

The Use of Performance Improvement Methodologies in Healthcare Quality Initiatives:

(Review Article)

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Abstract

Background: Benchmarking is widely acknowledged as a good approach for identifying strengths and shortcomings across all levels of the healthcare system. Although there is an increasing interest in the practice and research of benchmarking, its impact on the quality of treatment has not been well explained. Consequently, we performed a methodical analysis of existing literature to combine the data on the correlation between benchmarking and enhancing quality.

Aim of Study: This study aims to gather information on the measures that might be used to enhance quality improvement.

Methods: We conducted a comprehensive search across three databases (PubMed, Web of Science, and Scopus) to identify papers that examined the influence of benchmarking on the quality of care, including both the procedures and results. After evaluating the articles for inclusion, we performed data analysis, quality assessment, and critical synthesis in accordance with the PRISMA criteria for conducting a systematic literature review.

Results: There were a total of 17 items that were found. All studies found a favorable correlation between the use of benchmarking and the enhancement of quality in terms of processes (N=10), outcomes (N=13), or both (N=7). Out of the 12 studies analyzed, most of them included an additional intervention, in addition to benchmarking, to encourage the enhancement of quality. The treatments varied from participant meetings to quality improvement plans and cash incentives. More than half of the trials (N=10) used a mix of various therapies.

Conclusion: The findings derived from this analysis indicate that benchmarking in healthcare is an expanding area, and more investigation is necessary to have a deeper comprehension of its impact on enhancing quality. Moreover, our research suggests that benchmarking may promote enhancements in quality, and that additional treatments, in conjunction with benchmarking, seem to strengthen this improvement. While

this study suggests that integrating performance assessment with treatments might improve quality, future research should focus on analyzing the individual effect of these interventions.

Key Words: Performance improvement – Healthcare quality initiatives – Benchmarking – Review.

Introduction

BENCHMARKING was first introduced in the late 1970s with the aim of decreasing production costs in the manufacturing industry. Since then, it has been widely used as a means of achieving ongoing quality improvement across all industries and domains [1]. Various definitions and taxonomies of benchmarking have been presented in international literature [2-6]. However, they all revolve around a common idea, which is the ongoing practice of evaluating products, services, and practices against the most formidable competitors or companies acknowledged as leaders in the industry [2].

Since the 1990s, benchmarking has been used in the healthcare industry to measure and compare clinical results across businesses. Its purpose is to facilitate learning and the adoption of best practices from one another [1,7]. Benchmarking has evolved into a systematic approach in the United States and the United Kingdom, aimed at comparing hospital results to control costs. However, the practice of comparing outcome indicators has been in existence since the seventeenth century. The growing use of benchmarking was driven by several considerations, such as the need to discern and gain a deeper understanding of disparities in healthcare practices and results across different regions, both within and across them [9]. When utilized correctly, bench-

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marking may also be used to identify unnecessary differences and encourage their elimination [10,11].

Currently, benchmarking is used as a strategy for enhancing quality. It involves implementing changes that result in improved patient outcomes, enhanced system performance, and greater professional growth. When benchmarking is used for this purpose, it involves a sequence of processes, including identifying the top performers via data analysis and conducting thorough qualitative investigations into the variables that contribute to their exceptional performance and quality improvement. Performance indicators enable the transformation of quality into measurable measurements, which may provide simpler insights into a broader area of focus and simplify comparisons across different businesses [13,14]. The indicators presenting benchmarking data may be targeted towards various users with diverse decision-making capacities, including patients, doctors, and policy makers [1,15], depending on the specific scenario. Comparative performance data on specific clinical processes can influence clinicians to participate in various quality improvement activities, such as implementing audit and feedback strategies and engaging in professional development programs. Meanwhile, governments and regional authorities may use the reporting of specific outcomes to inform their policy-making decisions [15,16,17].

Therefore, it is essential that performance indicators effectively communicate the appropriate information to the relevant stakeholders. An additional crucial factor that enhances the effectiveness of benchmarking is the creation of dependable and accurate performance indicators that are suitable for utilization [13,17]. Nevertheless, this continues to be a difficult task, particularly when it pertains to comparing different nations, since they may vary in the coding and methodology used to compute indicators [14,18]. Furthermore, research has shown that cooperation among participants in benchmarking is a crucial element in the effective adoption and use of benchmarking in the healthcare industry [19,20].

Aim of work:

Several assessments have shown that the combination of benchmarking and public reporting has a modest to moderate impact on improving quality [21,22]. Nevertheless, publicly comparing the performance of people or organizations may potentially generate controversy, as it may prevent weaker performers from making improvements if they perceive that their image has been tarnished (referred to as “naming and shaming”) [23,24,25]. Alternatively, public reporting of performance may serve as a catalyst for quality improvement when it highlights

exemplary achievement, such as via recognition and praise (“naming and faming”) [26].

Methods

In order to identify papers, we conducted searches in three databases: PubMed, Web of Science, and Scopus. The search phrases and keywords were determined based on the existing literature on benchmarking. In Additional file 1, we provided the search algorithms used for each database, together with the corresponding number of studies retrieved. The papers we examined validate that benchmarking is a valuable tool that has not been consistently utilized across all levels of the healthcare system [1].

Small-scale untethered mobile robots for endovascular interventions:

The majorities of the projects were volunteer in nature and followed a bottom-up strategy, mostly involving medical societies and academics. To be more precise, our research indicates that benchmarking data was mostly used at the individual department and hospital level, often in the context of small-scale pilot studies with a limited number of participants [27,28,29]. This prompts inquiries about the participation of influential decision makers in the utilization of benchmarking. Significantly, these investigations were restricted to Europe and North America in terms of geographical coverage.

Investigation of the implementation of benchmarking:

Healthcare systems globally are facing a growing need to find dependable approaches for assessing the quality of treatment [30,31]. This might be attributed in part to the growing accessibility of data produced at various levels of the healthcare system. Benchmarking and performance improvement have been recognized as a burgeoning field of study, particularly in Europe. However, this topic has received less focus compared to the discovery of performance indicators that may effectively benchmark information across many clinical domains [16].

Once the indications have been identified, the next step is to determine the target users and the specific purpose for which they will be used. The information requirements of users may vary depending on their ability to make decisions based on benchmarking data. Therefore, the effectiveness of this evidence-based information in guiding actions is still a subject of debate. Moreover, specific research [32,33] has shown that decision makers in the healthcare system typically did not make full use of benchmarking data. However, healthcare practitioners may be hesitant to use benchmarking data into

their practices to modify behavior and processes [34]. The clinician's subjective assessment may also influence the selection of performance areas to focus on for enhancement [35].

Comparative analysis and enhancement of performance and quality:

All publications included in this evaluation demonstrated enhanced performance subsequent to the dissemination of benchmarking data. However, it is possible to argue that the long-term viability of the claimed enhancement in quality may vary between studies due to differences in the duration of follow-up and the extent of performance monitoring. For example, in five of the publications, the performance was observed for a very little duration, ranging from 6 months to 2 years [36-40]. While these studies confirm the effectiveness of benchmarking as a quality improvement tool, researchers have suggested that the observed performance improvement may be due to the specific experimental conditions and the novelty of the initiative, rather than a sustained impact of performance measurement [41,42]. Conversely, studies with a longer duration of follow-up have also shown a consistent and lasting increase in performance [33,38,40,41,43]. Curiously, only one paper specifically addressed the ability of benchmarking to decrease regional variance [11].

Moreover, our findings indicate that quality enhancement was accomplished not just by organizations that were already operating well, but also by those that had previously performed below the ideal level [38,39]. There has been a longstanding speculation that the use of continuous performance monitoring, together with interventions like discussing benchmarking findings, is linked to sustained improvement in quality [43,44,45]. Most of the publications in our findings described the use of these treatments, along with benchmarking. These interventions included various activities such as meetings, quality improvement plans, and audit & feedback.

The publications most often said that meetings amongst benchmarking participants were the preferred intervention. While this intervention primarily focuses on providing support rather than taking direct action to improve quality, the interactions between benchmarking participants do enable the direct exchange of experiences and the transfer of best practices. This encourages organizations to become more involved in activities that are tailored to their specific performance needs. In addition, our findings indicated that meetings were often integrated with other interventions, such as quality improvement strategies and financial incentives. Italy's Tuscany

area utilizes publicly disclosed benchmarking data to facilitate talks among various stakeholders. Additionally, they use pay for performance programs for local decision-makers and physicians [40,44,46]. While many acknowledge the benefits of benchmarking and quality improvement efforts, there is still debate on the precise influence they have on quality. Consequently, establishing a direct cause-and-effect link between benchmarking and quality is challenging [38,43,47].

The correlation between process and result indicators:

Finally, our analysis found that there is a correlation between improved performance on process indicators and better outcomes, especially in primary care and specific clinical areas like diabetes and colorectal cancer [42,44,45,46,47]. It is commonly acknowledged that systems of care have a significant impact on patient outcomes [48,49]. Nevertheless, it has been contended that results are indicative of a diverse range of factors, some of which are associated with healthcare while others are not. In addition, it should be noted that the quantifiable processes of care may only account for a portion of all the processes that impact a certain result [50]. Considering the continuous evolution of performance management systems and the emergence of new measures such as patient reported data, population based indicators, and measures on resilience and sustainability, it is reasonable to anticipate a shift in the connection between processes and outcomes.

Limitations:

This literature study included peer-reviewed research published in the English language, while excluding grey literature and journals written in other languages. In addition, the findings indicate a scarcity of research on the correlation between benchmarking and quality improvement, despite the increasing global interest and study in this area. Several papers emphasize the practical steps to promote benchmarking as a means to learn from exemplary practices [51], establish strategic planning [40, 52], and enhance reputation via recognition and peer learning [26]. Nevertheless, these publications provide precise guidelines on the use of benchmarking, focusing on its methodology rather than presenting findings and consequences of its implementation. Another constraint is to the reliability of the techniques used, since the majority of papers rely on observational analysis and are thus vulnerable to methodological biases.

Conclusion:

The paucity of papers yielded by this systematic literature analysis indicates that further inves-

tigation is required to fully investigate the impact of benchmarking in healthcare. Additionally, our research suggests that benchmarking may promote the enhancement of quality, and those supplementary measures, such as meetings and audit & feedback, can further strengthen this improvement.

With the increased availability of data, healthcare systems must prioritize the identification of dependable performance indicators that cater to the diverse demands of stakeholders, who are ultimately the end-users of benchmarking information. Therefore, more investigation is required to determine the variables, including contextual components that may impact the adoption of benchmarking at all levels of the healthcare system. While this study suggests that integrating performance assessment with interventions on quality has a favorable impact, future research should specifically analyze the individual effects of various interventions, including non-traditional ones like promoting excellent performance practices.

References

- 1- ETTORCHI-TARDY A., LEVIF M. and MICHEL P.: Benchmarking: A method for continuous quality improvement in health. *Health Policy*, 7 (4): 101–19, 2012.
- 2- CAMP R.C.: The search for industry best practices that lead to superior performance, p. 320, 1989.
- 3- LIEBFRIED H.J. and MCNAIR C.J.: In: Sons J.W., editor. *Benchmarking: A tool for continuous improvement*. New York: Wiley, 1992.
- 4- WATSON G.H.: *Strategic benchmarking: How to rate your company's performance against the world's best*. John Wiley & Sons Incorporated, editor. Somerset: Wiley, 1993.
- 5- BOWERMAN M., FRANCIS G., BALL A. and FRY J.: The evolution of benchmarking in UK local authorities. *Benchmarking An Int. J.*, 9 (5): 429-49, 2002.
- 6- DOUG M. and GIFT B.: Collaborative Benchmarking in Healthcare. *J. Qual. Improv.*, 20: 239-49, 1994.
- 7- CAMP R.C. and TWEET A.G.: Benchmarking applied to health care. *Jt Comm. J. Qual. Improv.*, 20 (5): 229-38, 1994.
- 8- THONON F., WATSON J. and SAGHATCHIAN M.: Benchmarking facilities providing care: An international overview of initiatives. *SAGE Open Med.*, 3: 205031211560169, 2015.
- 9- WENNERBERG J.E.: Understanding geographic variations in health care delivery. *N. Engl. J. Med.*, 340 (1): 52-3, 1999.
- 10- ARAH O.A., KLAZINGA N.S., DELNOIJ D.M.J., TEN ASBROEK A.H.A. and CUSTERS T.: Conceptual frameworks for health systems performance: A quest for effectiveness, quality, and improvement. *Int. J. Qual Heal Care*, 15 (5): 377-98, 2003.
- 11- NUTI S. and SEGHIERI C.: Is variation management included in regional healthcare governance systems? Some proposals from Italy. *Health Policy (New York)*, 114 (1): 71-8, 2014.
- 12- BATALDEN P.B. and DAVIDOFF F.: What is “quality improvement” and how can it transform healthcare? *Qual Saf Heal Care*, 16 (1): 2-3, 2007.
- 13- SMITH P., MOSSIALOS E., PAPANICOLAS I. and LEATHERMAN S.: *Performance measurement and professional improvement*. Cambridge: Cambridge University Press, p. 613-40, 2009.
- 14- Expert Group on Health Systems Performance Assessment. *So what? - Strategies across Europe to assess quality of care: European Union*, p. 92-107, 2016. Available from: <http://europa.eu>
- 15- OLIVER T.R.: Population health rankings as policy indicators and performance measures. *Prev. Chronic Dis.*, 7 (5): A101, 2010.
- 16- KLAZINGA N, FISCHER C. and TEN ASBROEK A.: Health services research related to performance indicators and benchmarking in Europe. *J. Heal Serv. Res. Policy*, 16 (Suppl. 2): 38-47, 2011.
- 17- BARBAZZA E., KLAZINGA N.S. and KRINGOS D.S.: Exploring the actionability of healthcare performance indicators for quality of care: A qualitative analysis of the literature, expert opinion and user experience. *BMJ Quality & Safety*, 30: 1010-20, 2021.
- 18- NOLTE E.: International benchmarking of healthcare quality: A review of the literature. *Rand Heal Q.*, 1 (4): e1000097, 2012.
- 19- NUTI S. and VAINIERI M.: Strategies and tools to manage variation in regional governance systems. In: *Handbook of Health Services Research*. Boston: Springer Reference, p. 23, 2014.
- 20- CODLING S.: In: Gower Publishing L., editor. *Best practice benchmarking: A management guide*. Aldershot: Gower Publishing, Ltd, 1995.
- 21- LOBER W.B. and FLOWERS J.L.: Consumer reports in health care: Do they make a difference? *Semin Oncol. Nurs.*, 27 (3): 169-82, 2011. Available from: <https://doi.org/10.1016/j.soncn.2011.04.002>.
- 22- PRANG K.H., MARITZ R., SABANOVIC H., DUNT D. and KELAHER M.: Mechanisms and impact of public reporting on physicians and hospitals' performance: A systematic review (2000-2020). *Plos One*, 16 (2 February): 1-24, 2021. Available from: <https://doi.org/10.1371/journal.pone.0247297>.
- 23- HIBBARD J.H., STOCKARD J. and TUSLER M.: Does publicizing hospital performance stimulate quality improvement efforts? *Health Aff.*, 22 (2): 84-94, 2003.
- 24- BEVAN G. and FASOLO B.: Models of governance of public services: Empirical and behavioural analysis of ‘econs’ and ‘humans’. In: *Behavioural Public Policy*. Cambridge: Cambridge University Press, p. 38-62, 2013.
- 25- BEVAN G. and WILSON D.: Does “naming and shaming” work for schools and hospitals? Lessons from natural

- experiments following devolution in England and Wales. *Public Money Manag.*, 33 (4): 245-52, 2013.
- 26- Bevan G., Evans A. and Nuti S.: Reputations count: Why benchmarking performance is improving health care across the world. *Heal Econ Policy Law.*, 14 (2): 141-61, 2019.
 - 27- CRONENWETT J.L., LIKOSKY D.S., RUSSELL M.T., ELDRUP-JORGENSEN J., STANLEY A.C. and NOLAN B.W.: A regional registry for quality assurance and improvement: The vascular study Group of Northern new England (VSGNNE). *J. Vasc. Surg.*, 46 (6): 1093-103, 2007.
 - 28- CAMPION F.X., LARSON L.R., KADLUBEK P.J., EARLE C.C. and NEUSS M.N.: Advancing performance measurement in oncology. *Am. J. Manag Care*, 17 (Suppl 5): 31-5, 2011.
 - 29- STERN M., NIEMANN N., WIEDEMANN B. and WENZLAFF P.: Benchmarking improves quality in cystic fibrosis care: A pilot project involving 12 centres. *Int. J. Qual Heal Care*, 23 (3): 349-56, 2011.
 - 30- HERMANS M.P., ELISAF M., MICHEL G., MULS E., NOBELS F., VANDENBERGHE H., et al.: Benchmarking is associated with improved quality of care in type 2 diabetes: The OPTIMISE randomized, controlled trial. *Diabetes Care.*, 36 (11): 3388-95, 2013.
 - 31- MERLE V., MORET L., PIDHORZ L., DUJARDIN F., GOUIN F., JOSSET V., et al.: Does comparison of performance lead to better care? A pilot observational study in patients admitted for hip fracture in three French public hospitals. *Int. J. Qual Heal Care.*, 21 (5): 321-9, 2009.
 - 32- HALL B.L., HAMILTON B.H., RICHARDS K., BILIMORIA K.Y., COHEN M.E. and KO C.Y.: Does surgical quality improve in the american college of surgeons national surgical quality improvement program: An evaluation of all participating hospitals. *Ann. Surg.*, 250 (3): 363-74, 2009.
 - 33- TEPAS J.J., KERWIN A.J., DEVILLA J. and NUSSBAUM M.S.: Macro vs micro level surgical quality improvement: A regional collaborative demonstrates the case for a national NSQIP initiative. *J. Am. Coll. Surg.*, 218 (4): 599-604, 2014. Available from: <https://doi.org/10.1016/j.jamcollsurg.2013.12.017>.
 - 34- NUTI S., VOLA F., BONINI A. and VAINIERI M.: Making governance work in the health care sector: Evidence from a "natural experiment" in Italy. *Heal Econ Policy Law*, 11 (1): 17-38, 2016.
 - 35- GOVAERT J.A., VAN DIJK W.A., FIOCCO M., SCHEFFER A.C., GIETELINK L., WOUTERS M.W.J.M., et al.: Nationwide Outcomes Measurement in Colorectal Cancer Surgery: Improving Quality and Reducing Costs Presented at the European Society of Surgical Oncology 34th Congress, Liverpool, United Kingdom, October 2014. *J. Am. Coll. Surg.*, 222 (1): 19-29.e2, 2016;. Available from: <https://doi.org/10.1016/j.jamcollsurg.2015.09.020>.
 - 36- PICCOLI G., MAHLKNECHT A., ABUZHARA M.E., ENGL A., BREITENBERGER V., VÖGELE A., et al.: Quality improvement in chronic care by self-audit, benchmarking and networking in general practices in South Tyrol, Italy: Results from an interventional study. *Fam Pract.*, 38 (3): 253-8, 2021.
 - 37- QVIST P., RASMUSSEN L., BONNEVIE B. and GJØRUP T.: Repeated measurements of generic indicators: A Danish national program to benchmark and improve quality of care. *Int. J. Qual Heal Care.*, 16 (2): 141-8, 2004.
 - 38- NUTI S., SEGHERI C. and VAINIERI M.: Assessing the effectiveness of a performance evaluation system in the public health care sector: Some novel evidence from the Tuscany region experience. *J. Manag Gov.*, 17 (1): 59-69, 2013.
 - 39- VAN LEERSUM N.J., SNIJDERS H.S., HENNEMAN D., KOLFSCHOTEN N.E., GOOIKER G.A., TEN BERGE M.G., et al.: The dutch surgical colorectal audit. *Eur. J. Surg. Oncol.*, 39 (10): 1063-70, 2013. Available from: <https://doi.org/10.1016/j.ejso.2013.05.008>.
 - 40- MARGEIRSDOTTIR H.D., LARSEN J.R., KUMMERNES S.J., BRUNBORG C. and DAHL-JØRGENSEN K.: The establishment of a new national network leads to quality improvement in childhood diabetes: Implementation of the ISPAD guidelines. *Pediatr Diabetes*, 11 (2): 88-95, 2010.
 - 41- KODEDA K., JOHANSSON R., ZAR N., BIRGISSON H., DAHLBERG M., SKULLMAN S., et al.: Time trends, improvements and national auditing of rectal cancer management over an 18-year period. *Color Dis.*, 17 (9): O168-79, 2015.
 - 42- PINNARELLI L., NUTI S., SORGE C., DAVOLI M., FUSCO D., AGABITI N., et al.: What drives hospital performance? The impact of comparative outcome evaluation of patients admitted for hip fracture in two Italian regions. *BMJ Qual Saf.*, 21 (2): 127-34, 2012.
 - 43- MIYATA H., MOTOMURA N., MURAKAMI A. and TAKAMOTO S.: Effect of benchmarking projects on outcomes of coronary artery bypass graft surgery: Challenges and prospects regarding the quality improvement initiative. *J. Thorac. Cardiovasc. Surg.*, 143 (6): 1364-9, 2012.
 - 44- World Bank. World Bank country and lending groups [internet]. 2021. Available from: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.
 - 45- World Health Organization, World Bank Group O. Delivering quality health services: World Health Organization, World Bank Group, OECD, p. 1-100, 2018. Available from: <http://apps.who.int/bookorders>.
 - 46- KRUK M.E., GAGE A.D., ARSENAULT C., JORDAN K., LESLIE H.H., RODER-DEWAN S., et al.: High-quality health systems in the sustainable development goals era: Time for a revolution. *Lancet Glob Heal.*, 6 (11): e1196-252, 2018.
 - 47- IVANKOVIC D., POLDRUGOVAC M., GAREL P., KLAZINGA N.S. and KRINGOS D.S.: Why, what and how do European healthcare managers use performance data? Results of a survey and workshop among members of the European hospital and healthcare federation. *Plos One*.
 - 48- DE LANGE D.W., DONGELMANS D.A. and DE KEIZER N.F.: Small steps beyond benchmarking. *Rev. Bras. Ter Intensiva.*, 29 (2): 128-30, 2017.

- 49- LIED T.R. and KAZANDJIAN V.A.: A Hawthorne strategy: Implications for performance measurement and improvement. Clin. Perform Qual Health Care., 6 (4): 201-4, 1998.
- 50- BRAITHWAITE J., YUKIHIRO M. and JOHNSON J.: Healthcare reform, quality and safety: Perspectives, participants, partnerships and prospects in 30 countries. Boca Raton: CRC Press, 2017.
- 51- GOLDSTEIN H. and SPIEGELHALTER D.J.: League Tables and Their Limitations: Statistical Issues in Comparisons of Institutional Performance Author (s): Harvey Goldstein and David J. Spiegelhalter Source: Journal of the Royal Statistical Society . Series A (Statistics in Society), Vol . 1. Society, 159 (3): 385-443, 2008.
- 52- LOVAGLIO P.G.: Benchmarking strategies for measuring the quality of healthcare: Problems and prospects. Sci. World J., 2012 (iii): 606154, 2012.

استخدام منهجيات تحسين الأداء فى مبادرات جودة الرعاية الصحية: مراجعة

الخلفية: يُعترف التحقيق المرجعى على نطاق واسع كنهج جيد لتحديد نقاط القوة والضعف على جميع مستويات النظام الصحي. على الرغم من الاهتمام المتزايد بممارسة البحث فى التحقيق المرجعى، إلا أن تأثيره على جودة العلاج لم يتم شرحه بشكل جيد. وبالتالي، قمنا بتحليل منهجى للأدبيات الحالية لتجميع البيانات حول العلاقة بين التحقيق المرجعى وتحسين الجودة.

هدف العمل : تهدف هذه الدراسة إلى جمع المعلومات حول التدابير التى قد تستخدم لتحسين تحسين الجودة.

الأساليب: قمنا بإجراء بحث شامل عبر ثلاث قواعد بيانات (PubMed و Web of Science و Scopus) لتحديد الأوراق التى فحصت تأثير التحقيق المرجعى على جودة الرعاية، بما فى ذلك العمليات والنتائج. بعد تقييم المقالات للإدراج، قمنا بتحليل البيانات والتقييم النوعى والتحليل الحرج وفقاً لمعايير PRISMA لإجراء مراجعة أدبية منهجية.

النتائج: كان هناك ما مجموعه ١٧ عنصراً تم العثور عليها. وجدت جميع الدراسات علاقة إيجابية بين استخدام التحقيق المرجعى وتحسين الجودة من حيث العمليات ($N = 10$) والنتائج ($N = 13$) أو كليهما ($N = 7$). من بين ١٢ دراسة تم تحليلها، كان معظمها يتضمن تدخلاً إضافياً، بالإضافة إلى التحقيق المرجعى، لتشجيع تحسين الجودة. تراوحت العلاجات من اجتماعات المشاركين إلى خطط تحسين الجودة وحوافز نقدية. أكثر من نصف المحاكمات ($N = 10$) استخدمت مزيجاً من العلاجات المختلفة.

الاستنتاج: تشير النتائج المستمدة من هذا التحليل إلى أن التحقيق المرجعى فى الرعاية الصحية هو مجال متنام، ويلزم إجراء المزيد من البحوث لفهم تأثيره على تحسين الجودة بشكل أعمق. علاوة على ذلك، تشير دراستنا إلى أن التحقيق المرجعى قد يعزز تحسينات فى الجودة، وأن العلاجات الإضافية، جنباً إلى جنب مع التحقيق المرجعى، تبدو أنها تعزز هذا التحسن. فى حين أن هذه الدراسة تشير إلى أن دمج تقييم الأداء مع العلاجات قد يحسن الجودة، ينبغى أن يركز البحث المستقبلى على تحليل التأثير الفردى لهذه التدخلات.