International Journal of Pharmaceutical and Bio-Medical Science

ISSN(print): 2767-827X, ISSN(online): 2767-830X

Volume 02 Issue 12 December 2022

Page No: 646-651

DOI: https://doi.org/10.47191/ijpbms/v2-i12-11, Impact Factor: 5.542

The Future of Healthcare Quality and Safety

Naif Hezam Fahad Alruways[1], Geza Abdulah AlAlwey[2], Ahmad Rayan Alfuraydi[3], Suliman Ali Alhussain[4], Nasser Ibrahim Aleidi[5], Adel Abdulah Aldukhil[6], Mohammed Nasser algdairy[7], Talal Saad Almutoua[8], Moteb Khaled Aldhwyan[9], Satam awed al harbi[10]

[1,2,3,4,5,6,7,8,9,10]Ministry of Heath, Saudi Arabia

ABSTRACT

A Health Care Organization (HCO) is by definition a complex organization due to the intangible outcome of service and a mix of diverse professional personnel. Healthcare quality management is a critical requirement in the health sector. Quality principles have always been present in health care. However, quality is not a physical characteristic of a service. The use of the term "Health Care Service" rather than "Medical Care" further defines the field and positions it as an entity that can be assessed, monitored, and improved. A quality healthcare system is "accessible, appropriate, available, affordable, effective, efficient, integrated, safe, and patient-centered." Practitioners in allied health services, dentistry, midwifery, obstetrics, medicine, nursing, optometry, pharmacy, psychology, and other care providers provide health care.

Quality management in health care is a broad concept. It was initially perceived as directing healthcare personnel on what to do. However, its current meaning is to manage the care process. It refers to viewing organizational functions as a jumble of procedures and processes that can be addressed both individually and collectively. Despite the fact that various models have been proposed, Donabedian's concept of the triad of structure, process, and outcome remains the foundation of quality assessment today.

Quality management has emerged as a more pressing need than ever before, owing to the new definition of quality, which includes patient satisfaction as an outcome of service. The quality of services provided to patients is critical. The traditional view of quality control focused on defect detection, whereas the current concept focuses on defect prevention, continuous process improvement, and an outcome-driven system guided by the needs of the patients. As a result, there is an urgent need to effect a paradigm shift in the quality of health care delivery. The authorities must take the initiative to become involved in quality. Currently, quality is being addressed more in the medical field than in allied fields such as dentistry and nursing, as well as in developing countries.

KEYWORDS: Future, Healthcare, Quality, Safety

ARTICLE DETAILS

Published On:
13 December 2022

Available on:
https://ijpbms.com/

DEFINITIONS OF HEALTHCARE QUALITY

Quality healthcare is defined in a variety of formal ways. There are three widely used definitions of medical quality: the extent to which healthcare services improve intended health outcomes for people and patient populations. To accomplish this, healthcare must be person-centered, safe, effective, timely, efficient, and equitable (Hanefeld et al., 2017).

The extent to which healthcare services for individuals and populations increase the likelihood that desired health outcomes will occur and are consistent with professional knowledge (Institute of Medicine, 2001).

According to current knowledge, the amount of treatment administered increases the patient's chances of getting the desired results while decreasing the chances of getting unfavorable effects (Busse et al., 2019).

All of these definitions emphasize the link between individual and population health, the importance of our growing body of scientific knowledge and technological sophistication, the desire to improve outcomes, and the importance of the

patient-provider relationship and collaborative decision-making.

IS and Improvement Science

Professionals, leaders, and decision-makers all over the world are struggling to ensure the adoption of rapidly advancing scientific knowledge, to encourage the adoption of high-value clinical procedures, technologies, and organizational models, and to prohibit the continued use of practices that are not high-value or are no longer relevant (Bauer and Kirchner, 2020; Leppin et al., 2019). All of these initiatives aim to provide the best healthcare possible to people, both individually and collectively. Some of the names given to this expanding field of study that focuses on ways to improve healthcare practices are improvement science, dissemination and implementation research, information transfer, and knowledge translation (KT) (Check et al., 2020; Granger, 2018).

Historically, efforts to improve patient safety and quality of care have primarily focused on identifying and managing errors, improving a specific aspect of care quality (such as medication reconciliation), and reducing unjustified variations in patient outcomes (such as diabetes management) (MacKay et al., 2020). As a result, improvement science has prioritized measurement, feedback to decision-makers, and organizational change in order to address a clearly defined clinical problem or quality gap. Local efforts to improve quality are common, but the effectiveness of these efforts is frequently unstudied. Furthermore, they were unable to be shared, and the Standards for Quality Improvement Reporting Excellence (SQUIRE) regulations were not always followed (Goodman et al., 2016).

IS provides theory and methods for: (a) identifying implementation barriers and facilitators; (b) understanding influences on professional and organizational behavior; and (c) selecting techniques to optimize implementation. Eccles and Mittman (2006) define IS as "the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine care delivery" (Bauer et al., 2015; Lasinski et al., 2021; Rapport et al., 2018).

KT is a critical component of IS. Grimshaw et al. (2012) define this as "ensuring that stakeholders are aware of and use research findings to inform their health and healthcare decision-making" (Grimshaw et al., 2012). A variety of stakeholders or target audiences are recognized in this definition, including policymakers, experts (such as clinical practitioners), consumers (such as patients and unpaid careers), and researchers. KT emphasizes methods for synthesising knowledge, raising awareness, and disseminating information in a way that is acceptable to busy practitioners, such as toolkits and clinical decision support (CDS), as well as tactics for changing practitioner behavior (e.g. academic detailing, communities of practice).

It is becoming increasingly clear that efforts to increase clinician access to and use of research will be hampered unless systemic and organizational barriers are simultaneously removed (Bowen et al., 2009; Ellen et al., 2014). IS models and theories provide one-of-a-kind methodological frameworks that can be used to develop and assess a multi-level approach to the adoption, scale-up, and sustainability of evidence-based practice change (Nilsen, 2015). IS approaches are best suited for identifying and managing organizational and system-wide enablers and obstacles (Moullin et al., 2020). IS also offers measurement science to assess implementation outcomes and patient-focused outcomes (Allen et al., 2020).

IS frequently employs theoretical methodologies to better understand and explain how and why implementations succeed or fail. More than 100 different proposed IS models, frameworks, and theories have been proposed, and numerous narrative reviews have compared and contrasted them (Nilsen, 2015; Villalobos Dintrans et al., 2019). The majority of IS theory distinguishes between organizational, systemic, and organizational implementation factors. Implementation theories can help practitioners, teams, and organizations assess barriers and facilitators, identify stakeholders, and choose implementation strategies and outcomes (Moullin et al., 2020). Notably, some IS frameworks are better suited to specific implementation contexts (such as sustainability), while others may promote integration and communication across disciplinary boundaries (Harrison and Shortell, 2020; Mitchell et al., 2010).

IS complements and extends our traditional conceptual model of outcomes research by elaborating the relationship between evidence-based interventions and improved outcomes in diverse patient populations and settings, many of which also have a variety of contextual influences. Proctor et al. categorize outcomes measurement into three categories. Which are: a) the implementation results (such as acceptability, adoption, feasibility, penetration or uptake, and sustainability); b) the service results (such as efficacy, safety, and effectiveness); and c) the client results (such as satisfaction, quality of life, and mortality). A number of recent evaluations have compiled the domains and quantitative measurement characteristics of the instruments currently available to capture implementation results (Allen et al., 2020; Khadjesari et al., 2020; Lewis et al., 2015). Qualitative methods are also important in implementation research because practice improvements must be feasible and acceptable in real-world conditions, which are inherently complex and shifting. Using qualitative and mixed methods research designs, the dynamic implementation context, which includes institutional structures, stakeholder group interests and interactions, human-technology interactions, and social, political, economic, and legal circumstances, can be thoroughly examined.

Information Systems and Technology

Future KT policies that are supported by technology will become increasingly important in achieving higher quality and safety standards. Interactions between patients, doctors,

and other healthcare professionals, as well as electronic databases, email and text messages, electronic prompts and reminders, and web-based training and distribution, are examples of such technologies. These techniques can be used to push or pull. Using platforms such as social media, push tactics aim to raise awareness by disseminating evidence to specific clinician, patient, and policymaker groups. Pull methods (such as webinars to advance research literacy) aim to increase the desire for and use of evidence among the targeted consumers (Brown et al., 2020).

Technologies such as telehealth, mobile health, and CDS are examples of technologies that have the potential to improve quality and safety. During the coronavirus disease (covid-19) epidemic, telehealth was widely used, particularly in ambulatory settings. It has the potential to increase patient-provider engagement and access, particularly in underserved and rural areas (Batsis et al., 2019). Patient portals, wearables, and other patient-facing applications, as well as mobile health technology, can be used to communicate knowledge to patients and unofficial caregivers, improving adherence, healthy behaviors, and self-management (Llorens-Vernet and Miró, 2020; Lu et al., 2020). Chapman et al., 2020; Obro et al., 2020; Abbasgholizadeh Rahimi et al., 2017). Finally, CDS has the potential to improve healthcare quality and safety. A meta-analysis of controlled trials examining how CDS affects quality found that it improves the provision of guideline-concordant care, reduces ordering errors for diagnostic tests and drugs, and encourages the discontinuation of hazardous or ineffective care practices (Kwan et al., 2020).

Evidentiary Sources for Quality Whole Person Care

Proactive engagement among interprofessional teams, QI programs, and embedded implementation scientists is critical for identifying gaps in quality and safety, defining key metrics and data that should be gathered and presented to stakeholders on a regular basis, and supporting the development of both QI initiatives and implementation research. Figure 1 depicts a possible model of evidence-based data sources required for person-centered, evidence-based therapeutic decision-making. Exogenous evidence is provided by published studies, evidence-based recommendations, benchmarking against other healthcare systems, and patient registries. Endogenous evidence can be found in population data from the health system, organizational quality monitoring systems, focused implementation and practice improvement initiatives, and public health statistics. Patient electronic health records and quality indicators that are routinely reported to specific physicians and teams provide contextual information. The application of this framework can boost quality and safety activities while focusing improvement science efforts at all organizational levels.

Figure 1. Evidentiary sources for quality care.

New and Emerging Approaches to Improving Quality and Safety

Over the last ten years, healthcare executives have adopted high reliability organization (HRO) principles to reduce practice variance and eliminate safety hazards (Cochrane et al., 2017). HRO principles have been influenced by the nuclear and aviation industries. When it comes to preventing errors and harm, some industries, such as healthcare, rely on people rather than technology. They can also be unpredictable and dynamic. Finding and repairing issues and operational failures, recognizing and avoiding mistakes and near-misses, and increasing situational awareness among all staff members involved in processes where there is a risk of harm are all emphasized by HRO principles. HRO-focused health systems emphasize the importance of understanding how each component of the system interacts with one another in order to prevent errors, and they prioritize frontline workers as subject matter experts in decision-making and problem-solving (Davenport et al., 2018). There is mounting evidence that frontline healthcare workers understand macro and microsystem issues. As a result, they are well-suited to dealing with minor operational issues, which reduces errors and near-misses in clinical practice settings (Stevens et al., 2017).

Future empirical research must quantify and evaluate strategies for involving a diverse range of stakeholders at all

levels of the healthcare system (Wensing and Grol, 2019). Front-line employees frequently face time constraints. One potential solution is to increase the number of researchers embedded within health systems (Cheetham et al., 2018; Gould et al., 2020; Robinson et al., 2017). Nurse researchers are uniquely positioned to fill this role due to our expertise in clinical care delivery and knowledge of improvement science (Carter et al., 2020). One significant advantage of embedding nurse researchers is their improved ability to build relationships and form partnerships with all stakeholders, both of which are critical for leading successful quality improvement and implementation initiatives (Vindrola-Padros et al., 2017).

Capacity Building

Over the last two decades, there has been significant progress in the scientific infrastructure for research on how to improve healthcare (Davis and D'Lima, 2020). Significant funding has been provided by major funders, including the National Institutes of Health in the United States and the United Kingdom. There are numerous yearly scientific conferences on health improvement and IS, such as those organized by the Society for Implementation Research Collaboration, as well as specialized journals in this field, such as BMJ Quality and Safety and Implementation Science (SIRC). Global reporting requirements for implementation studies (StaRI) have now been established (Pinnock et al., 2017). Furthermore, there are numerous opportunities for IS and quality improvement training, including those offered by the NIH (Boehm et al., 2020). These tools can assist nurse researchers in leading translational research teams interested in implementing the best available evidence and raising the standard of care.

CONCLUSION

To promote the use of new research findings, close gaps in care quality and safety, and improve health outcomes, we must improve the integration of QI efforts with IS techniques (theories, strategies and outcomes). To this point, numerous attempts at QI have been compartmentalized, not fully utilizing IS theory and techniques. QI programs are well positioned to identify quality and safety flaws as well as generate ideas for implementation studies. Furthermore, IS provides tools for characterizing the proximal and distal consequences of practice change on a range of outcomes, with a focus on success factors (facilitators or enablers) for implementing and maintaining practice change. QI and IS are complementary strategies for continuously improving quality and safety in healthcare settings. Together, they supplement intention, effort, and effective execution to provide wise guidance to the improvement science.

REFERENCES

I. Abbasgholizadeh Rahimi S, Menear M, Robitaille H, et al. (2017) Are mobile health applications useful for supporting shared decision making in diagnostic and treatment decisions? *Global Health Action* 10: 1332259. Crossref. PubMed.

II. Allen P, Pilar M, Walsh-Bailey C, et al. (2020) Quantitative measures of health policy implementation determinants and outcomes: a systematic review. *Implementation Science* 15: 47. Crossref. PubMed.

III. Batsis JA, DiMilia PR, Seo LM, et al. (2019) Effectiveness of ambulatory telemedicine care in older adults: a systematic review. *Journal of the American Geriatrics Society* 67: 1737–1749. Crossref. PubMed.

IV. Bauer MS, Damschroder L, Hagedorn H, et al. (2015) An introduction to implementation science for the non-specialist. *BMC Psychology* 3: 32. Crossref. PubMed.

V. Bauer MS, Kirchner J (2020) Implementation science: what is it and why should I care? *Psychiatry Research* 283: 112376. Crossref. PubMed.

VI. Birken SA, Haines ER, Hwang S, et al. (2020) Advancing understanding and identifying strategies for sustaining evidence-based practices: a review of reviews. *Implementation Science* 15: 88. Crossref. PubMed.

VII. Boehm LM, Stolldorf DP, Jeffery AD. (2020) Implementation science training and resources for nurses and nurse scientists. *Journal of Nursing Scholarship: An official publication of Sigma Theta Tau International Honor Society of Nursing* 52: 47–54. Crossref. PubMed.

VIII. Bowen S, Erickson T, Martens PJ, et al. (2009) More than "using research": the real challenges in promoting evidence-informed decision-making. *Healthcare Policy* 4: 87–102.

IX. Brown A, Barnes C, Byaruhanga J, et al. (2020) Effectiveness of technology-enabled knowledge translation strategies in improving the use of research in public health: systematic review. *Journal of Medical Internet Research* 22: e17274. Crossref. PubMed.

X. Busse R, Klazinga N, Panteli D, et al. (2019) *Improving Healthcare Quality in Europe: Characteristics, Effectiveness and Implementation of Different Strategies*, Copenhagen: European Observatory on Health Systems and Policies.

XI. Carter EJ, Hessels A, Cato K, et al. (2020) Evaluation of the joint nurse scientist role across academia and practice. *Nursing Outlook* 68: 261–269. Crossref. PubMed.

XII. Chapman E, Haby MM, Toma TS, et al. (2020) Knowledge translation strategies for dissemination with a focus on healthcare recipients: an overview of systematic reviews. *Implementation Science* 15: 14. Crossref. PubMed.

XIII. Check DK, Zullig LL, Davis MM, et al. (2020) Improvement science and implementation science in cancer care: identifying areas of synergy and opportunities for further integration. *Journal of General Internal Medicine*. DOI: 10.1007/s11606-020-06138-w. Epub ahead of print 31 Aug 2020. PMID: 32869193.

XIV. Cheetham M, Wiseman A, Khazaeli B, et al. (2018) Embedded research: a promising way to create evidence-informed impact in public health? *Journal of Public Health (Oxford)* 40: i64–i70. Crossref. PubMed.

XV. Cochrane BS, Hagins MJr, Picciano G, et al. (2017) High reliability in healthcare: creating the culture and mindset for patient safety. *Healthcare Management Forum* 30: 61–68. Crossref. PubMed.

XVI. Davenport PB, Carter KF, Echternach JM, et al. (2018) Integrating high-reliability principles to transform access and throughput by creating a centralized operations center. *The Journal of Nursing Administration* 48: 93–99. Crossref. PubMed.

XVII. Davis R, D'Lima D (2020) Building capacity in dissemination and implementation science: a systematic review of the academic literature on teaching and training initiatives. *Implementation Science* 15: 97. Crossref. PubMed.

XVIII. Eccles MP, Mittman BS. (2006) Welcome to implementationscience. *Implementation Science* 1: 1. Crossref.

XIX. Ellen ME, Léon G, Bouchard G, et al. (2014) Barriers, facilitators and views about next steps to implementing supports for evidence-informed decision-making in health systems: a qualitative study. *Implementation Science* 9: 179 Crossref. PubMed.

XX. Goodman D, Ogrinc G, Davies L, et al. (2016) Explanation and elaboration of the SQUIRE (Standards for Quality Improvement Reporting Excellence) guidelines, V.2.0: examples of SQUIRE elements in the healthcare improvement literature. *BMJ Quality & Safety* 25: e7. Crossref. PubMed.

XXI. Gould MK, Sharp AL, Nguyen HQ, et al. (2020) Embedded research in the learning healthcare system: ongoing challenges and recommendations for researchers, clinicians, and health system leaders. *Journal of General Internal Medicine* 35: 3675–3680. Crossref. PubMed.

XXII. Granger BB (2018) Science of improvement versus science of implementation: integrating both into clinical inquiry. *AACN Advanced Critical Care* 29: 208–212. Crossref. PubMed.

XXIII. Grimshaw JM, Eccles MP, Lavis JN, et al. (2012) Knowledge translation of research findings. *Implementation Science* 7(50): 2. PubMed.

XXIV. Hamilton AB, Finley EP. (2019) Qualitative methods in implementation research: an introduction. *Psychiatry Research* 280: 112516. Crossref. PubMed.

XXV. Hanefeld J, Powell-Jackson T, Balabanova D (2017) Understanding and measuring quality of care: dealing with complexity. *Bulletin of the World Health Organization* 95: 368–374. Crossref. PubMed.

XXVI. Harrison MI and Shortell SM. (2020) Multi-level analysis of the learning health system: integrating contributions from research on organizations and implementation. *Learning Health Systems* e10226.

XXVII. Institute of Medicine (2001) *Crossing the Quality Chasm: A New Health System for the 21st Century*, Washington, DC: National Academies Press.

XXVIII. Khadjesari Z, Boufkhed S, Vitoratou S, et al. (2020) Implementation outcome instruments for use in physical healthcare settings: a systematic review. *Implementation Science* 15: 66. Crossref. PubMed.

XXIX. Kwan JL, Lo L, Ferguson J, et al. (2020) Computerised clinical decision support systems and absolute improvements in care: meta-analysis of controlled clinical trials. *BMJ (Clinical Research ed.)* 370: m3216. PubMed.

XXX. Lasinski AM, Ladha P, Ho VP. (2021) Provision of Defect-free care: implementation science in surgical patient safety. *Surgical Clinics of North America* 101: 81–95. Crossref. PubMed.

XXXI. Leppin AL, Mahoney JE, Stevens KR, et al. (2019) Situating dissemination and implementation sciences within and across the translational research spectrum. *Journal of Clinical Translational Science* 4:152-158. Crossref. PubMed.

XXXII. Lewis CC, Fischer S, Weiner BJ, et al. (2015) Outcomes for implementation science: an enhanced systematic review of instruments using evidence-based rating criteria. *Implementation Science* 10: 155. Crossref. PubMed.

XXXIII. Llorens-Vernet P, Miró J (2020) Standards for mobile health-related apps: systematic review and development of a guide. *JMIR Mhealth Uhealth* 8: e13057. Crossref. PubMed.

XXXIV. Lu L, Zhang J, Xie Y, et al. (2020) Wearable health devices in health care: narrative systematic review. *JMIR Mhealth Uhealth* 8: **e18907.** Crossref. PubMed.

XXXV. MacKay D, Kirkham R, Freeman N, et al. (2020) Improving systems of care during and after a

pregnancy complicated by hyperglycaemia: a protocol for a complex health systems intervention. *BMC Health Services Research* 20: 814–x. Crossref. PubMed.

XXXVI. Mitchell SA, Fisher CA, Hastings CE, et al. (2010) A thematic analysis of theoretical models for translational science in nursing: mapping the field. *Nursing Outlook* 58: 287–300. Crossref. PubMed.

XXXVII. Moullin JC, Dickson KS, Stadnick NA, et al. (2020) Ten recommendations for using implementation frameworks in research and practice. *Implementation Science Community* 1: 42. Crossref. PubMed.

XXXVIII. Nilsen P (2015) Making sense of implementation theories, models and frameworks. *Implementation Science* 10: 53. Crossref. PubMed.

XXXIX. Obro LF, Heiselberg K, Krogh PG, et al. (2020) Combining mHealth and health-coaching for improving self-management in chronic care. A scoping review. *Patient Education and Counseling*. S0738-3991(20)30563-2. DOI: 10.1016/j.pec.2020.10.026. Epub ahead of print 21 Oct 2020. PMID: 33143907.

XL. Pinnock H, Barwick M, Carpenter CR, et al. (2017) Standards for reporting implementation studies (StaRI): explanation and elaboration document. *BMJ Open* 7: e013318. Crossref. PubMed.

XLI. Proctor E, Silmere H, Raghavan R, et al. (2011) Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Administration in Policy and Mental Health* 38: 65–76. Crossref. PubMed.

XLII. Rapport F, Clay-Williams R, Churruca K, et al. (2018) The struggle of translating science into action: foundational concepts of implementation science. *Journal of Evaluation in Clinical Practice* 24: 117–126. Crossref. PubMed.

XLIII. Robinson TE, Janssen A, Harnett P, et al. (2017) Embedding continuous quality improvement processes in multidisciplinary teams in cancer care: exploring the boundaries between quality and implementation science. *Australian Health Review* 41: 291–296. Crossref. PubMed.

XLIV. Russ CM, Stone S, Treseler J, et al. (2020) Quality improvement incorporating a feedback loop for accurate medication reconciliation. *Pediatrics*. Epub ahead of print November 2019. 146: e20192464. DOI:20192410.20191542/peds.2019 2019-20192464.

XLV. Stevens KR, Engh EP, Tubbs-Cooley H, et al. (2017) Operational failures detected by frontline acute care nurses. *Research in Nursing & Health* 40: 197–205. Crossref. PubMed.

XLVI. Villalobos Dintrans P, Bossert TJ, Sherry J, et al. (2019) A synthesis of implementation science frameworks and application to global health gaps. *Global Health Research Policy* 4: 25. Crossref. PubMed.

XLVII. Vindrola-Padros C, Pape T, Utley M, et al. (2017) The role of embedded research in quality improvement: a narrative review. *BMJ Quality & Safety* 26: 70–80. Crossref. PubMed.

XLVIII. Wensing M, Grol R (2019) Knowledge translation in health: how implementation science could contribute more. *BMC Medicine* 17: 88. Crossref. PubMed.