the technical complexity of certain procedures. Internal supervision, peer review processes, and external inspections were identified as critical mechanisms for monitoring practice and reinforcing accountability. The study concludes that structured Quality Improvement initiatives can meaningfully strengthen primary healthcare delivery when embedded in routine practice and supported by consistent supervision. Sustaining and expanding these gains requires reliable resourcing, continuous staff development, and strong managerial support to protect protocol adherence in resource-constrained settings.

Keywords: Quality Improvement, Primary Healthcare, Safecare, Peer Review, Community Engagement, Protocol Adherence, Infection Prevention and Control, Operational Efficiency.

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1. INTRODUCTION

Quality improvement in healthcare has emerged as a central strategy for strengthening health systems and improving patient outcomes, particularly within primary healthcare settings. Globally, healthcare systems face persistent challenges related to patient safety, service efficiency, workforce capacity, and equity in access to care. These challenges are more pronounced in low- and middle-income countries, where limited resources, workforce shortages, and infrastructural constraints

undermine the consistent delivery of high-quality care. As a result, structured quality improvement initiatives have become essential mechanisms for enhancing service delivery, optimizing clinical processes, and ensuring accountability at the facility level (World Health Organization, 2018).

Quality improvement refers to the systematic and continuous actions that lead to measurable enhancements in healthcare services and patient health

outcomes. It typically involves the use of evidence-based standards, performance monitoring, feedback mechanisms, and participatory problem-solving approaches among healthcare workers and managers (Batalden & Davidoff, 2007). In primary healthcare contexts, quality improvement initiatives often focus on improving adherence to clinical guidelines, strengthening patient centered care, enhancing infection prevention and control practices, and fostering effective leadership and teamwork. Evidence suggests that well implemented quality improvement interventions can lead to reductions in medical errors, improved patient satisfaction, and better health outcomes (Dixon Woods *et al.*, 2014).

In sub-Saharan Africa, the pursuit of quality improvement has gained momentum due to growing recognition that expanding access to care alone is insufficient without corresponding improvements in care quality. Studies have demonstrated that poor quality care contributes significantly to avoidable morbidity and mortality in the region, even where service coverage is relatively high (Kruk *et al.*, 2018). Consequently, governments and development partners have increasingly promoted facility-based quality improvement models, accreditation schemes, and performance assessment tools as part of broader health system strengthening efforts. These initiatives aim to institutionalize a culture of continuous improvement and learning within healthcare facilities.

In Ghana, quality improvement has been integrated into national health policies and strategies, particularly through the Ministry of Health and the Ghana Health Service. Primary healthcare facilities, including hospitals, health centres, and Community based Health Planning and Services compounds, are expected to implement quality assurance and quality improvement activities as part of routine service delivery. These activities include peer review systems, clinical audits, standard treatment protocols, patient satisfaction surveys, and participation in external quality improvement programs such as SafeCare. Such initiatives are designed to enhance compliance with standards, improve patient safety, and promote accountability at the facility level (Ghana Health Service, 2017).

Despite the existence of these frameworks, empirical evidence suggests that the implementation and effectiveness of quality improvement initiatives in Ghanaian primary healthcare facilities remain uneven. Factors such as inadequate training, limited managerial support, workload pressures, and insufficient monitoring mechanisms have been identified as barriers to sustained quality improvement practice (Atinga *et al.*, 2011). Moreover, frontline healthcare workers' perceptions, experiences, and engagement with quality improvement initiatives play a critical role in determining whether such interventions translate into meaningful

improvements in care delivery. Understanding these perspectives is therefore essential for identifying gaps between policy intentions and practice realities.

Against this backdrop, examining existing quality improvement initiatives within primary healthcare facilities and exploring how healthcare workers perceive and experience these interventions is both timely and necessary. Such an inquiry provides valuable insights into the practical functioning of quality improvement systems at the facility level, highlights contextual enablers and constraints, and informs evidence-based recommendations for strengthening quality improvement implementation. Ultimately, enhancing the effectiveness of quality improvement initiatives is vital for improving patient outcomes, sustaining health system performance, and advancing progress toward universal health coverage in Ghana. The core problem, therefore, is not the absence of QI rhetoric or tools, but the limited understanding of how specific QI initiatives function in real-world facility contexts and how they influence day-to-day protocol adherence and healthcare delivery. Existing Ghanaian studies have tended to examine individual interventions, disease areas or district-wide programmes, rather than exploring how multiple QI processes, peer review, SafeCare standards, community engagement and protocol use, interact within the same facilities and are experienced by providers. This leaves a critical empirical gap: managers and policymakers lack detailed, context-sensitive evidence on which QI strategies are working, where implementation is weak and how protocol adherence is shaped by local organisational and resource conditions.

By focusing on three contrasting primary healthcare facilities in Sunyani, the present study responds to this gap. It evaluates the nature and perceived effects of existing QI initiatives and examines their relationship with healthcare providers' adherence to quality guidelines and the quality of care delivered at the frontline. The study aimed to evaluate the Quality Improvement (QI) initiatives implemented in Seventh Day Adventist Hospital, Rafchik Health Centre and Nkrankrom CHPS in Sunyani, Ghana, and to examine how these initiatives influence healthcare providers' adherence to clinical protocols and the delivery of primary healthcare services.

2. RELATED STUDIES

Studies from low- and middle-income countries consistently show that QI can improve care processes when interventions are clearly defined, supported by leadership, and integrated into routine supervision and data use (Garcia Elorrio *et al.*, 2019; Kaplan *et al.*, 2010). However, the same evidence also demonstrates that QI performance is highly context dependent. A major systematic review of contextual determinants concluded that organizational culture, leadership engagement, resources, and team capability can explain why similar QI strategies succeed in some facilities and

underperform in others (Kaplan *et al.*, 2010). This reinforces the argument that evaluating QI requires attention not only to outcomes but also to implementation conditions and mechanisms (Portela *et al.*, 2015).

In primary healthcare, protocol driven practice is frequently positioned as a core mechanism for improving reliability, reducing errors, and supporting evidence-based decision making. Donabedian's framework provides the theoretical rationale for this emphasis: strong structures (for example staffing, supplies, training systems) enable high quality processes (for example guideline adherence, accurate assessment, appropriate referral), which in turn influence patient outcomes (Donabedian, 1988). Empirical work in sub-Saharan Africa further shows that patient perceived quality is shaped not only by technical care but also by communication, responsiveness, and respect, implying that protocol adherence must be paired with patient centered delivery (Ogaji *et al.*, 2015). In hospital settings, QI interventions have also been shown to improve patient experiences, though results vary depending on intervention design, measurement quality, and staff engagement (Bastemeijer *et al.*, 2019).

A growing body of evidence from Ghana specifically highlights the breadth of quality related interventions and the implementation challenges that follow. Escribano Ferrer *et al.*, (2016) mapped quality interventions in Ghana and emphasized that progress depends on aligning initiatives with system capacity and sustaining implementation beyond pilot phases (Escribano Ferrer *et al.*, 2016). Community engagement has been presented as one practical pathway for strengthening accountability and responsiveness: Alhassan *et al.*, (2016) documented the design and implementation of community engagement interventions for healthcare quality improvement in Ghana, illustrating how structured participation and feedback loops can support service improvements when appropriately resourced and managed (Alhassan *et al.*, 2016). Facility level management capability is another critical determinant: Macarayan *et al.*, (2019) reported that better facility management in Ghanaian primary healthcare was associated with improvements in selected process and experiential outcomes, indicating that QI gains may be partially mediated by managerial practices that support supervision, workflow organization, and staff performance (Macarayan *et al.*, 2019).

Across LMICs, collaborative QI approaches have been evaluated for their effectiveness on a scale. A systematic review and meta-analysis found that quality improvement collaboratives can produce improvements in some process measures, but effects vary, and success often depends on data systems, coaching intensity, and contextual readiness (Garcia Elorrio *et al.*, 2019). Similarly, evidence syntheses focusing on primary healthcare highlight recurring barriers and enablers.

Odhus *et al.*, (2024) identified common constraints such as limited staffing, weak data use, inadequate training, and competing priorities, alongside enabling factors like supportive leadership, teamwork, and continuous feedback (Odhus *et al.*, 2024). In parallel, a scoping review of continuous quality improvement literature reported that multiple CQI models are used across settings, with PDSA based approaches being especially common, though implementation quality and reporting rigor are uneven (Endalamaw *et al.*, 2024).

Methodologically, there is strong agreement that QI evaluation must match the complexity of improvement work. Portela *et al.*, (2015) emphasized that improvement interventions can be studied using diverse designs including quasi experimental methods, mixed methods, process evaluations, and qualitative approaches, depending on the maturity of the intervention and the evaluation questions (Portela *et al.*, 2015). Within PDSA focused work, a systematic review of PDSA applications found variability in fidelity and documentation, warning that poorly executed cycles can limit learning and reduce the credibility of improvement claims (Taylor *et al.*, 2014). These findings support the need for careful assessment of how QI initiatives are operationalized, how protocol adherence is monitored, and what feedback mechanisms exist within facilities.

Evidence on implementation barriers also aligns with workforce and organizational behavior research. A qualitative multi-center study demonstrated that organizational context shapes QI and patient safety performance through leadership support, social norms, and local problem-solving capacity (Krein *et al.*, 2010). More recent work from African settings similarly reports that implementation barriers include weak implementation strategies, inadequate leadership skills, resistance to change, and limited resources (Nkhwashu *et al.*, 2023). These findings are consistent with broader implementation literature suggesting that intervention success improves when implementability factors (acceptability, feasibility, and fit with user needs) are explicitly addressed during design and rollout (Klaic *et al.*, 2022).

Finally, the monitoring and measurement of quality remains central, particularly in African health systems where routine information systems may not capture quality sufficiently. A study design paper on constructing a quality-of-care index for the WHO Africa Region underscores the need for stronger empirical measurement approaches that can guide policy, benchmarking, and accountability (Titi Ofei *et al.*, 2021). Facility level efforts to improve compliance with patient safety tools also demonstrate the potential of structured checklists and QI strategies but also highlight the need for sustained leadership reinforcement and staff engagement to maintain adherence (Röhsig *et al.*, 2020). Taken together, the literature indicates that QI initiatives and protocol systems can improve primary healthcare

delivery, but outcomes depend on context, management capacity, measurement systems, and the practical realities of frontline implementation (Kaplan *et al.*, 2010; Macarayan *et al.*, 2019; Odhus *et al.*, 2024). This evidence supports the rationale for evaluating how QI initiatives and protocols operate within and across facilities in Sunyani, Ghana, to identify actionable levers for strengthening routine service quality.

3. METHODOLOGY

Research Design and Paradigm

This study adopted a qualitative case study design situated within an interpretivist research paradigm. The interpretivist orientation was appropriate because the study sought to explore healthcare providers' lived experiences, meanings, and interpretations of Quality Improvement (QI) initiatives and protocol adherence within their routine work environments. Rather than measuring predefined variables, the design enabled an in-depth examination of how QI activities were understood, enacted, and perceived across different primary healthcare settings. The case study approach allowed for a holistic analysis of organisational practices within their real-life contexts, facilitating comparison across facilities operating at different levels of the Ghanaian primary healthcare system.

Study Setting

The study was conducted in three primary healthcare facilities located in Sunyani, Ghana: Seventh Day Adventist Hospital, Rafchik Health Centre, and Nkrankrom Community-Based Health Planning and Services (CHPS) compound. These facilities were purposively selected to represent different tiers of primary healthcare delivery, including a hospital, a health centre, and a community-level CHPS facility. This selection enhanced the analytical depth of the study by capturing variations in organisational structure, service scope, patient volume, and resource availability, all of which are known to influence the implementation of Quality Improvement initiatives and adherence to clinical protocols.

Study Population

The study population comprised healthcare providers working in the selected facilities who were directly involved in clinical care delivery and Quality Improvement activities. This included nurses, midwives, community health officers, and facility managers or in-charges. Focusing on providers actively engaged in service delivery and QI processes ensured that participants possessed relevant experiential knowledge regarding protocol use, supervision, and performance monitoring mechanisms within their facilities.

Sampling Technique and Sample Size

A purposive sampling strategy was employed to select participants who could provide rich, relevant, and diverse insights into the study objectives. Twenty-one healthcare providers were recruited, with equal

representation from each facility, resulting in seven participants per site. Selection criteria included involvement in Quality Improvement activities, familiarity with clinical guidelines and protocols, and willingness to participate. This approach ensured that both frontline providers and supervisory staff were included, allowing the study to capture multiple perspectives on how QI initiatives influence everyday clinical practice and adherence behaviour.

Data Collection Methods

Data was collected through semi-structured, face-to-face interviews, which allowed participants to articulate their experiences and perceptions in their own words while ensuring consistency across interviews. An interview guide was developed to explore key areas related to existing QI initiatives, protocol adherence, supervision mechanisms, perceived outcomes, and implementation challenges. The semi-structured format enabled the researcher to probe emerging issues and clarify responses as needed. All interviews were audio-recorded with participants' informed consent and supplemented with field notes to capture contextual observations and non-verbal cues relevant to the interpretation of findings.

Data Analysis

Interview recordings were transcribed verbatim and analysed using thematic analysis. The analysis followed an inductive approach, allowing themes to emerge directly from the data rather than being imposed a priori. Transcripts were read repeatedly to achieve familiarity, after which initial codes were generated to capture meaningful patterns related to Quality Improvement initiatives, protocol use, perceived impacts, and constraints. Related codes were then grouped into broader themes, which formed the basis for interpreting how QI initiatives were organised and how they shaped providers' adherence to clinical guidelines. This analytic process directly informed the thematic structure presented in the Results section, including themes such as peer review, community engagement, SafeCare participation, and the use of surveys and protocols.

Trustworthiness and Rigor

To enhance the credibility and dependability of the findings, several strategies were employed. Equal representation across facilities strengthened comparative validity, while the inclusion of multiple professional cadres supported triangulation of perspectives. Prolonged engagement with the data through repeated reading of transcripts enhanced analytical depth, and the use of verbatim quotations in the Results section ensured that interpretations were grounded in participants' accounts. Maintaining an audit trail of coding decisions and thematic development further supported transparency and analytic rigor.

Ethical Considerations

Ethical principles were strictly observed throughout the study. Informed consent was obtained from all participants after providing a clear explanation of the study's purpose, procedures, and voluntary nature. Participants were assured of confidentiality and anonymity, with identifying information removed from transcripts and reports. Audio recordings and transcripts were securely stored and accessible only to the research team. Interviews were conducted at times and locations convenient to participants to minimise disruption to clinical duties and to respect privacy. Participants were informed of their right to withdraw from the study at any stage without penalty.

4. RESULTS

Demographic Characteristics of Study Participants

The study involved twenty-one healthcare providers drawn equally from the three selected facilities. Seventh Day Adventist Hospital contributed 7 (33.3%) participants, Rafchik Health Centre also contributed 7 (33.3%), and Nkrankrom CHPS compound likewise contributed 7 (33.3%). This equal representation ensured that each facility's experiences were fairly captured, allowing meaningful comparisons across the different service delivery levels. The inclusion of a hospital, a health centre, and a CHPS compound enhanced the depth of the data by reflecting variations in capacity, workload, and organisational structures influencing Quality Improvement (QI) implementation.

In terms of gender distribution, female participants formed the majority, representing 13 (61.9%) of the sample, while male participants accounted for 8 (38.1%). This distribution reflects the gender profile commonly observed in Ghana's primary healthcare sector, where nursing, midwifery, and community health roles are predominantly occupied by women. Despite their smaller number, the male participants provided important insights from their respective clinical and supervisory positions. This gender composition ensured that perspectives from both male and female healthcare providers were incorporated into the study's examination of QI activities and adherence to quality guidelines.

Participants represented a variety of professional categories. Nurses formed the largest group with 9 (42.9%) participants, midwives accounted for 5 (23.8%), and community health officers also constituted 5 (23.8%). Facility managers or in-charges represented 2 (9.5%) of the participants. This diverse professional mix enriched the findings by capturing the experiences of staff involved in direct patient care as well as those responsible for administrative oversight and quality monitoring. Including multiple cadres enabled a holistic understanding of how QI initiatives are perceived and operationalised across different roles within the facilities.

Years of professional experience varied considerably among participants. Those with fewer than five years of experience were 6 (28.6%), while the majority, 9 (42.9%), had between five and ten years of experience. A further 6 (28.6%) reported more than ten years in practice. This distribution supported a balanced view of perspectives across early-career, mid-career, and senior staff. The variation in experience allowed the study to capture reflections on changes in quality assurance practices over time, familiarity with guidelines, and the perceived effectiveness of QI initiatives at different stages of professional development.

Research Question One: What quality improvement initiatives exist in Seventh-Day Adventist Hospital, Rafchik Health Centre and Nkrankrom CHPS Compound?

The responses from participants revealed a range of Quality Improvement (QI) initiatives currently implemented across the three facilities. The findings were organised under three major themes: Existing QI initiatives, Focus areas of QI, and Impact of QI initiatives.

Theme 1: Existing QI Initiatives

Peer Review

Peer review emerged as a key initiative used to assess performance and identify areas for improvement. Participants described peer review as a structured, accountability-driven process involving internal and external assessors. One participant shared, *"We have peer review annually where people from the municipal hospital and Abesim come to assess the facility."* (Participant Nkrankrom, 1). Peer review encouraged adherence to standards, motivated staff through scoring systems, and promoted shared learning across facilities.

Community Engagement

Community engagement, particularly outreach and home visits, was identified as essential to improving service use and addressing key community health challenges. Participants highlighted its importance in tackling teenage pregnancy and promoting facility-based deliveries. For example, *"We introduced home visits to curb teenage pregnancy... adolescents are put on family planning."* (Participant Nkrankrom, 2). Engagement activities strengthened trust and improved attendance.

Safecare Participation

Safecare provided facilities with structured standards and assessment tools for continuous improvement. Participants noted progress in quality levels, with one stating, *"The facility is part of Safecare and is at level 4, which has a lot of quality checks as a benchmark."* (Participant SDA, 2). Improved Safecare scores were seen as indicators of better organisational performance.

Surveys and Protocols

Surveys, particularly patient satisfaction surveys, and adherence to clinical protocols were widely used to monitor performance and guide service delivery. One participant explained, *"We conduct patient satisfaction surveys to ascertain if our clients are satisfied."* (Participant Rafchik, 2). Protocols were displayed within units and used to prevent errors and standardise care.

Theme 2: Focus Areas of QI

Patient Care

Participants emphasised that enhancing patient care was a primary focus of all QI activities. Initiatives targeted adolescent health, maternal care, and patient safety. Outreach efforts were said to improve service utilisation and trust. As one participant stated, *"These initiatives target patient care, including adolescent care and immunization of children."* (Participant Nkrankrom, 2).

Infection Control

Infection Prevention and Control (IPC) remained a significant focus, supported by focal persons and staff training. Participants described marked improvements in reducing infections. For instance, *"Our IPC measures have helped us significantly reduce surgical wound infections."* (Participant SDA, 6).

Preventive Care

Preventive health interventions, including immunisation, family planning, and educational outreach, featured strongly in QI initiatives. A participant emphasised, *"We use immunization schedules and targets... it helps you know whether you are performing well or not."* (Participant Nkrankrom, 2). Preventive care contributed to reducing disease burden and supporting vulnerable populations.

Operational Efficiency

Operational efficiency improvements aimed at reducing patient waiting times, improving workflow and documentation, and strengthening staff coordination. One participant noted, *"We have been able to reduce patient waiting times drastically."* (Participant Rafchik, 1).

Theme 3: Impact of QI Initiatives

Better Patient Outcomes

QI initiatives contributed to improved maternal and neonatal health outcomes, reduced mortality, and increased facility attendance. A respondent explained, *"We intensified home visits... it improved attendance and we gained the trust of our clients."* (Participant Nkrankrom, 4).

Improved Efficiency

Greater efficiency was observed in workflow processes, documentation, and service delivery. Participants acknowledged that structured systems

enhanced patient satisfaction and operational smoothness.

Motivated Staff

Motivation was identified as an important outcome of QI activities. Staff valued recognition and equitable treatment. One participant remarked, *"Once we are motivated, we can push ourselves to work hard and accept every initiative."* (Participant Nkrankrom, 5).

Higher Quality Benchmarks

Facilities reported improvements in Safecare ratings and peer review scores. A participant stated, *"When we first joined Safecare, our assessment scores were low, but we have improved significantly and moved from level 3 to level 4."* (Participant SDA, 5).

Research Question Two: To what extent do healthcare providers adhere to quality guidelines and protocols?

Findings relating to adherence to quality guidelines were captured under four main themes: Familiarity with guidelines, Adherence to guidelines, monitoring adherence, and Tools for ensuring compliance.

Theme 1: Familiarity with Guidelines

Participants demonstrated a strong level of familiarity with guidelines and protocols, noting that these documents were available and visible in their units. One participant confirmed, *"I am familiar with the quality guidelines and protocols in place at this facility, and I use them to guide my work."* (Participant Rafchik, 1). Some respondents, however, noted the need for additional training on highly technical guidelines.

Theme 2: Adherence to Guidelines

Participants reported that they adhered to guidelines as much as possible, although deviations occurred during emergencies or when resources were limited. A participant stated, *"We try to follow the guidelines as strictly as possible, but sometimes we have to improvise when resources are not available."* (Participant Nkrankrom, 1). Despite such challenges, adherence was viewed as critical to patient safety.

Theme 3: Monitoring Adherence

Monitoring occurred through both internal supervision and external oversight by the Municipal Health Directorate. As one participant noted, *"Our in-charge ensures that we follow the guidelines... they check on us regularly."* (Participant SDA, 6). External inspections ensured accountability and helped identify areas requiring improvement.

Theme 4: Tools for Ensuring Compliance

Staff relied on tools such as rosters, documentation, morbidity meetings, and daily supervisory reviews to maintain adherence to guidelines. One participant shared, *"We use rosters to track staff*

attendance and reports to monitor performance." (Participant Nkrankrom, 1). These tools promoted consistency, accuracy, and regular reflection on practice.

5. DISCUSSION

DISCUSSION this study examined the implementation of Quality Improvement (QI) initiatives and healthcare providers' adherence to quality guidelines in three primary healthcare facilities in Sunyani, Ghana. The findings demonstrate that structured QI mechanisms peer review, community engagement, participation in the SafeCare programme, and the routine use of patient surveys and clinical protocols are well established across the facilities and are perceived by providers as central to improving care delivery. These findings reinforce existing evidence that facility-based QI initiatives, when systematically implemented, can enhance accountability, standardisation, and performance in primary healthcare settings (Dixon-Woods *et al.*, 2012; Casey & Moscovice, 2004).

Peer review emerged as a particularly influential QI mechanism, functioning both as a tool for performance assessment and as a source of professional motivation. Participants described peer review as reinforcing accountability through structured assessment, scoring, and feedback, while also promoting shared learning across facilities. This aligns closely with earlier studies in Ghana and other low-resource settings which show that peer review and supportive supervision strengthen compliance with standards and encourage reflective practice among healthcare workers (Adalety *et al.*, 2014; Dixon-Woods *et al.*, 2012). The findings suggest that peer review contributes not only to monitoring performance but also to shaping professional norms that value adherence to protocols.

Community engagement was another prominent QI initiative identified in the study, particularly through outreach activities and home visits targeting adolescent health, maternal care, and preventive services. Participants linked these activities to improved service utilisation, increased trust, and better health-seeking behaviour within the community. This is consistent with evidence indicating that community-based strategies are effective in improving uptake of maternal and adolescent health services and strengthening the relationship between facilities and the populations they serve (Agyeman-Duah *et al.*, 2014; Dreier *et al.*, 2020). The findings underscore the importance of extending QI beyond facility walls, supporting the argument that quality improvement in primary healthcare must address both clinical processes and community-facing dimensions of care.

Participation in the SafeCare programme was widely viewed as providing a structured framework for benchmarking performance and guiding continuous improvement. Reported improvements in SafeCare levels and assessment scores mirror findings from

accreditation and standards-based management studies, which suggest that such frameworks clarify expectations, reduce variation in practice, and support organisational learning (Coles *et al.*, 2017). The study's findings indicate that SafeCare functions as both a diagnostic and motivational tool, helping facilities identify gaps while reinforcing a culture of quality. However, the literature cautions that accreditation-style programmes require sustained leadership commitment and adequate resources to maintain gains over time, a concern also reflected in participants' accounts (Coles *et al.*, 2017).

The routine use of patient satisfaction surveys and visible clinical protocols further highlights the facilities' emphasis on standardisation and patient-centred care. Participants described surveys as mechanisms for capturing patient experiences and identifying areas for improvement, while protocols were viewed as essential guides for safe and consistent practice. This aligns with previous work demonstrating that clear guidelines and feedback mechanisms are critical for sustaining adherence and improving service quality (Hayford, 2017; Alavi & Yasin, 2008). The visibility of protocols within clinical units likely contributed to the high levels of familiarity and reported adherence observed among providers in this study.

Regarding adherence to quality guidelines, the findings indicate generally high compliance, supported by internal supervision, external inspections, and practical monitoring tools such as rosters, reports, and morbidity meetings. This pattern is consistent with studies showing that ongoing oversight and routine monitoring are key determinants of sustained guideline adherence (Rowe *et al.*, 2018; Hayford, 2017). Nevertheless, participants acknowledged that full adherence was sometimes compromised by contextual constraints, including shortages of supplies, emergency situations, and the technical complexity of certain procedures. These challenges echo long-standing evidence from Ghana and other low- and middle-income countries that structural and logistical barriers continue to undermine consistent implementation of standards, even in facilities with active QI systems (Agyepong *et al.*, 2012; Rowe *et al.*, 2018).

The reported impacts of QI initiatives improved patient outcomes enhanced operational efficiency, increased staff motivation, and better performance in external assessments are broadly consistent with the wider literature. Studies have shown that QI interventions can reduce waiting times, improve workflow coordination, and strengthen documentation, thereby indirectly supporting protocol adherence by reducing time pressure and cognitive load on providers (Kirigia *et al.*, 2019; Munyisia *et al.*, 2011). In this study, participants' accounts of smoother workflows and reduced waiting times suggest that organisational improvements may create enabling conditions for safer and more reliable care.

Staff motivation emerged as a notable outcome of QI activities, particularly where initiatives incorporated recognition, feedback, and inclusive problem-solving. This finding aligns with evidence that supportive supervision, participatory management, and recognition are strongly associated with health worker motivation and compliance with standards (Mbindyo *et al.*, 2009; Franco *et al.*, 2004). The study reinforces the view that QI is not merely a technical exercise but also a social process that influences morale, professional identity, and commitment to quality.

The findings support the broader literature's conclusion that QI initiatives can meaningfully improve primary healthcare delivery when they are embedded in routine practice and supported by leadership and resources (Kaplan *et al.*, 2010; Dixon-Woods *et al.*, 2012). However, the persistence of resource-related constraints underscores that QI alone cannot compensate for systemic weaknesses. As previous studies have argued, the effectiveness of QI is contingent on adequate supplies, infrastructure, staffing, and continuous capacity building (Rowe *et al.*, 2018; Agyepong *et al.*, 2012). Without these enabling conditions, the gains achieved through peer review, SafeCare participation, and protocol use risk being fragile and uneven.

This study contributes context-specific evidence from Sunyani, Ghana, demonstrating how multiple QI initiatives interact within the same facilities to shape provider behaviour and care delivery. The findings corroborate existing research while highlighting the importance of sustained resourcing, supportive leadership, and community-oriented strategies for translating QI structures into consistent, high-quality frontline practice.

6. CONCLUSION

This study examined the implementation of Quality Improvement initiatives and healthcare providers' adherence to quality guidelines in three primary healthcare facilities in Sunyani, Ghana. The findings demonstrate that structured Quality Improvement mechanisms, including peer review, community engagement, participation in the SafeCare programme, and the routine use of patient surveys and clinical protocols, are firmly embedded within the facilities and play a central role in shaping everyday service delivery. These initiatives collectively support accountability, standardisation of care, and continuous learning, contributing to improvements in patient outcomes, operational efficiency, and staff performance. Healthcare providers across the three facilities demonstrated a high level of familiarity with quality guidelines and generally strong adherence to clinical protocols. This adherence was reinforced through internal supervision, peer review processes, external inspections, and the use of practical monitoring tools such as rosters, reports, and morbidity meetings. The study shows that when guidelines are visible, supervision

is consistent, and Quality Improvement activities are integrated into routine practice, providers are more likely to comply with established standards of care. However, the findings also reveal that full adherence to protocols is not always achievable. Persistent resource constraints, emergency care pressures, and the technical complexity of some procedures occasionally necessitated improvisation, even among motivated and well-informed providers. These challenges highlight that Quality Improvement initiatives, while effective, cannot fully offset structural and logistical limitations within the health system. Sustaining and deepening the gains achieved through current Quality Improvement efforts therefore requires parallel investments in supplies, infrastructure, staffing, and ongoing professional development.

7. RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are proposed to strengthen Quality Improvement (QI) practices and enhance adherence to quality guidelines across Seventh Day Adventist Hospital, Rafchik Health Centre, and Nkrankrom CHPS.

First, healthcare facility management should reinforce existing QI initiatives by institutionalising regular peer reviews, expanding community engagement strategies, and ensuring consistent participation in the Safecare programme. Peer reviews must be conducted routinely, involve external assessors, and include structured feedback mechanisms to promote accountability and continuous learning. Community engagement initiatives, including home visits, targeted outreach, and health education, should be intensified to address persistent challenges such as teenage pregnancy, maternal health risks, and low facility utilisation. Active and sustained participation in the Safecare programme should be prioritised to ensure facilities continue to benchmark their performance and align with recognised quality standards.

Second, the Ghana Health Service (GHS) and facility management should ensure that clinical guidelines and protocols remain easily accessible, visible, and consistently applied across all service units. Regular orientation sessions and refresher training must be provided to enhance staff competence and ensure correct interpretation and implementation of guidelines. Monitoring systems, including peer reviews, supervisory visits, and external audits, should be strengthened to identify gaps promptly and guide corrective action. Furthermore, resource constraints that impede adherence must be urgently addressed. Adequate supplies, equipment, and logistical support will reduce the need for improvisation during emergencies and enable healthcare providers to deliver safe, standardised, and reliable care always.

8. CONTRIBUTION TO KNOWLEDGE

This study makes several important contributions to knowledge on Quality Improvement and protocol adherence in primary healthcare settings, particularly within low- and middle-income country contexts such as Ghana.

First, the study provides context-specific empirical evidence on how multiple Quality Improvement initiatives operate simultaneously within the same primary healthcare facilities. Unlike earlier Ghanaian studies that have tended to focus on single interventions, disease areas, or district-level programmes, this research demonstrates how peer review, community engagement, SafeCare participation, and the routine use of surveys and clinical protocols interact in practice within hospital, health centre, and CHPS settings. By examining these initiatives together, the study advances understanding of Quality Improvement as an integrated system rather than as isolated tools.

Second, the study contributes to knowledge by linking Quality Improvement directly to healthcare providers' everyday experiences of protocol adherence. Through qualitative evidence, it shows how supervision, peer review, visible protocols, and monitoring tools such as rosters and reports translate policy-level quality frameworks into frontline clinical behaviour. This provider-centred perspective deepens existing literature by illuminating the mechanisms through which Quality Improvement influences compliance, beyond formal guidelines and policy statements.

Third, the findings extend theoretical application of Donabedian's structure–process–outcome framework in a real-world primary healthcare context. The study empirically demonstrates how Quality Improvement initiatives function as process-level interventions that mediate between structural conditions such as resources and staffing and outcomes such as patient safety, service efficiency, and staff motivation. In doing so, it strengthens the practical relevance of the framework for analysing Quality Improvement implementation in resource-constrained settings.

Fourth, the study contributes by highlighting the persistent limits of Quality Improvement under structural constraints. While confirming that QI initiatives can improve outcomes and accountability, the research provides nuanced evidence that resource shortages, emergency pressures, and infrastructural limitations continue to shape adherence behaviour. This contribution moves the literature beyond overly optimistic accounts of Quality Improvement by clarifying the conditions under which its impact is strengthened or constrained.

Finally, the study offers practice-relevant insights for managers and policymakers by identifying

specific mechanisms that support sustained adherence, including routine peer review, consistent supervision, community-facing strategies, and accreditation-style benchmarking. These insights generate transferable lessons for strengthening Quality Improvement systems in similar primary healthcare facilities in Ghana and comparable settings, thereby contributing to both scholarly knowledge and applied health system improvement.

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