Improving patient safety in developing countries – moving towards an integrated approach

Mustafa Elmontsri, Ricky Banarsee and Azeem Majeed
Department of Primary Care and Public Health, School of Public Health, Imperial College London, London W6 8RP, UK
Corresponding author: Mustafa Elmontsri. Email: m.elmontsri10@imperial.ac.uk

Summary
Patient safety is a major public health issue. It has also been recognised as an area for improvement. The purpose of this article is to discuss the need for developing an integrated approach to patient safety improvement in developing countries. Relevant literature to identify the common themes and patterns associated with patient safety improvement was conducted through a search of the online databases (MEDLINE, EMBASE, PUBMED and Google Scholar) for the years 2000 to 2017. Lessons and interventions from developed countries have been taken into consideration to identify the themes needed for patient safety improvement in developing countries. This review provides an integrated approach based on best practice which can be used to guide the development of a national strategy for improving patient safety. Policy makers need to focus on developing a holistic and comprehensive approach to patient safety improvement that takes into account the themes discussed in this article.

Keywords
patient safety, safety culture, developing countries, quality, healthcare safety

Introduction
Errors associated with healthcare and their effects are prevented and mitigated through patient safety interventions. There is wider evidence that substantial public health harm is caused due to poor patient safety in both developed and developing nations. In the past, research in patient safety has largely been associated with developed nations. However, there has been a shift of focus to developing countries in recent years due to the global awareness of the need to enhance patient safety standards for all patients. There is an increasing trend in global policy towards ensuring that access to care should be universal but should also be effective and of sufficient quality. Due to the increasing complexities of healthcare delivery, patient safety remains a persistent challenge in practice. Studies in developed countries provided valuable insights about issues of patient harm due to poor care but there is a need for knowledge about the epidemic of unsafe care, particularly in developing countries. This article aims to discuss the contextual factors associated with patient safety through focusing on developing a systems approach to enhance the quality and safety of care in developing countries. Studies have shown that improving systems rather than targeting individuals results in reduction in the number of medical errors.

Methods
Relevant literature to identify the common themes and patterns associated with patient safety improvement was found through a search of the online databases (MEDLINE, EMBASE, PUBMED and Google Scholar) for the years 2000 to 2017. This was part of a PhD research study in patient safety. Lessons and interventions from developed countries have been taken into consideration to identify the themes needed for patient safety improvement in developing countries.

Unsafe systems
Undoubtedly, healthcare is a hazardous business as it evolves around complex systems, advanced technology, sick patients and fallible professionals. Healthcare is classed as a ‘safety-critical industry’ as errors or design failures can lead to the loss of life. Medical errors and deficiencies in the quality of care do not represent necessarily a lack of resources or failure of professional compassion but such deficiencies and errors occur due to gaps in the whole system and the inability of organisations to change. Hence, health systems need to align all different functions and activities to deliver safe and high-quality care. No health system is free of the occurrence of medical errors and harm to patients as studies over the world have shown that harm caused by healthcare affects all health systems. It is estimated that around one in 10 patients admitted to hospital in the UK and other countries have a chance of being harmed. In Africa and the East Mediterranean, it is estimated that up to
18% of inpatient admissions were associated with adverse events. The study reported that around 3% of hospital admissions are associated with death or permanent disability.2

The cost of an unsafe health system is not only human; the financial cost is also significant. In 1999, the cost of medical error was estimated to be around $29 billion per year in the United States.8 The NHS Litigation Authority in the UK paid out more than £1.1 billion in litigation claims which is expected to rise to £1.4 billion in the coming years.15 There is a need to create a culture of systems not just a culture of safety when it comes to improving patient safety.16

In England, the Care Quality Commission plays a major role in creating a positive change in patient safety. The Care Quality Commission identifies health quality and patient safety failings in different health and social care providers through both regular and unannounced inspections. According to the Care Quality Commission,17 safety remains among its greatest concerns. The Care Quality Commission reported that 11% of NHS acute non-specialist trusts are rated as inadequate for safety. Moreover, more than half of trusts are required to improve how they respond to people’s needs and how they organise their services. In its recent report, the Care Quality Commission indicated that 60% of trusts require improvement and 7% were rated as inadequate.17

**Patient safety in developing countries**

In recent decades, policy makers around the globe have taken actions to improve safety in healthcare. In the UK, USA and Canada, regulatory agencies were established to monitor and assess the quality and safety of care. Healthcare providers are urged to set clear safety goals and performance indicators as part of an ongoing process of improvement. However, there is a rising concern about the level of harm among patients in developing countries due to the lack of accountability. An example of this, healthcare-associated infection affects hundreds of millions of people around the world and is considered one of the major issues in patient safety in developing countries.18 The World Health Organization created the World Alliance for Patient Safety in 2004. The Alliance’s first global challenge was the prevention of healthcare-associated infection: ‘Clean Care is Safer Care’ was launched in 2005 in which 72 ministries of health signed a pledge of their support to implement actions that reduce healthcare-associated infection; 30 of these were developing countries.19

Patient safety in developing countries is affected by material context, staffing issues and inter-professional working relationships.20 In other words, shortage of financial resources, shortage of medical expertise and lack of advanced information technology affects the process of healthcare delivery in such countries. Shifting the blame culture in healthcare settings is also critical to improving overall patient safety in developing countries.1 Efforts to tackle patient harm in developing countries must be scaled up and ‘knowledge must be translated into practice’ to make healthcare safer.7 In a systematic review that aimed to explore the current knowledge of patient safety and quality of care in developing countries in Southeast Asia, the authors found that four inter-related safety and quality concerns were evident. These included the risk of patient infection, medication errors/use, the quality and provision of maternal and perinatal care and the quality of healthcare provision overall.21 Developing countries lack the required resources which could result in lack of commitment to healthcare by policy makers. Adequate supplies to control and prevent infections are not readily available and the compliance with hand hygiene, blood safety or proper waste disposal is very poor.22 There is also lack of quality control in disinfection and sterilisation as well as poor coordination of care especially to seriously ill people.

**An integrated approach to patient safety**

In improving patient safety, the problem is not about not knowing what to do but rather on how to prioritise the goals and make use of the resources available. There are widely available tools, techniques, interventions and best practices that have been developed over the past few decades which have led to improvements in the process of healthcare delivery.23 Continuous learning, mindfulness and accountability are critical for improving patient safety.24 There is also an increasing need to put more emphasis on safety over productivity and on teamwork, simplification and increased standardisation along with the creation of a learning organisation as part of the efforts being undertaken to improve patient safety. However, it should be noted that health systems operate in an environment that is influenced by political, cultural, social and institutional factors which should be considered when improving patient safety.25 Thus, political support and commitment is critical for improving patient safety in developing countries. Hospitals can be high risk areas if left without proper resources. Therefore, a comprehensive, effective national programme for patient safety improvement is needed at the top level. Such a programme should set out the national regulations, guidelines, policies, strategies and specific rules.
A regulatory body at the national or regional level is essential in developing countries, which is empowered by regulations and laws with strong enforcement activities and associated standards of performance. In the UK, the National Reporting and Learning System is one of the systems used to identify problems rapidly and share solutions across the entire system. The Care Quality Commission is another independent body that monitors the social and healthcare services in the UK with the aim to enhance the quality of services through monitoring, inspection and evaluation. In Canada, the Canadian Patient Safety Institute promotes leading practices and raises awareness about patient safety through coordination with stakeholders, patients and the general public. It should also be noted that the creation of a system where there is continual learning from past events is crucial in the process of improving patient safety in developing countries. Thus, a regulatory framework is needed to ensure that organisations can learn from their past events to mitigate future risks.

Many developed nations have integrated patient safety and quality into the medical and nursing curriculum to raise awareness and improve the skills and competencies of the health workforce. The WHO has developed the Patient Safety Curriculum Guide for Medical Schools that is designed to be implemented in any medical school irrespective of geography or culture. Many medical schools around the world have integrated the curriculum into their teaching and learning materials. Thus, it is highly urgent for medical and nursing educational establishments in developing countries to implement such a guide to help raise awareness about patient safety improvement among the workforce. Training and development programmes should be available for clinical and support staff through their careers. Improving patient safety requires the changing of culture of healthcare organisations and professionals through training and engagement.

In addition to regulations, education and training, there is a need for strong patient safety leadership that encourages meaningful and sustained change towards improving the quality and safety of care. Collective leadership by all individuals within the health system is required to eliminate harm to patients. Leaders also play a significant role in promoting team performance which leads to better safety performance. There is also a need for political and health system leadership to ensure that the reliable regulatory and governance frameworks are established to improve patient safety. In addition to political leadership, organisational leadership is also crucial in directing teams towards achieving the values and goals of a health service organisation. Evidence indicates that there is a positive correlation between positive organisational performance and clinical leadership.

Research resources for addressing patient safety problems remain disproportionately low in developing countries when compared with developed nations. Support for research and development remains weak in developing countries. Thus, it is crucial for developing countries to support research activities associated with improving patient safety practices across healthcare organisations. Collaboration among medical schools and healthcare organisations is highly encouraged in developing countries to identify the root causes and develop effective programmes for patient safety improvement. Research will enable policy makers to understand the burden of unsafe care and how to tackle patient safety problems in these countries. Research also enables organisations to gather data and information so that system measurement can be achieved based on the concept of ‘what cannot be measured cannot be improved’. Data and information are identified as among the important pillars of patient safety improving in this century.

Patient and staff involvement is another important factor that should be considered by healthcare providers in developing countries. Patients can help healthcare providers improve their practices, services and decision making processes through reflecting upon their experiences. Thus, policies and strategies should be developed to encourage patient and family involvement in the process of care so that lessons can be learned. In addition to this, patients can act as sources of information when it comes to developing policies and strategies for care.

Finally, technology has become central to the process of healthcare delivery. Web-based systems have been developed to report adverse events and errors to facilitate the process of learning and communication. The use of electronic medical records in many developed nations have become central to the management of patients’ records and treatment. There are different tools and electronic devices used in intensive care units, emergency rooms and operating rooms. Thus, developing countries need to invest in healthcare technology to ensure that patients are provided with better quality of care. The introduction of technology to healthcare systems requires a strategy for enhancing the skills and competencies of the doctors and nurses across healthcare organisations to ensure that they are equipped with the right skills to operate and understand such technologies.

Summary

Errors in medicine can and will happen because to err is human. Patient safety improvement in developing
countries requires a holistic approach that starts with a clear vision from the political leadership. Improvement in patient safety can only be achieved through an integrated approach that is based on continuous improvement and learning. Reporting should also be encouraged to facilitate the process of learning from mistakes. A culture of openness, communication, teamwork and strong leadership that supports patient safety is highly needed in health systems in developing countries to ensure that patients receive reliable and safe care. Above all, patients must be placed at the centre of the care process.

Declarations

Competing Interests: None declared

Funding: This review was part of ME’s PhD research which was funded by the Government of Libya. The Department of Primary Care & Public Health at Imperial College London is grateful for the support from the NW London NIHR Collaboration for Leadership in Applied Health Research & Care (CLAHRC), the Imperial NIHR Biomedical Research Centre and the Imperial Centre for Patient Safety and Service Quality (CPSSQ).

Ethical approval: Not required.

Guarantor: AM.

Contributorship: ME wrote the first draft of the manuscript. RB and AM revised, improved and approved the final version of this manuscript.

Acknowledgements: None.

Provenance: Not commissioned; peer-reviewed by Rebecca Dyar.

ORCID iD: Mustafa Elmontsri  http://orcid.org/0000-0002-6632-9728

References

1. Elmontsri M, Almashrafi A, Banarsee R and Majeed A. Status of patient safety culture in Arab countries: a systematic review. BMJ Open 2017; 7: e013487.
2. Wilson R, Michel P, Olsen S, et al. Patient safety in developing countries: retrospective estimation of scale and nature of harm to patients in hospital. BMJ 2012; 344: e832.
3. Syed S, Gooden R, Storr J, et al. African partnerships for patient safety: a vehicle for enhancing patient safety across two continents. World Hosp Health Serv 2008; 45: 24-27.
4. Editorial: The struggle for universal health coverage. The Lancet 2012; 380: 859.
5. World Health Organization (WHO). Patient safety: making health care safer. Geneva: World Health Organization, 2017.
6. Dixon-Woods M. Why is patient safety so hard? A selective review of ethnographic studies. J Health Serv Res Policy 2010; 15: 11–16.
7. World Health Organization (WHO). Patient safety in developing and transitional countries. Geneva: World Health Organization, 2011.
8. Korn L, Corrigan J and Donaldson M. To err is human: building a safer health system. Washington: National Academy Press, 1999.
9. Nolan TW. System changes to improve patient safety. BMJ 2000; 320(7237): 771.
10. Carayon P, Hundt AS, Karsh B, et al. Work system design for patient safety: the SEIPS model. Qual Saf Health Care 2006; 15: 150-158.
11. Illingworth J. Continuous improvement of patient safety. London: The Health Foundation, 2015.
12. Institute of Medicine (IOM). Crossing the quality chasm: a new health system for the 21st century. USA: National Academy Press, 2001.
13. Berwick DM. Continuous improvement as an ideal in health care. USA: Massachusetts Medical Society, 1989.
14. Vincent C and Amalberti R. New challenges for patient safety. Safer healthcare. New York: Springer, 2016, pp.129–138.
15. NHS Litigation Authority. Report and accounts 2014/15. London: NHS Litigation Authority, 2015.
16. Mauro F. Patient safety is not a luxury. Lancet 2016; 387: 1133.
17. Care Quality Commission. The state of care in NHS acute hospitals. UK: Care Quality Commission, 2017.
18. Pittet D, Allegranzi B, Storr J, et al. Infection control as a major World Health Organization priority for developing countries. J Hosp Infect 2008; 68: 285–292.
19. World Health Organization (WHO). WHO guidelines on hand hygiene in health care: first global safety challenge: clean care is safe care. Geneva: WHO, 2009.
20. Aveling E-L, Kayonga Y, Nega A, et al. Why is patient safety so hard in low-income countries? A qualitative study of healthcare workers’ views in two African hospitals. Global health 2015; 11: 6.
21. Harrison R, Cohen AWS and Walton M. Patient safety and quality of care in developing countries in Southeast Asia: a systematic literature review. Int J Qual Health Care 2015; 27: 240–254.
22. World Health Organization (WHO). The world health report 2000: health systems: improving performance. Geneva: World Health Organization, 2000.
23. Berwick DM, Calkins DR, McCannon CJ, et al. The 100 000 lives campaign: setting a goal and a deadline for improving health care quality. JAMA 2006; 295: 324–327.
24. Weick KE and Sutcliffe KM. Managing the Unexpected: Assuring High Performance in an age of complexity. San Francisco, CA: Jossey Bass Publishers, 2001.
25. Peabody JW, Taguwalo MM, Robalino DA, et al. Improving the quality of care in developing countries. In: Jamison D, Breman J, Measham A, Alleyne M, et al. (eds) Disease control priorities in developing countries, vol. 2. Washington: Oxford University Press and the World Bank, 2006, pp.1293–1308.
26. Walton M, Woodward H, Van Staalduinen S, et al. Republished paper: the WHO patient safety curriculum guide for medical schools. Postgrad Med J 2011; 87: 317–321.
27. Patey R, Flin R, Cuthbertson BH, et al. Patient safety: helping medical students understand error in healthcare. *Qual Saf Health Care* 2007; 16: 256–259.

28. Künzle B, Kolbe M and Grote G. Ensuring patient safety through effective leadership behaviour: a literature review. *Saf Sci* 2010; 48: 1–17.

29. Tsai TC, Jha AK, Gawande AA, et al. Hospital board and management practices are strongly related to hospital performance on clinical quality metrics. *Health Aff* 2015; 34: 1304–1311.

30. Yu A, Flott K, Chainani N, et al. *Patient safety 2030*. London, UK: NIHR Imperial Patient Safety Translational Research Centre, 2016.

31. Vincent C. Patient involvement in patient safety. In: Vincent C. (ed.) *Patient safety*. 2nd ed. BMJ Books, London, 2010, pp.290–306.

32. Transforming patient safety: a sector-wide systems approach. Report of the World Innovation Summit for Health (WISH), Qatar Foundation, 2015.