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RESEARCH ARTICLE

Patient Safety in the Primary Healthcare Settings

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Abstract

To ensure quality healthcare, particularly in Primary Healthcare (PHC) settings, Patient Safety (PS) is a requirement. Since PHC facilities are typically where patients initiate their healthcare experience, it is essential to implement PS measures while providing an environment that enables capable clinicians to obtain accurate diagnoses, initiate effective treatment, and offer recommendations in a supportive and resilient setting for the continuation of care. Ultimately, the only way people can maintain and sustain their health is by receiving safe, effective, high-quality care tailored to their specific needs. PS is essential to the practice of care in primary, secondary, and tertiary care; however, there are limited PS studies conducted in primary healthcare settings, whereas most PS work has been done in secondary and tertiary healthcare settings. Nonetheless, PS events are generally lower in PHC settings compared to hospital environments. Each year, across the globe, countless individuals are dying, being injured, or being disabled from unsafe medical procedures, highlighting the urgent and global impact of patient safety. Although, statistics measuring the rates of PS events in the PHC systems of developed countries are limited, a 2011 study from the US estimated that PS events occur at a rate of 2.2%. Other estimates have suggested that up to 80% of PS events are preventable, and approximately 40% of patients experience harm during outpatient medical treatment. Safety strategies can help improve patient safety and the quality of care for patients, the effectiveness of healthcare systems, and the proficiency of healthcare workers, regardless of the care setting. Therefore, PS must always be the top priority in all healthcare settings.

Introduction

According to the World Health Organization, the definition of Patient Safety (PS) is "the absence of avoidable harm to a patient and reduction of risk of unnecessary harm associated with health care to an acceptable minimum"[1]. Following the World Health Assembly's adoption of the Global Action Plan on Patient Safety, PS has become a global priority [2]. In contrast, the Institute of Medicine defines patient safety as "the prevention of harm to patients" [3]. It emphasizes the care delivery system that [4] learns from mistakes that do happen [5], prevents errors, and is based on a safety culture that includes patients, organizations, and health professionals [6,7]. Safety is often considered a quality characteristic that can be improved to reduce harm and improve outcomes [8]. An

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estimate suggests that PS improvements could save an additional 1,000 lives and save the UK around £100 million in annual care costs [9].

The establishment of a safety culture involves the roles of patients, the organization, and practitioners in the care delivery system [5] as a means to prevent errors [4] and learn from mistakes that occur [7]. Safety is often viewed as a quality domain that can be improved on to mitigate harm and enhance outcomes.

PS is essential to the standard of care, especially in PHC contexts where there are so many patient contacts. Since PHC centers are the first port of call for anyone seeking medical assistance, they must provide a safe space to aid in diagnosis, treatment, and continuity of care. After all, the only way for us to cure patients and promote and maintain their health is to provide a safe environment with a high-quality, and patient-centered care. Healthcare-associated infections, particularly post-surgical infections and infections caused by medical devices, which are preventable through proper care, remain a weak point in exposure controls, even though they cause a large number of morbidity and mortality and are associated with high costs that includes the costs of implementing systematic surveillance, infection control, cleaning, staff training, immunizations, and the burden of disease from healthcare-associated infections. This indicates that there is a lack of clarity about what can be done. Although, comprehensive action plans and the development of robust guidelines can address these issues, changing expectations, plans and guidelines are still not sufficient. The urgent need for integrated national action plans must be recognized and implemented into healthcare management strategies to enhance the culture of Safety. This is a complex venture that necessitates clear roles and mechanisms.

Background and Significance

Since PS is crucial for providing high-quality health services, it should be a top priority for all healthcare organizations. Worldwide, ongoing debates highlight the complex challenges related to Safety and quality, especially in healthcare facilities and social care services. Ensuring safe and high-quality care can improve patient outcomes and protect both patients and healthcare workers. Implementing safe practices reduces healthcare-associated infections, prevents unnecessary hospital admissions and more extended stays, and helps identify unsafe events during quality

checks. But, poverty remains a significant issue in many parts of the world and the problem of unsafe treatment is serious in developing countries, where workers in PHC centers can provide substandard care because of insufficient funds and complicated routes to high-quality innovations and solutions.

Some of the significant factors affecting PS in these environments are the complexity of care (many workers involved including professionals, patients whom may not be able to advocate for themselves, and the system consisting of handoffs and patient transfers between shifts) working conditions (such as working long hours and high decibel levels), and the overall work environment. There can be a connection between patient safety and worker safety, specifically if workers are safer at work, patients will be safer. Ultimately, PS can be improved by performing actions that also enhance workers' safety.

Cultural aspects are another element of the most critical influences on explaining the standard of care and, indirectly, PS, which must be considered.

In a 2010 discussion paper by the Australian Commission of Safety and Quality in Health Care, it was argued that "As safety and quality of PHC services have some risks associated with the processes of delivery, the actions and knowledge of patients, families, and carers also have a considerable influence on safety and quality." This indicates the significant relationships between patients' knowledge and the occurrence of PS events. Safe care is an integral component of quality care; however, while safe care is necessary for high-quality care, quality is not assured [10].

When PS is prioritized, there are fewer chances of serious consequences. A patient safety culture not only prioritizes Safety but also encourages teamwork and communication across disciplines, fostering a sense of collaboration and shared responsibility. This will encourage a higher level of care that is more effective and coordinated [5]. One significant factor in improving PS is intrinsic motivation, i.e., the beliefs and dispositions of providers and organizations.

WHO was commissioned to compute the global burden of unsafe care to provide leverage for international endeavors to enhance health systems. Across policymakers globally, the Global Burden of Disease (GBD) has become a ubiquitous metric used to evaluate the extent of suffering attributable to specific illnesses. Adverse events and unsafe care

resulting in injury would create substantial problems for health systems globally, underscoring the urgent need for action [11].

Prevalence of PS incidents

PS is critical at the primary, secondary, and tertiary levels of healthcare. However, PS is not studied much in PHC services, and almost all research on the issue has focused on secondary or tertiary care [12]. Having said that, PS events appear to be less frequent in PHC than in most hospital settings.

Unsafe medical practices lead to the deaths, injuries, or disabilities of millions of patients worldwide each year [13]. It is essential to recognize that up to 10% of patients in a decent number of countries suffer illness or injury while receiving care in a hospital, with unsafe care causing nearly 3 million deaths annually. In lower- and middle-income countries, poor care accounts for about 4 out of 100 deaths. Medications are responsible for half of this harm, and around half of that is preventable. The annual risk of receiving unsafe care due to healthcare-associated infections alone amounts to unmanageable levels. Although infection prevention and control are a well-defined driver for preventing and controlling the transmission of infectious diseases of concern, there is still limited support from some health ministry's [14-16].

The incidence of PS occurrence in the PHC Context in developed countries is precisely unknown. However, this uncertainty should not discourage us, as there is significant potential for improvement. A 2011 article from the USA reported a PS incidence of 2.2% of events [17]. Other studies reveal that, on average, 40% of patients suffer harm in the course of ambulatory care, and of these, the vast majority, 80%, may have been prevented [18].

According to the international systematic review [19], there are two or three PS events for every 100 PHC consultations, with one in 25 events causing the patient significant harm. Most errors in PHC are medication-related or diagnosis-related. Furthermore, one in five emergencies were related to clinical assessment, diagnosis, or follow-up care, rather than medication [19]. A Spanish study on PS incidents suggested that most incidents are drug-related events, specifically prescribing or the patient's administration of a drug. Every twenty patients will have an unfortunate incident due to the

care they receive at PHC during each trimester. Such harm could have been avoided in almost three out of four situations [20]. The annual burden of PS events amounts to nearly 23 million Disability-Adjusted Life Years (DALYs) from at least 43 million injuries caused by medical care [21]. Adverse events (injuries resulting from medical treatment) negatively impact health, cause direct harm to patients, and erode confidence in the healthcare system [22].

Table 1 shows the results of an Australian study on various reasons for 516 safety risk incidents and threats to Australian Patient Safety (TAPS). It highlights various percentages for each type of medical error [10].

Table 1: TAPS study showing 525 patient safety incidents.

Error category	Number (% if titak)
1. Errors related to the processes of healthcare	365 (69.5)
1.1 Errors in practice and healthcare systems	112 (21.3)
1.1.1 Errors relating to incorrect patient identification	12 (2.3)
1.1.2 Appointments and message handling errors	15 (2.9)
1.1.3 Patient record and filling system errors	28 (5.3)
1.1.4 Recall event and recall systems errors	25 (4.8)
1.1.5 Computer systems errors	6 (1.1)
1.1.6 Errors in the maintainance of a safe physical environment	6 (1.1)
1.1.7 Errors in provision of care after hours or inadequate staff coverage	7 (1.3)
1.1.8 Errors relating to patient confidentiality issues	3 (0.6)
1.1.9 Practice and healthcare systems errors not otherwise specified	10 (1.9)
1.2 Investigation errors	65 (12.4)
1.2.1 Errors relating to incorrect patient identification	7 (1.3)
1.2.2 Errors in the process of requesting investigations	12 (2.3)
1.2.3 Errors in the process of undertaking investigations	9 (1.7)
1.2.4 Errors in reporting processes or managing investigation reports	35 (6.7)
1.2.5 Investigation errors not otherwise specified	2 (0.4)
1.3 Medication errors	107 (20.4)
1.3.1 Electronic prescription writing or medication charting errors	31 (5.9)
1.3.2 Other prescription of medication charting errors	16 (3.1)
1.3.3 Medication dispensing and delivery errors	38 (7.2)

1.3.4 Patient self-administration of medication errors	11 (2.1)
1.3.5 Medication errors not otherwise specified	11 (2.1)
1.4 Treatment errors (non-medication)	13 (2.5)
1.4.1 Errors in the process of providing immunizations	11 (2.1)
1.4.2 Errors in the process of undertaking procedures	1 (0.2)
1.4.3 Non-medication treatment errors not otherwise specified	1 (0.2)
1.5 Communication errors and process errors not otherwise specified	68 (12.9)
1.5.1 Errors in general communication with patients	17 (3.2)
1.5.2 Hospital discharge and other hospital-based communication errors	31 (5.9)
1.5.3 Errors in referral to other healthcare providers	9 (1.7)
1.5.4 Errors in general communication with other healthcare providers	8 (1.5)
1.5.5 Communication and process errors not otherwise specified	3 (0.6)
2. Errors related to the knowledge and skills of health professionals	160 (30.5)
2.1 Errors in diagnosis	62 (11.8)
2.1.1 Errors in patient history taking	2 (0.4)
2.1.2 Errors in patient physical examination	11 (2.1)
2.1.3 Errors in investigations requested or their interpretation	27 (5.1)
2.1.4 Diagnosis-related errors not otherwise specified	22 (4.2)
2.2 Errors in managing patient care	98 (18.7)
2.2.1 Medication management errors	57 (10.9)
2.2.2 Knowledge or skills errors in undertaking immunizations	9 (1.7)
2.2.3 Knowledge or skills errors in undertaking procedures	13 (2.5)
2.2.4 Errors managing care not otherwise specified	19 (3.6)

Factors that make patients at risk of safety hazards

Understanding the factors that put patients at risk of safety hazards is crucial. These factors include the patient's age, psychological condition, socioeconomic status, home location, access to family support, and language and cultural barriers.

For many individuals in developing countries, unsafe medical treatment is one of the most significant barriers to accessing the healthcare system, as it may discourage them from ever using the official healthcare services. This situation suggests that there may not be a clear distinction between

quality (specifically, Safety) and access. Several key characteristics can raise patients' risk of injury in the primary care setting. Some of the most significant risks are linked to the patients themselves, including.

1. Age of the patient: PS incidents could affect anyone, but older adults are particularly at risk due to diminished hearing, vision issues, and mobility dysfunctions. However, infants, toddlers, and young children may be at an even higher risk of unintentional injury because they lack cognitive awareness, motor coordination, or sufficiently adequate communication to recognize or avoid potential dangers. They are at risk for accidents, falls, inappropriate use of medication, and other safety incidents.
2. The patient's psychological condition or mental health affects their susceptibility, since people with delirium, dementia, or extreme anxiety may have difficulty following safety protocols or expressing their needs.
3. Socioeconomic conditions are another factor to consider, as patients who are considered low-income may not receive quality health care or have the ability to purchase the required medical equipment or adhere to prescribed therapy. Those in poverty may have to walk to the PHC, thus increasing their likelihood of being involved in a car accident, particularly if they live far from the health facility.
4. Patients' home location and access to family support: Patients who live alone typically have limited social or family support and may exhibit reduced medical care-seeking behaviors in times of need, especially if they come from a low-income background.
5. Language and cultural barriers could exacerbate PS incidents; this is especially true in countries where non-English-speaking low-wage foreign workers are in high numbers. Such factors diminish their awareness regarding safety protocols.
6. Patients with physical limitations experience barriers and have a higher frequency of PS events.

Therefore, family physicians must identify and address these diverse risk factors to ensure the Safety and health of all their patients.



Factors related to the PHC setups that put patients at risk of safety hazards

Regrettably, many PHC settings, the crucial first point of contact for individuals in need of medical assistance, are rife with safety hazards that demand immediate attention. Adverse events from medical care are a leading cause of morbidity and mortality worldwide. Overcrowding, a common issue, can lead to disorganized chaos in a space with limited facilities, putting patients at risk of accidents, collisions, or the spread of diseases. While inadequate equipment may result in a patient having an outdated asset or a malfunctioning medical item, this can pose a risk to the patient. A lack of sanitation policies, poor cleanliness, or improper sterilization can increase the risk of acquiring an illness at the facility. Additionally, because PHC centers accommodate every age group and make necessary adjustments to meet the differing needs and vulnerabilities of each age group, these accommodations may not always be realistic.

Unclear signs, uncoordinated patient traffic flow, and a lack of security could easily contribute to unsafe work conditions. There may be an increased risk of PS events due to the structural limitations of the PHC building such as not having a wheelchair ramp, that the elevator was not available when required for some of the upper floor services, that walking surfaces were slippery, unsafe walking paths, a lack of safety gear (to get out in a fire or other emergency), poor ventilation, no assistive equipment for any disabled patients, and other structural limitations.

The combination of limited resources, operational deficiencies, and a distinct group of patients in many PHC situations creates yet another complex web, which, if no attention is paid to it, can jeopardize patients' health and well-being directly and indirectly.

Factors related to healthcare workers leading to an increase in PS incidents

Healthcare personnel are critical to the Safety of the patients they care for; nevertheless, some of their characteristics increase the likelihood of an adverse patient outcome. Important contributing factors include the long workdays, the many hours that healthcare personnel work, and the high number of patients to care for. Overworked and overloaded professionals often fail to provide the attentive, caring care that is required due to fatigue, burnout, and cognitive deficits, resulting in an increased likelihood of mistakes. Low pay and a lack of incentives for PHC

staff lead to demotion and demoralization. Irregular, ongoing medical and professional education, as well as insufficient training of the PHC health team in safety protocols and updated medical information, result in outdated scientific knowledge, which ultimately leads to poor condition management and judgment. These can leave patients vulnerable to unrecognized health risks. A common practice in many developing nations is the deployment of inexperienced healthcare professionals to PHC centers, which may occasionally be dangerous for the patients. Many PHC setups may lack effective staff interactions and communication, resulting in a loss of coordination for the health services offered. Healthcare professionals often fail to follow standard protocols for addressing various issues that could lead to complications. Patients' protections may be at risk when privacy and confidentiality are not protected. PS is compromised, and continuity of care is lost when a patient consultation is not documented appropriately. It is also essential to develop a culture of reporting PS events. Some systems put patients at greater risk because safety procedures are not prioritized or adequately rewarded.

The coordination and oversight that mitigate these adverse outcomes usually rely heavily on nurses. The factors nursing contributes to patient safety involve noncompliance with standard operating procedures, poor leadership, breakdowns of communication or teamwork, not acknowledging or delineating individual fallibility, and losing track of specific objectives - are some of the categories of related causes provided by root-cause studies of errors [23].

Enhancing patient safety in general and decreasing the prevalence of avoidable harm requires confronting these challenging aspects of healthcare professionals.

Complications as consequence of PS incidents

Numerous safety-related issues could affect the patients if the PS guidelines are not appropriately implemented. When primary healthcare safety fails, patients' financial, emotional, and physical health are all at risk. Safety lapses can lead to increased medical costs for patients, adding to their financial burden. Injuries could be physical, medical, psychological, or social. From the moment patients are getting ready to leave their homes to visit the PHC facility until they return home, there is a chance that the risk will materialize. There is a safety concern before reaching the center, particularly if no one is available to drop the



patient off at the PHC center when they need medical care, as they live alone. To reach the center, they will need assistance and/or transportation, which, if done incorrectly, could be physically or mentally stressful for them.

Insufficient Safety in PHC settings can result in a variety of troubling complications or events for patients. A lack of Safety in PHC settings could also lead to a plethora of concerning incidents or issues for patients. Failing to adhere to safety practices or standards can lead to patient falls, burns, or surgical errors, resulting in physical harm to patients.

Another serious situation relates to healthcare-associated infections, in which patients contract infectious illnesses due to poor sanitation or hygiene practices by medical Staff. This can lead to multiple primary health care visits or consultations, additional medical expenses, or worse, death. Wrong diagnosis is another common situation, as it can lead to incorrect treatment that may have adverse effects on the body. One category of serious PS events is medication errors. Patients can suffer adverse reactions or sub-therapy when given the incorrect drugs, the wrong dose, the wrong route of delivery, or an expired one.

In addition, breaches of privacy and data security can disclose sensitive patient identifiers, including information that enables identity fraud and other criminally inappropriate activities using private medical records. Overall, an unsafe environment in the PHC creates fear, anxiety, and distrust in addition to what was stated earlier.

How to decrease the safety hazards?

It takes a diversified approach to ensure patient safety. Any structured program aimed at preventing or, at the very least, mitigating the consequences of safety hazards should focus on three primary stakeholders: the healthcare providers, patients, and healthcare context. Each stakeholder plays a crucial role in ensuring patient safety, and their collaboration is essential to achieving this goal.

Measures related to the PHC center's staff

All PHC personnel, including administrative and professional health staff, as well as the housekeeping and cleaning team, play a crucial role in maintaining a safe and hygienic environment for patients. They must prioritize patient safety. PS is understood as a collective responsibility, and collaboration is

necessary to achieve this goal. It is essential to develop both professional and non-professional knowledge, skills, and communication competencies among the Staff. They should engage in continuous professional development and stay current with the latest knowledge and procedures for addressing a range of health issues. They should also receive ongoing training on new technologies, emergency protocols, and safety standards. Simulation modules could serve as an enhancement to training. They must develop their communication skills and learn to manage challenging situations effectively. Since the PHC center typically serves patients from a diverse range of ages, sexes, and socioeconomic backgrounds, it is essential to ensure that the medical and non-medical Staff are trained to deal with them effectively. By ensuring that the length of consultation is extended and crowding is prevented, stress and tension will be reduced, which will subsequently help to decrease the likelihood of inaccurate diagnosis or treatment. Correct documentation and recording of treatment plans are crucial for preventing PS occurrences and ensuring treatment continuity. Protocols and guidelines for addressing the most common problems will facilitate safe consultations. Standardized processes should be used when completing routine chores and treatments to minimize variability in treatment administration, thereby reducing errors and ensuring consistency in care. Develop policies for medication management, including verifying prescriptions, utilizing electronic prescribing technology, and educating patients on their medications.

A culture of vigilance can be established through regular safety drills, open communication lines, encouraging staff vigilance, teaching staff how to distinguish warning signs and report issues as they arise, having some regular staff meeting (e.g. daily report meetings), fostering an environment where employees can report mistakes without reprisal, and fostering teamwork and communication among health care professionals to ensure team-based care and to reduce errors. This non-punitive culture is essential to maintain and foster, allowing medical personnel to report mistakes or near-misses without fear of being held accountable. It ensures that the focus is on learning from errors and preventing future occurrences, rather than on blame.

Measures to be done in the PHC center

Every health institution should prioritize workplace safety and proactively identify and reduce



safety risks. Healthcare centers should ensure that they have safe areas to create a patient-friendly environment. All written safety policies, combined with a culture of prioritizing patient care, can help in preventing the potential repercussions of medical errors. There should be an effective registration process in place to quickly identify patients. The PS policy should routinely address anticipated future safety issues, whether they are structural or professional service-related factors. The PS policy should also plan on integrating contemporary technology for PS improvement.

There should be a regular process for conducting a comprehensive assessment of the workplace, encompassing all spaces and tools to identify potential hazards. A systematic approach should be established to properly assess the worksite, including all areas and equipment, in order to identify potential hazards. This could include looking for trip or slip hazards, evaluating shelving and storage construction, or ensuring that safety devices, such as fire extinguishers, are functioning correctly. The next step is to address those hazards systematically by implementing both organizational and physical controls, once they have been thoroughly documented and assessed. This could include, for example, fixing floors that move, installing guardrails on raised work areas, or implementing operational controls for handling hazardous materials. Organizations can reduce the likelihood and severity of safety concerns by employing a multimodal approach that integrates thorough inspections, targeted interventions, and staff engagement in incidents as they occur.

It is necessary to implement the following additional measures in the PHC to facilitate PS control:

- Infection Prevention by imposing wristwatch hand hygiene practices for patients, professional Staff, and visitors to reduce the incidence of healthcare-associated infections. Always use sterile and aseptic technique during procedures. Install Systems for Monitoring Safety and Hygiene to determine hygiene and minimize cross-contamination by using automated systems and sensors to monitor infection control operations. Utilize technology to audit and enforce healthcare personnel compliance with hand hygiene protocols. By employing these technologies, PHC facilities can significantly enhance patient safety, minimize errors, and improve the quality of

their care. However, to effectively function, the ongoing challenge for these systems will be training, costs, and the need for formal acceptance by Staff as part of their duties.

- Isolation precautions: Ensure that the appropriate techniques are used when isolating patients with diseases that can cause infections.
- Use of Technology: Research indicates that the use of technical equipment and information technology will undoubtedly improve patient safety. These can enhance patient safety by eliminating communication barriers, minimizing medication errors, reducing adverse drug events, and promoting adherence to clinical guidelines. [24] Utilize an electronic health records system to ensure that patient information is readily available to all providers and minimize issues associated with paper files. Use of barcoding systems for medication and patient identification to avoid errors in administering medications. Reduce human error by introducing "Checklists" used for operations, procedures, and care transitions. Telemedicine can reduce wait times for patients and provide access to specialized care by enabling remote consultations. Promote timely treatment to enhance patient care and outcomes, particularly in remote or underserved populations. Using Health Apps on Mobile Devices will allow patients to take control of their schedules, symptoms, and medications, helping them to become more engaged in their own care. Voice recognition software can enable medical professionals to dictate orders and patient notes, thereby improving documentation accuracy by reducing transcription errors. It can also optimize the documentation process of updating patient records, providing professionals with more time for face-to-face patient care. IT support should be readily available to assist with maintenance, troubleshooting errors, and resolving failures.
- Ongoing training and education of Staff on developments in medical technology and patient safety guidelines. Utilize Simulation Education to train staff in emergency prevention and to familiarize them with procedures under realistic conditions.



- Accreditation from reputable bodies that recognize patient safety as a paramount priority reflects a testament to the staff's dedication and expertise. It is a recognition of their commitment to providing the highest standard of care and ensuring patient safety.

Measures taken with the patients to reduce PS incidents

Regular health education classes and specific instructions about medication usage, follow-up appointments, care after discharge, and safety procedures in the PHC center. Encouraging community engagement in PHC policy to empower patients to take ownership of their healthcare by engaging them in their care. This involvement is not just about providing them with information on their diagnoses, treatment options, and potential risks, but also about encouraging them to research and make thoughtful choices. Processes are in place to inform patients on how to report problems or concerns about their care, giving them a sense of responsibility and involvement in their own Safety [23].

Importance and benefits of Patient Safety

To develop awareness and potential prevention strategies for PS, we need to study PS within the context of PHC. It includes strategies such as regular risk assessments, staff training, and most importantly, patient education. Implementing meaningful improvements in patient safety within the PHC services will help enhance satisfaction, improve health outcomes, and provide the following benefits:

- Guarantees high-quality care: The most significant benefit that can be assured afterwards is that caregivers will be able to provide quality healthcare services. A safe environment fosters patient safety and higher-quality healthcare services while reducing adverse outcomes, injuries, and poor patient outcomes.
- By identifying risks and taking steps to mitigate them, there can be fewer misdiagnoses, incorrect prescriptions, or incorrect procedures. This emphasis on prevention helps the audience feel secure and confident in the system's ability to protect them from potential errors.
- Builds trust: A positive safety culture fosters

trust between patients and healthcare professionals, leading to increased patient engagement and compliance. This trust is a testament to the system's reliability. Patients will be more willing to tolerate long waits for consultations or other medical services at the PHC because they know they will receive the best care.

- Patient-Centered care: Making safety a priority would strengthen patient-centered care and promote patient comfort and value. When patients trust their primary care physicians, they are more likely to be candid, adhere to treatment suggestions, and participate in their own healthcare decisions.
- Financially, by preventing adverse events, both patients and providers can benefit from a reduced need for additional interventions, fewer hospital referrals, and potential avoidance of legal repercussions. It reassures the audience about the cost-effectiveness of safety measures, contributing to their peace of mind and confidence in the system's financial stability.
- Encourages health equity: All patients receive appropriate and professional care, and those who might otherwise fall through the cracks due to their economic situation will be protected by safe practices. Such measures will ensure that they experience similar safety and treatment protocols, promoting a sense of fairness and justice in the system. The entire PHC space will always be safe for patients, from the parking lot (with a safe pedestrian walkway) to the entrance of the building (with a ramp, handrails, and an auto-door that opens long enough to allow patients to cross before it closes).

Once PS practice is established, it becomes a cornerstone for monitoring best practices for clinicians. It creates a culture of accountability and responsibility, where research opportunities arise, and adverse events, complaints, or unanticipated outcomes are documented more effectively. This not only ensures the continuous improvement of PS but also fosters a culture of learning and development among healthcare professionals.

Experts have noted the need for the establishment of national patient safety protocols, regulatory



standards, a culture of Safety within healthcare facilities, ongoing education and training of personnel, and various means of patient participation in safety processes, if they are to establish truly longitudinal safety governance processes for patients [5].

The PHC management should always keep their existing system up to date and seek new practices that promote sound patient safety. Multiple measures are essential to be considered when planning to improve patient safety, of which the most important are: to take concrete measures to prevent falls and injuries by creating a safe environment in the PHC setting and identifying patients who are vulnerable to falls, such as older persons and individuals with disabilities. Moreover, patients should receive emotional and psychological support if they may experience stress or anxiety, and those who may face a mental health disorder are particularly important to identify, as this may compromise a patient's overarching Safety and well-being.

Limitations against full implementation of PS protocols in PHC

Many issues in PHC are considered to be challenging issues against proper practice to ensure PS, of which the most important are: Resource Constraints: Many primary care settings lack the resources to implement safety protocols and educational programs. Workload and Burnout: High patient volumes and administrative responsibilities can lead to burnout among providers, increasing the risk of errors and compromising patient safety. Moreover, Fragmented Care: Patients may receive care from multiple providers, which can lead to a lack of communication and potential safety issues, particularly when administering medications and following up on aftercare.

Conclusion

Implementing safety precautions can markedly enhance health care quality and PS for patients, health systems, and healthcare providers. In any healthcare setting, Safety should take precedence.

Enhancing patient safety in healthcare institutions will also:

- Improve the quality of healthcare outcomes
- Foster the patient-doctor relationship.
- Built trust between the patient and the provider.

- Provision of quality services in the basic healthcare environment.
- Some necessary Safety measures, such as infection control techniques, would significantly reduce the risk of infection transmission in primary healthcare facilities, leading to reassurance and confidence in the healthcare system.

An effective communication strategy, along with better management of medications, education, patient engagement, and teamwork, among other factors, enhances patient safety outcomes in healthcare institutions. All stakeholders in the healthcare system must work together to address the issues that compromise patient safety. Not only does patient safety benefit patients, but it also improves the entire healthcare sector.

References

1. World Health Organization. (2023, September 11). Patient safety [Fact sheet]. <https://www.who.int/news-room/fact-sheets/detail/patient-safety>.
2. Farhan Hamoud W Alruwaili. The role of health information technology in reducing medical errors. *Letters in High Energy Physics*. 2023;2:1503-1517
3. To Err is human: Building a safer health system. Kohn LT, Corrigan JM, Donaldson MS, editors. Washington (DC): Institute of Medicine (US) Committee on Quality of Health Care in America. National Academies Press (US); 2000.
4. Gemmete JJ. Learning from medical errors. *CVIR Endovasc*. 2024 Jan 10;7(1):8. doi: 10.1186/s42155-023-00406-6. PMID: 38197983; PMCID: PMC10781906.
5. Mistri IU, Badge A, Shahu S. Enhancing Patient Safety Culture in Hospitals. *Cureus*. 2023 Dec 27;15(12):e51159. doi: 10.7759/cureus.51159. PMID: 38283419; PMCID: PMC10811440.
6. Hibbert PD, Stewart S, Wiles LK, Braithwaite J, Runciman WB, Thomas MJW. Improving patient safety governance and systems through learning from successes and failures: qualitative surveys and interviews with international experts. *Int J Qual Health Care*. 2023 Nov 17;35(4):0. doi: 10.1093/intqhc/mzad088. PMID: 37978851; PMCID: PMC10656601.
7. Clancy CM, Farquhar MB, Sharp BA. Patient safety in nursing practice. *J Nurs Care Qual*. 2005 Jul-Sep;20(3):193-7. doi: 10.1097/00001786-200507000-00001. PMID: 15965381.
8. A framework for managing the quality of health services in New South Wales (PD 2005_585). Sydney: NSW Department of Health. 2005.
9. The NHS patient safety strategy. Safer culture, safer systems, safer patients. NHS England. 2019.



10. Draft for public consultation. Australian Commission on Safety and Quality in Health. 2010.
11. Murray Christopher JL, Lopez Alan D. The Global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. In: Christopher JL Murray, Alan D Lopez, editors. World Health Organization. World Bank, & Harvard School of Public Health; 2019.
12. Souza MM, Ongaro JD, Lanes TC, Andolhe R, Kolankiewicz ACB, Magnago TSBS. Patient safety culture in the Primary Health Care. *Rev Bras Enferm.* 2019 Jan-Feb;72(1):27-34. English, Portuguese. doi: 10.1590/0034-7167-2017-0647. PMID: 30916264.
13. Nieva VF, Sorra J. Safety culture assessment: a tool for improving patient safety in healthcare organizations. *Qual Saf Health Care.* 2003 Dec;12 Suppl 2(Suppl 2):ii17-23. doi: 10.1136/qhc.12.suppl_2.ii17. PMID: 14645891; PMCID: PMC1765782.
14. Slawomirski L, N Klazinga. The economics of patient safety: From analysis to action", OECD Health Working Papers. OECD Publishing, Paris. 2022;145. doi: 10.1787/761f2da8-en.
15. Panagioti M, Khan K, Keers RN, Abuzour A, Phipps D, Kontopantelis E, Bower P, Campbell S, Haneef R, Avery AJ, Ashcroft DM. Prevalence, severity, and nature of preventable patient harm across medical care settings: systematic review and meta-analysis. *BMJ.* 2019 Jul 17;366:l4185. doi: 10.1136/bmj.l4185. PMID: 31315828; PMCID: PMC6939648.
16. Hodkinson A, Tyler N, Ashcroft DM, Keers RN, Khan K, Phipps D, Abuzour A, Bower P, Avery A, Campbell S, Panagioti M. Preventable medication harm across health care settings: a systematic review and meta-analysis. *BMC Med.* 2020 Nov 6;18(1):313. doi: 10.1186/s12916-020-01774-9. PMID: 33153451; PMCID: PMC7646069.
17. Gaal S, Verstappen W, Wolters R, Lankveld H, van Weel C, Wensing M. Prevalence and consequences of patient safety incidents in general practice in the Netherlands: a retrospective medical record review study. *Implement Sci.* 2011 Apr 6;6:37. doi: 10.1186/1748-5908-6-37. PMID: 21470418; PMCID: PMC3080333.
18. Aaraaen A, L Slawomirski, N Klazinga. The economics of patient safety in primary and ambulatory care: Flying blind. OECD Health Working Papers. OECD Publishing, Paris. 2018;106. doi: 10.1787/baf425ad-en.
19. Panesar SS, deSilva D, Carson-Stevens A, Cresswell KM, Salvilla SA, Slight SP, Javad S, Netuveli G, Larizgoitia I, Donaldson LJ, Bates DW, Sheikh A. How safe is primary care? A systematic review. *BMJ Qual Saf.* 2016 Jul;25(7):544-53. doi: 10.1136/bmjqs-2015-004178. Epub 2015 Dec 29. PMID: 26715764.
20. Garzón González G, Alonso Safont T, Zamarrón Fraile E, Cañada Dorado A, Luaces Gayan A, Conejos Míquel D, Villanueva Sanz C, Aguado Arroyo O, Jurado Balbuena JJ, Castelo Jurado M, Magán Tapia P, Barberá Martín A, Toribio Vicente MJ, Drake Canela M, San José Saras D, Mediavilla Herrera I. Is primary care a patient-safe setting? Prevalence, severity, nature, and causes of adverse events: numerous and mostly avoidable. *Int J Qual Health Care.* 2023 Apr 29;35(2):mzad019. doi: 10.1093/intqhc/mzad019. Erratum in: *Int J Qual Health Care.* 2023 May 25;35(2):mzad033. doi: 10.1093/intqhc/mzad033. PMID: 37043330; PMCID: PMC10148678.
21. Hughes RG. Tools and Strategies for Quality Improvement and Patient Safety. In: Hughes RG, editor. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses.* Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Apr. Chapter 44. PMID: 21328781.
22. Thomas EJ, Petersen LA. Measuring errors and adverse events in health care. *J Gen Intern Med.* 2003 Jan;18(1):61-7. doi: 10.1046/j.1525-1497.2003.20147.x. PMID: 12534766; PMCID: PMC1494808.
23. Mitchell PH. Defining Patient Safety and Quality Care. In: Hughes RG, editor. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses.* Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Apr. Chapter 1. PMID: 21328780.
24. Alotaibi YK, Federico F. The impact of health information technology on patient safety. *Saudi Med J.* 2017 Dec;38(12):1173-1180. doi: 10.15537/smj.2017.12.20631. PMID: 29209664; PMCID: PMC5787626.