The Overview on Effectiveness of Quality Enhancement for Enhancing Health Care and Professional Practice

Shweta P. Khare*, Deepika Kanyal

Department of Hospital Administration, Datta Meghe Institute of Higher Education & Research, Wardha, Maharashtra, India 442001

Authors Affiliation – Dept. of Hospital Administration, Datta Meghe Institute of Higher Education & Research, Wardha, Maharashtra 442001

Abstract:- Reorganizing the structure and delivery of services has been a typical focus of initiatives to improve the standard, safety, and effectiveness of health care delivery. Continuous quality improvement (CQI), a technique commonly used in the manufacturing and industrial sectors, has been applied to the health sector. Given the complexity and diversity of health systems, questions about CQI's efficacy persist despite its increased focus. This review evaluates CQI's efficacy in various healthcare environments and looks into the significance of the approach's many elements. Twentyeight RCTs assessed the effectiveness of different approaches to CQI in a variety of scenarios using a non-CQI comparison. The methodologies used, the duration of the meetings, the participants, and the type of training provided varied throughout the interventions. It was believed that bias might taint any RCT and affect the results. The benefits of CQI compared to a non-CQI comparison on clinical process, patient, and other outcomes were not great, as evidenced by the fact that less than half of RCTs showed any effect. Benefits were usually demonstrated in clinical process metrics; these were impacted by the frequency (weekly), the type of meeting (leaders discussing implementation), and the methodology (Plan-Do-Study-Act, improvement methodology). Studying health disparities caused by socioeconomic status.

Keywords:- Healthcare, Clinical Process, Continuous Quality Improvement.

I. INTRODUCTION

Governments, healthcare professionals, and the general public prioritize enhancing the quality and safety of healthcare [1, 2]. Often, this is done by investing in systemlevel quality improvements, which are modifications to the way healthcare is arranged and provided [3, 4]. While there are many other strategies that can be used, continuous quality improvement, or CQI, has drawn a lot of interest in the medical community [5] as a means of raising treatment quality while cutting costs [6–9]. Since the 1990s, quality control methods and management theories used in the manufacturing and industrial sectors have been included into the use of CQI in the health care industry.

Five main principles underpinned CQI in its initial form: a focus on organizational processes and systems rather than on individuals within the system; the use of structured problem-solving approaches that are statistically and methodologically robust; the application of multidisciplinary teamwork; employee empowerment to help identify problems and opportunities for action improvement; and a focus on "customers" (i.e., the public) through an emphasis on creating the best possible patient experience and outcomes. It is clear that the essential components of the various approaches to quality improvement have changed as the usage of CQI in healthcare has increased and new approaches have surfaced from industry (such as total quality management) [10-12]. Three crucial components were found in an analysis of CQI in healthcare [13]: systematic data-guided activities, an iterative development and testing process, and designing with local conditions in mind. Although there is considerable debate regarding the precise nature of CQI [14], a number of methodologies, including Lean Management, Six Sigma, Plan-Do-Study-Act (PDSA) cycles, and Root Cause Analysis, cover the essential ideas and have been applied to the field of health.

A number of systematic studies have evaluated the application of various strategies to aid in raising the standard of healthcare, emphasizing the variations in components incorporated and providing explanations of the techniques employed [15–17]. Assessors of CQI were working with particular populations or in clinical settings, and they were taking into account the application, efficacy, and obstacles and enablers to CQI implementation [28, 30]. None evaluated the benefits of individual components, compared the efficacy of CQI in various health contexts, or took into account the real influence of the variables that could affect COI's effects. In consideration of these drawbacks, we conducted a thorough analysis of the data to evaluate the efficacy of various CQI strategies for advancing professional practice and enhancing patient outcomes in any healthcare context. Our goal was to investigate how the numerous elements that make up the methods and influence how they are applied, potentially serving as enablers or Volume 9, Issue 6, June – 2024

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impediments to change. These elements were developed using criteria for assessing quality improvement initiatives [18] and previously discovered common elements throughout CQI [19]. Additionally, we planned to take into account the impact that socioeconomic health disparities have on the efficacy and application of CQI techniques in enhancing healthcare.

It is commonly acknowledged that socioeconomic disparities play a significant role in influencing health and the utilization of social and health services. In an attempt to close the growing health disparity, more and more attention is being paid to taking health inequalities into account when creating health and social care programs [20].

II. METHODS

> Search

Our systematic review adhered to accepted guidelines and reporting standards [21,22], and the procedures were documented in a research protocol that was registered on PROSPERO (CRD42018088309). Eleven electronic databases, including MEDLINE (through Ovid), CINAHL, EMBASE, AMED, Academic Search Complete, HMIC, Web of Science, PsycINFO, Cochrane Central Register of Controlled Trials, LISTA, and NHS EED, were searched in order to find studies (see Additional file 2 for an example of search strategy). Only English-language research published between February 23rd, 2019 and the start of all databases' existence were included in the search. By looking through the reference lists of all the included papers and pertinent systematic reviews, further references were found. Published study protocols were checked, and linked companion articles were found.

➤ Study Selection

Research assessing the efficacy of CQI that involved teams of health professionals in any type of healthcare setting and were randomized controlled trials (RCTs) qualified for inclusion. Iterative development and testing, systematic data-guided activities, and an emphasis on processes or systems rather than patients individually were all required as recognized components of CQI [23]. Different CQI tactics, the status quo of managing organizational change without intervention, or other non-CQI treatments could serve as comparators. Research had to evaluate patient outcomes (such as pain, health-related quality of life, and mortality) or health care professional performance (such as following recommended practice or care process).

Only those abstracts and conference proceedings that disclosed sufficient information about their approach and findings were taken into consideration. Two steps were carried out in the selection of studies. Using predetermined criteria, the titles and abstracts of the papers found through the searches were first separately evaluated by two reviewers. Reviewers discussed disagreements, and if necessary, a third, impartial reviewer arbitrated them. Second, studies' manuscripts that seemed to fit the requirements for selection were retrieved after title and abstract screening. The same method used to evaluate titles and abstracts was then applied to these for screening.

Category	Inclusion Standard	Exclusion Standard
Participants	Teams for health experts in charge of enhancing public health	Groups that are limited to students, don't
	and/or administering patient care in any type of medical setting	involve medical professionals, or take
		care settings
		cure settings.
Intervention	CQI, which consists of (i) evaluating and reviewing the impact of	Interventions focused on enhancing
	changes through measurement and data analysis	management, administrative, or other non-
	(ii) examining and analysing a system or process for providing	clinical care-related procedures.
	clinical care in order to find areas for improvement and sources	
	of variance	
	(iii) a systematic process enhancement method or problem-	
	solving approach which is develop and test modifications to the	
	work process; (iv) a continuous process with incremental steps	
Comparison	Organizational change management techniques include the status	
	quo (non-active control), alternative CQI techniques, or other	
	non-CQI interventions.	
Outcome	Any objective metric for assessing the performance of healthcare	
	professionals (such as following guidelines or prescribed	
	procedures) or patient outcomes (such as pain, function, health-	
	related quality of life, or mortality).	
Study design	RCTs	

Table 1 – Criteria of Study Selection

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> Data Synthesis

The synthesis focused on studies that compared a CQI intervention with a non-CQI intervention that was either considered current usual practice (i.e., without an intervention to manage organizational change) or another non-CQI intervention to manage change in order to evaluate the relative benefits of adding CQI and minimize the effects of heterogeneity.

A narrative synthesis was employed to synthesize the investigations, and the outcomes of the included studies were tabulated. Three categories of outcomes were identified: patient outcomes, clinical process outcomes, and other outcomes.

The ratio of outcomes showing a statistically significant difference at the 5% significance level on the supplied summary measures (i.e., risk ratios or mean difference with 95% confidence intervals) was then used to arrange all outcomes into five groups. To ascertain differences, two methods were used: either the change in CQI from baseline to end of study (first data point after intervention) or a comparison of CQI vs control at the conclusion of the trial with no statistically significant difference at baseline (baseline versus end of study).

The outcomes of the difference within difference were applied if both ways were given. An equivalency assessment was done visually in cases when baseline values were not compared quantitatively.

Subgroup analyses are slated to concentrate on research evaluating the health environment, the CQI methodology, important CQI elements that were previously found to be consistent across models and evaluated in studies (such as the nature and frequency of meetings and training), as well as socioeconomic health disparities. The story centered on the RCTs that showed a statistically significant advantage from CQI in half or more of the outcomes assessed, as well as those that showed no statistically significant difference between the CQI intervention and the comparator. The number and percentage of studies in each group served as the presentation of the synthesis.

This strategy was employed since the key outcome measures of the RCTs were rarely identifiable, and it was believed that demonstrating an impact on at least half of the outcomes would restrict the possibility of reporting particular outcomes selectively when benefits were evident. Because of the studies' heterogeneity, especially in the therapies and outcomes evaluated, meta-analyses were not generated.

III. RESULTS

➤ Care Setting

CQI appears to function a little bit better in primary care than in secondary care when it comes to the care environment.

Over 30% of RCTs in primary care reported a statistically significant improvement in half or more of the clinical process (4 RCTs) and patient outcomes (2 RCTs), compared to less than 23% for secondary care (1 RCT) and clinical process (2 RCTs). It was less clear how effective CQI was in other settings (such social care, tertiary care, or other) due to the scant research that was available. [24-27].

> CQI Models

The most widely utilised CQI models were PDSA and the MoI. For clinical process outcomes, PDSA was found to be more successful than MoI in at least half of the RCTs (36.4% (4 RCTs) versus 14.3% (1 RCT) [28], respectively). However, for patient outcomes, the opposite was observed (11.1% (1 RCT) [29] versus 40% (2 RCTs) [30,31], respectively. In 33.3% of RCTs, two other unidentified CQI models showed promise in influencing half or more of the clinical process outcomes.

Training Type And Duration

The most common training method and one with the biggest impact on results was in-person instruction, which improved outcomes in half or more of 42.8% (6 RCTs) and 42.9% (3 RCTs) of RCTs that evaluated patient outcomes and clinical process, respectively. Of the 14.3% (1 RCT) [31] of RCTs evaluating clinical process outcomes, person plus training with extra components was beneficial in half or more of the outcomes. While a variety of training times were employed, shorter training times seemed to be more beneficial.

In 75% (3 RCTs) and 50% (1 RCT) of RCTs evaluating clinical process outcomes, training sessions lasting one to three hours and four to eight hours, respectively, were useful in improving half or more outcomes. Similarly, 33.3% (1 RCT) of RCTs evaluating patient outcomes indicated that 1 to 3 hours of training was helpful. Half or more of the outcomes in 24.9% (3 RCTs) [32] and 16.6% (2 RCTs) of RCTs evaluating the clinical process and patient outcomes, respectively, benefited from training whose duration was not specified.

Meeting Type and Frequency

The kind of meeting and frequency of meetings appear to affect the effectiveness of CQI. When it was clear that meetings included a discussion on the implementation of the improvement initiatives, a higher number of RCTs (40%/6 RCTs) showed a statistically meaningful gain on or greater than half of the clinical procedure outcomes reported than when it was not covered (0%). When it came to measuring patient outcomes, meetings without a description had a statistically significant beneficial influence on half or more of the results in more RCTs than meetings with a description (66.6% (2 RCTs)) [33]. Volume 9, Issue 6, June – 2024

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Compared to alternative meeting schedules, it appeared to be more successful in producing statistically significant improvements in half or more of the outcomes.

Meetings that did not specify how frequently they occurred, however, had a higher impact on RCTs that reported patient outcomes (42.9% (3 RCTs)).

IV. DISCUSSION

The problems of a growing service demand, financial constraints, and an ongoing desire for efficiency have moulded health and social care provision more and more [35]. Various strategies have been implemented to address disparities in service delivery and preserve the comprehensiveness and quality of care [36]. The focus has recently switched to enhancing services by increasing organizations' capabilities and capacity by strengthening their infrastructure, knowledge, and skills [37].

Our results seem to be in line with those of earlier systematic reviews on advancing professional practice and enhancing health care outcomes [38]. These reviews also address issues with showing limited benefit, the impact of various components [39], and/or the causes of ongoing uncertainties. When it came to CQI, cooperation and communication among medical experts seemed to be crucial. We discovered that meetings aided in the implementation of CQI, especially when they were presided over by participant leaders, who were essential members of multidisciplinary teams that concentrated on implementing initiatives through cooperative working.

Regular scheduling of these meetings—weekly instead of monthly, for example—seemed to increase the efficacy of the adopted CQI strategy. The benefits of person-focused, in-person CQI initiatives were reported, which further reinforced the importance of direct communication. These initiatives were thought to help improve competence and motivation and appeared to be more effective than other forms of training, such as web-based training or combinations of training methods [40]. Through various interactions amongst those participating in CQI, other researchers have discovered similar effects [41-43]. When adopting CQI, audit and feedback have been identified as key facilitators. Increasing the degree of assistance has been shown to be more successful in assisting with the integration of changes into practice.

The apparent benefits of using CQI in primary care may be explained by the influence of collaboration and active communication, as team structures in this setting mirror those used to operationalize CQI methods [44]. Additionally, other mechanisms, such as the Quality and Outcomes Framework, provide incentives for such initiatives. Despite the fact that CQI can be approached in a variety of ways, we found that the most commonly utilised models were PDSA and MoI, which improved patient outcomes and the clinical process in one-third of the trials, respectively. It has been previously established that PDSA is a useful strategy for enhancing health outcomes [45]. It has proven challenging to explain why PDSA and MoI are used and why they work well in particular circumstances.

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This could be due to the fact that CQI models are regularly modified during implementation, making the distinctions less obvious, that models commonly have overlapping characteristics [17], and that the specifics of the approach used are typically reported in an incomplete or inconsistent manner. The body of research supporting the usefulness of CQI in the healthcare sector has increased recently, although there hasn't been any appreciable shift in this regard. This could be the result of a number of things, but it most likely reflects the heterogeneous nature of the studies conducted, as evidenced by the populations examined, the methods for CQI employed, and the results that were published.

It is common outside of public health research for RCTs to not publish socio-economic health inequalities; this suggests that the RCTs' major focus was on the health condition, rather than the other underlying determinants of population health. There could be other reasons for the restricted impact of CQI programs. First, health and social care organizations are complicated, both locally and nationally, and may not have the structure, resources, or willpower to successfully and consistently operationalize CQI programs [46]. There is a possibility that CQI approaches will be implemented differently because they can be customized to fit local circumstances. This could lessen the CQI approach's natural advantages, restrict its applicability, and make research more challenging.

Second, the duration of CQI efforts is frequently brief, which limits the ability to influence the many outcome measures evaluated in RCTs, especially patient-based outcomes. Third, the relevance of various CQI components—such as audits, feedback, meetings, and training—has led to their acceptance as normal management procedures. As a result, they are becoming a bigger component of various management strategies that are contrasted in trials, thereby accounting for their effects. Fourth, it has been challenging to elucidate the factors that contribute to the efficacy of particular CQI strategies. This may be a result of their many adjustments made during implementation and the fact that the approach's specifics were frequently provided insufficiently.

While a practical approach to CQI application could be required in practice, sticking to the fundamentals and providing more thorough reporting of the various models employed in trials would aid in identifying the most successful models and aspects. Fifth, there may be ambiguity in the conclusions due to the scant evidence that was found and its poor quality. The majority of RCTs had an uncertain or high risk of bias, which might be attributed to either the inherent difficulties in conducting RCTs of CQI initiatives or a failure to recognize the need of assuring and disclosing the rigor utilised in carrying out the study methodology. It's possible that the difficulties involved make using RCTs to assess CQI less effective, and that Volume 9, Issue 6, June – 2024

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alternative methods would work better with these kinds of experimental investigations [47-49].

V. CONCLUSION

Continuous quality improvement is a useful and proven technique that is gaining more and more attention in the health care sector. It can assist increase the quality and efficiency of industrial processes. Doubt results from the inadequate evaluation of the benefits of its use in health. Even though they were limited, it's certain that in certain instances, they greatly enhanced the way healthcare was provided. More research conducted independently is required to better understand the CQI techniques that can be applied to improve the standard and efficacy of service delivery.

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Conflict of Interest –

There is no conflict of interest

REFERENCES

- [1]. NHS England. NHS five year forward view. England: NHS; 2014.
- [2]. Academy of Medical Royal Colleges. Quality improvement-training for better outcomes. 2016.
- [3]. Ham C, Berwick D, Dixon J. Improving quality in the English NHS a strategy for action. London: The Kings fund; 2016.
- [4]. Schneider A. How quality improvement in health care can help to achieve the millennium development goals. World Health Organization. 2006;84(4): 257–336.
- [5]. Ferlie EB, Shortell SM. Improving the quality of health care in the United Kingdom and the United States: a framework for change. Milbank Q. 2001; 79(2):281–315.
- [6]. Cox S, Wilcock P, Young J. Improving the repeat prescribing process in a busy general practice. A study using continuous quality improvement methodology. Qual Health Care. 1999;8(2):119.
- [7]. Rokoske FS, Schenck AP, Hanson LC. The potential use of autopsy for continuous quality improvement in hospice and palliative care. Medscape J Med. 2008;10(12):289.
- [8]. Manyazewal T, Mekonnen A, Demelew T, Mengestu S, Abdu Y, Mammo D, et al. Improving immunization capacity in Ethiopia through continuous quality improvement interventions: a prospective quasiexperimental study. Infect Dis Poverty. 2018;7(1):119.
- [9]. Werth GR, Connelly DP. Continuous quality improvement and medical informatics: the convergent synergy. Proc Annu Symp Comput Appl Med Care. 1992:631–5.

[10]. Wallin L, Bostrom AM, Wikblad K, Ewald U. Sustainability in changing clinical practice promotes evidence-based nursing care. J Adv Nurs. 2003;41(5):509–18.

https://doi.org/10.38124/ijisrt/IJISRT24JUN386

- [11]. Larson JS, Muller A. Managing the quality of healthcare. J Health Health Serv Adm. 2002;25(3):261–80.
- [12]. Zhan L, Finch L. Accelerated education in nursing: challenges, strategies, and future directions. New York: Springer; 2012.
- [13]. Taylor MJ, McNicholas C, Nicolay C, Darzi A, Bell D, Reed JE. Systematic review of the application of the plan-do-study-act method to improve quality in healthcare. BMJ Qual Saf. 2014;23(4):290.
- [14]. Card AJ, Ward J, Clarkson PJ. Successful risk assessment may not always lead to successful risk control: a systematic literature review of risk control after root cause analysis. J Healthc Risk Manag. 2012;31(3):6–12.
- [15]. Deblois S, Lepanto L. Lean and six sigma in acute care: a systematic review of reviews. Int J Health Care Qual Assur. 2016;29(2):192–208.
- [16]. Cheung YY, Riblet NBV, Osunkoya TO. Use of iterative cycles in quality improvement projects in imaging; systematic review. J Am Coll Radiol. 2018; 15(11):1587–602.
- [17]. O'Neill SM, Hempel S, Lim YW, Danz MS, Foy R, Suttorp MJ, et al. Identifying continuous quality improvement publications: what makes an improvement intervention 'CQI'? BMJ Qual Saf. 2011;20(12):1011–9.
- [18]. Hempel S, Shekelle PG, Liu JL, Sherwood Danz M, Foy R, Lim YW, et al. Development of the Quality Improvement Minimum Quality Criteria Set (QIMQCS): a tool for critical appraisal of quality improvement intervention publications. BMJ Qual Saf. 2015;24(12):796–804.
- [19]. Whitehead M, Bambra C, Barr B, Bowles J, Caulfield R, Doran T, et al. Due north: report of the inquiry on health equity for the north. 2014.
- [20]. NIHR CLAHRC North West Coast. NIHR CLAHRC North West Coast Health Inequalities Assessment Toolkit (HIAT). 2017.
- [21]. Higgins J, Green S. Cochrane handbook for systematic reviews of interventions: Wiley; 2011.
- [22]. Marshall IJ, Kuiper J, Wallace BC. Robot Reviewer: evaluation of a system for automatically assessing bias in clinical trials. J Am Med Inform Assoc. 2015; 23(1):193–201
- [23]. Rubenstein L, Khodyakov D, Hempel S, Danz M, Salem-Schatz S, Foy R, et al. How can we recognize continuous quality improvement? Int J Qual Health Care. 2014;26(1):6–15.
- [24]. Hunter SB, Rutter CM, Ober AJ, Booth MS. Building capacity for continuous quality improvement (CQI): a pilot study. J Subst Abus Treat. 2017; 81:44–52
- [25]. Kane RL, Huckfeldt P, Tappen R, Engstrom G, Rojido C, Newman D, et al. Effects of an intervention to reduce hospitalizations from nursing homes: a randomized implementation trial of the INTERACT program. JAMA Intern Med. 2017;177(9):1257–64.

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- [26]. Rubenstein LV, Meredith LS, Parker LE, Gordon NP, Hickey SC, Oken C, et al. Impacts of evidence-based quality improvement on depression in primary care: a randomized experiment. J Gen Intern Med. 2006;21(10):1027–35.
- [27]. Carlhed R, Bojestig M, Wallentin L, Lindström G, Peterson A, Åberg C, et al. Improved adherence to Swedish national guidelines for acute myocardial infarction: the Quality Improvement in Coronary Care (QUICC) study. Am Heart J. 2006;152(6):1175–81.
- [28]. Solomon DH, Losina E, Lu B, Zak A, Corrigan C, Lee SB, et al. Implementation of treat-to-target in rheumatoid arthritis through a learning collaborative: results of a randomized controlled trial. Arthritis Rheum. 2017; 69(7):1374–80.
- [29]. Kennedy C, Ioannidis G, Thabane L, Adachi JD, Marr S, Giangregorio LM, et al. Successful knowledge translation intervention in long-term care: final results from the vitamin D and osteoporosis study (ViDOS) pilot cluster randomized controlled trial. Trials. 2015; 16:214.
- [30]. Barceló A, Cafiero E, de Boer M, Mesa AE, Lopez MG, Jiménez RA, et al. Using collaborative learning to improve diabetes care and outcomes: the VIDA project. Prim Care Diabetes. 2010;4(3):145–53.
- [31]. Noël PH, Romero RL, Robertson M, Parchman ML. Key activities used by community based primary care practices to improve the quality of diabetes care in response to practice facilitation. Qual Prim Care. 2014;22(4):211–9
- [32]. Canovas J, Hernandez P, Botella J. Effectiveness of internal quality assurance programmes in improving clinical practice and reducing costs. J Eval Clin Pract. 2009; 15:813–9.
- [33]. Meropol SB, Schiltz NK, Sattar A, Stange KC, Nevar AH, Davey C, et al. Practice-tailored facilitation to improve pediatric preventive care delivery: a randomized trial. Pediatrics. 2014;133(6): e1664–75.
- [34]. Coronado GD, Vollmer WM, Petrik A, Taplin SH, Burdick TE, Meenan RT, et al. Strategies and opportunities to STOP colon cancer in priority populations: design of a cluster-randomized pragmatic trial. Contemp Clin Trials. 2014; 38(2):344–9.
- [35]. Vecchi S, Agabiti N, Mitrova S, Cacciani L, Amato L, Davoli M, et al. Audit and feedback, and continuous quality improvement strategies to improve the quality of care for type 2 diabetes: a systematic review of literature. Epidemiol Prev. 2016;40(3–4):215–23.
- [36]. Knudsen SV, Laursen HVB, Johnsen SP, Bartels PD, Ehlers LH, Mainz J. Can quality improvement improve the quality of care? A systematic review of reported effects and methodological rigor in plan-do-study-act projects. BMC Health Serv Res. 2019;19(1):683.
- [37]. Gardner K, Sibthorpe B, Chan M, Sargent G, Dowden M, McAullay D. Implementation of continuous quality improvement in aboriginal and Torres Strait islander primary health care in Australia: a scoping systematic review. BMC Health Serv Res. 2018;18(1):541.

[38]. Nunes JW, Seagull FJ, Rao P, Segal JH, Mani NS, Heung M. Continuous quality improvement in nephrology: a systematic review. BMC Nephrol. 2016;17(1):190.

https://doi.org/10.38124/ijisrt/IJISRT24JUN386

- [39]. Candas B, Jobin G, Dube C, Tousignant M, Abdeljelil AB, Grenier S, et al. Barriers and facilitators to implementing continuous quality improvement programs in colonoscopy services: a mixed methods systematic review. Endosc Int Open. 2016;4(2):E118– 33.
- [40]. Care Quality Commission. Quality improvement in hospital trusts: sharing learning from trust on a journey of QI. 2018.
- [41]. Kellams A, Parker MG, Geller NL, Moon RY, Colson ER, Drake E, et al. TodaysBaby quality improvement: safe sleep teaching and role modeling in 8 US maternity units. Pediatrics. 2017;140(5).
- [42]. Jones B, Horton T, Warburton W. The improvement journey. Why organisation wide improvement in health care matters, and how to get started; 2019.
- [43]. Boonyasai R, Windish D, Chakraborti C, Feldman L, Rubin H, Bass E. Effectiveness of teaching quality improvement to clinians: a systematic review. JAMA. 2007;298(9):1023–37.
- [44]. Flottorp S, Jamtvedt G, Gibis B, McKee M. Using audit and feedback to health professionals to improve the quality and safetty of health care, Policy summary prepared for the Belgian EU Presidency Conference on Investing in Europe's health workforce of tomorrow: scope for innovation and collaboration (La Hulpe, 9– 10 September 2010): European Obervatory on Health Systems and Policies; 2010. Contract No.: Policy Summary 3.
- [45]. Geboers H, Grol R, Bosch W, Hoogen H, Mokkink H, Montfort P, et al. A model for continuous quality improvement in small scale practice. Qual Health Care. 1999;8(1):43–8.
- [46]. Solberg LI, Kottke TE, Brekke ML. Will primary care clinics organize themselves to improve the delivery of preventive services? A randomized controlled trial. Prev Med. 1998;27(4):623–31.
- [47]. Dawda P, Jenkins R, Varnam R. Quality improvement in general practice. An inquiry into the quality of general practice in England. Discussion paper. 2010.
- [48]. Boaden R, Harvey G, Moxham C, Proudlove N. Quality improvement: theory and practice in healthcare.: NHS Institute for Innovation and Improvement; 2008.
- [49]. Braithwaite J, Churruca K, Long J, Ellis L, Herkes J. When complexity science meets implementation science: a theoretical and empirical analysis of systems change. BMC Med. 2018;16.
- [50]. Lipsitz L. Understanding Helth care as a complex system. The foundation of unintended consequences. JAMA. 2012; 308:243.