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Achieving High Performance in Healthcare Institutions: A Longitudinal Perspective

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ABSTRACT
Quality improvement of healthcare institutions has become increasingly important these past decades, mainly due to demographic developments. At the same time, the sector is suffering from political and budgetary pressures which makes quality improvement a tall order. As a result, healthcare institutions have been searching for frameworks which can help them in difficult circumstances to improve their quality by increasing their dynamic capabilities and organizational competencies. This research sets out to identify such a framework. Based on a review of the existing literature the HPO Framework was chosen and subsequently applied at three Dutch nursing home care institutions. In a period of three years the HPO Diagnosis was performed at the three institutions. This yielded information on their status on the way to high performance and attention points which they needed to address to help them further along their journey. Based on an analysis of the transformation process, the experiences and lessons learned from each institution were identified and summarized. All institutions have made progress and achieved better organizational results because of the application of the HPO Framework. The theoretical contribution of this research is that it expands the literature on quality improvement of healthcare institutions based on holistic longitudinal research, and practically it provides healthcare institutions with a validated framework that helps them achieve quality improvements and high performance.

KEYWORDS: Healthcare sector, nursing home care institutes, high performance organizations, longitudinal research, HPO, organizational improvement

Healthcare quality has been the topic of much research interest, both academically and professionally, as quality improvement of healthcare institutions has become increasingly

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important. There is a lot of pressure on these institutions to improve their efficiency and competitiveness in relation to cost-effectiveness, quality of care delivered, clinical outcomes, and patient satisfaction (Gill et al., 2025; Puthanveettil et al., 2021; van Schoten et al., 2016). After all, quality improvement in this sector leads to improvement of quality of life (van Schoten et al., 2016). Unfortunately, healthcare institutions have been struggling with their sustainability – defined by Lega et al. (2013) as maintaining quality and service coverage at an affordable cost – because of several megatrends in their environment (Linthorst & de Waal, 2020; Vindrola-Padros et al., 2022). Specifically, healthcare costs continue to rise because of ageing populations which require more healthcare services, availability of advanced technologies that are more costly, increased citizen expectations of service quality, populations becoming unhealthier and requiring more treatment, inflation increasing cost prices, and accreditation pressures requiring higher institutional quality (Lega et al., 2013; Puthanveettil et al., 2021; Scott, 2020; Walker, 2022). As a result, healthcare institutions have been prompted to improve their quality by increasing their dynamic capabilities and competencies (Agwunobi & Osborne, 2016; Giniuniene et al., 2023; Leotta & Ruggeri, 2017; Murphy & Wilson, 2022).

For a long time, both in the literature and in practice the attention for quality improvement in healthcare institutions was more or less equated with a focus on achieving higher patient care (Tsai et al., 2015), meaning creating high performance *healthcare* such as comprehensive care delivery (Chauhan et al., 2021), high patient and family engagement (Bokhour et al., 2018; Kohler et al., 2017), a well-designed environment of care (Bokhour et al., 2018), and the importance of expertise-driven practice (Taylor et al., 2015). The topic of increasing the quality of the high-performance healthcare institution received much less attention (Tsai et al., 2015). This is strange, as studies of low-performing and failing healthcare institutions revealed that the main causes for the problems are often organizational of nature: low leadership capability, leadership focused too much on avoiding penalties and achieving financial targets, a poor and closed or even hierarchical organizational culture, lack of a cohesive mission, and dysfunctional external relationships (Vaughn et al., 2019; Vindrola-Padros et al., 2022). Fortunately, a growing body of empirical research indicates that the performance of healthcare institutions can be related to the quality of the management practices they apply (Salehnejad et al., 2022; Tsai et al., 2015). Recent literature indicates that effective management and organization of resources drive higher-quality patient outcomes, and that management practices have a higher impact on performance when they are implemented in a holistic approach using specific configurations (Matthias & Brown, 2016; Salehnejad et al., 2022). Thus, given the increasing pressures and complexity healthcare institutions face, there is a clear need for frameworks that holistically and effectively enhance institutional quality and performance.

The objectives of the research described in this article are to, based on a review of the extant literature, identify a holistic and validated framework that can be used by healthcare institutions to identify, develop, and strengthen the management practices and related capabilities to achieve the desired quality improvement. Holistic, meaning the framework should take into account all management practices that can be of influence on institutional quality; and validated in longitudinal research so that healthcare institutions can be sure that the framework in question actually works in practice. Therefore, this study addresses the following research questions:

> **RQ1:** *What holistic framework can effectively enhance healthcare institutional performance?*
>
> **RQ2:** *How effective is the High-Performance Organization (HPO) framework in achieving longitudinal quality and performance improvement within healthcare institutions?*

If this study can discover and validate such a framework, its potential contribution will be twofold. Theoretically it will expand the literature on quality achievement in the healthcare

sector; and practically healthcare institutions can use the identified framework in their own quest to improve quality and high performance. The latter is especially important, because healthcare institutions have not been very successful with implementing organizational quality initiatives. For example, value-based healthcare (VBHC), often operationalized through frameworks like the Triple Aim, sought to optimize healthcare system performance across population health, patient experience, and cost efficiency (Kokko, 2022). However, achieving simultaneous improvements across these domains remained challenging due to a lack of standardized measures and inconsistent implementation (Kokko, 2022; Nasirin et al., 2023).

The remainder of this article is structured as follows. The next section discusses the results of the literature review, which is followed by a description of the HPO framework (de Waal, 2012a, 2012b, 2020) with which an organization can evaluate the capabilities it needs to achieve higher quality and a high-performance culture. Then, the research approach – in which the HPO framework is tested at multiple healthcare institutions in order to evaluate its practical applicability and usefulness to generate improvements – is described. Subsequently, the research results are given, analyzed and discussed. The article ends with the research limitations and opportunities for future research.

Literature Review

The goal of the literature review was to find a framework with which healthcare institutions can evaluate their current capabilities and performance, and that generates improvements so these institutions can increase their organizational quality and transform into a high-performance organization (HPO). An HPO is defined as an organization that achieves financial and non-financial results that are exceedingly better than those of its peer group over a period of 5 years or more by focusing in a disciplined way on what really matters to the organization (de Waal, 2021). With the search terms ‘healthcare institution’ and ‘healthcare sector’ in combination with ‘high performance organizations’, ‘high performance’, ‘quality’, ‘quality improvement’ and ‘performance improvement’ the databases EBSCO, Science Direct and Emerald were searched. Only literature not older than fifteen years was included, to make sure that the reported findings were up-to-date and still valid in the rapidly changing healthcare sector. This yielded 72 potentially relevant sources. These were studies to evaluate whether the research described was aimed at improving (management practices of) a healthcare institution. Studies that focused on the improvement of healthcare delivered to patients or on the improvement of a country’s healthcare systems were not included. This resulted in a total of 46 relevant sources, described in Appendix 1. A summary of the literature review results is given in Table 1.

Table 1

Information on the types of literature sources

Source Type	No. of sources	Themes Discussed	No. of sources
Holistic	10	Improvement systems (TQM, Baldridge, lean)	13
Specific	37	Management/leadership capabilities	8
Framework included	4	High performance work system/practices	6
No framework	43	Organizational climate/culture	5
Longitudinal	11	Performance management system/BSC	3
Not longitudinal	36	Various (1 per source)	12

'Holistic/specific' denotes whether the research looked into the overall performance improvement of the healthcare institution and the capabilities needed for that ('holistic') or just into one aspect ('specific'). 'Framework' indicates whether the literature source provides a framework that healthcare institutions can use when improving the quality of their institution. 'Longitudinal' points out whether the research described in the literature source was longitudinal of nature, i.e. whether one or more healthcare institutions were followed through time in their application of the research findings described in the source.

There was only one literature source, de Waal (2012a, 2012b), that was holistic and longitudinal of nature and contained a framework which healthcare institutions can use in their transformation to a higher quality level. Regarding this framework Do & Mai (2020, p. 305) state, based on an extensive literature review, that "across the HPO literature, we found only the HPO framework developed by de Waal as an example of scientifically validated conceptualization of HPO." In addition, this framework has been extensively tested (Iqbal et al., 2022) and applied in the healthcare sector (de Waal, 2017). We therefore decided to use the HPO framework in our study. In the next section, this framework is described.

The HPO Framework

The HPO Framework (de Waal, 2012a+b, 2020) is a conceptual, scientifically validated structure which organizations can use for analyzing how high performing they are and to decide which capabilities need to be strengthened in order to improve organizational performance and make it sustainable. The framework was developed after an extensive review of 290 academic and practitioner publications on high performance. For each of the 290 studies elements that the authors indicated as being important for becoming a HPO were identified and categorized. Because different authors used different terminologies, similar elements were put in the same category. The resulting 189 categories were labelled 'potential HPO characteristic'. For each of the potential HPO characteristics the 'weighted importance' was calculated, i.e. the number of times that it occurred in the examined studies. Finally, the characteristics with the highest weighted importance were considered the HPO characteristics. These 89 characteristics were subsequently included in an HPO survey which was administered worldwide and encompassed over 3,200 respondents. In this survey, the respondents were asked to indicate how well they thought their organizations were performing on the HPO characteristics (on a scale of 1 to 10) and also how the results of the organization they worked at compared to those of peer groups. The data of the respondents was statistically analyzed, yielding five factors all correlated with competitive performance. Table 2 lists the HPO factors, Appendix 2 details the factors into characteristics.

Table 2
Overview of the HPO factors

HPO factor	Description
Continuous Improvement and Renewal	An HPO compensates for dying strategies by renewing them and making them unique. The organization continuously improves, simplifies, and aligns its processes and innovates its products and services, creating new sources of competitive advantage to respond to market developments. Furthermore, the HPO manages its core competences efficiently, and sources out non-core competences.
Openness and Action-Orientation.	An HPO has an open culture, which means that management values the opinions of employees and involves them in important organizational processes. Making mistakes is allowed and regarded as an opportunity to learn. Employees spend a lot of time on dialogue, knowledge exchange, and learning, to develop new ideas aimed at increasing their performance and make the organization performance driven. Managers are personally involved in experimenting thereby fostering an environment of change in the organization.
Management Quality	Belief and trust in others and fair treatment are encouraged in an HPO. Managers are trustworthy, live with integrity, show commitment, enthusiasm, and respect, and have a decisive, action-focused decision-making style. Management holds people accountable for their results by maintaining clear accountability for performance. Values and strategy are communicated throughout the organization, so everyone knows and embraces these.
Employee Quality	An HPO assembles and recruits a diverse and complementary management team and workforce with maximum resilience and flexibility. Employees are encouraged to develop their skills to achieve extraordinary results and are held responsible for their performance, as a result of which creativity is increased, leading to better results.
Long-term Orientation	An HPO grows through partnerships with suppliers and customers, so long-term commitment is extended to all stakeholders. Vacancies are filled by high-potential internal candidates first, and people are encouraged to become leaders. An HPO creates a safe and secure workplace (both physical and mental) and dismisses employees only as a last resort.

The HPO research shows that there is a direct and positive relationship between the five HPO factors and competitive performance: the higher the scores on the HPO factors (HPO scores), the better the results of the organization, and the lower the HPO scores the lower the competitive performance. An organization can evaluate its HPO status by performing an HPO Diagnosis. This diagnosis consists of having management and employees fill in an HPO questionnaire, containing questions on the 35 HPO characteristics, with possible answers on an absolute scale of 1 (very poor) to 10 (excellent), and then calculating the average scores on the HPO factors. The scores then provide the attention points where the organization has to take action to improve in order to become an HPO.

Research Approach

Regarding the context of the researchers and this case study, we note the following. The three researchers from the HPO Center all have extensive experience as practitioner and/or academic, specializing in organizational performance and specifically in high-performance frameworks. Their motivation for this study stems from professional engagement with healthcare institutions striving for sustainable quality improvement. The four researchers from the healthcare institutions are all responsible for managing these institutions as effectively as possible and are therefore professionally interested in making their organizations perform increasingly better for the benefit of their clients/patients.

4.1 Research method

For this study a mixed method approach was used (Creamer, 2017), in the form of several longitudinal descriptive case studies. Our research is looking into the effectiveness of an organizational improvement technique, the HPO Framework, and therefore utilizes the improvement-oriented type of longitudinal research (Rainer, 2011). In addition, a prospective and a priori focused longitudinal study is used, as the current investigation is based on repeated data collection from the same subject over a period of time (Chowdhury & Shil, 2021), and it has a pre-planned research design in which data collection has been planned beforehand (Guthrie, 2020). The longitudinal nature consisted of conducting the HPO diagnosis twice at three nursing home care institutions. A descriptive case study describes, based on observing, collecting data and reporting, the situation of an organization. The case study format makes it possible for researchers to directly interact with people in the organization in its natural setting, through the means of interviews, which leads to greater understanding (Chowdhury & Shil, 2021). In the quantitative part data was collected using the HPO Questionnaire, while in the qualitative part semi-structured interviews were used (Guthrie, 2020) in order to gain an in-depth understanding of the use of the HPO framework at healthcare institutions (Patton, 1987). Trustworthiness of the research was ensured via triangulation (questionnaire results validated by semi-structured interviews), prolonged engagement over three years, and member-checking of the findings with participant organizations.

4.2 The Nursing Home Care Quality Framework

This HPO research was part of a larger study into the implementation of the Nursing Home Care Quality Framework. The quality framework describes what good and effective nursing home care entails and how the provided care can be improved (Zorginstituut Nederland, 2017). In the Arnhem region of the Netherlands, healthcare institutions providing nursing home care joined forces at the end of 2018 to tackle the implementation of the quality framework. The resources provided by health insurer Menzis were used to set up various quality improvement programs. One of these programs was promoting vitality and job satisfaction of employees with the goal to improve the sustainable employability of healthcare employees, the idea being that healthy and happy employees enjoy their work more which has a positive attraction effect on the labor market. The carrier of this program became the HPO framework. Menzis chose the HPO framework because that provided a vision of how integrated business operations can be permanently raised to a higher quality level. Three Dutch healthcare institutions from the region, Jah-Jireh Woonzorg, RijnWaal Zorggroep and RST Zorgverleners, volunteered to participate in the program.

4.3 Jah-Jireh Woonzorg

Stichting Jah-Jireh Woonzorg is a foundation for elderly and needy Jehovah's Witnesses who are cared for by expert and like-minded employees in a loving and spiritual environment. The organization originated from a volunteer initiative whose main goal was to bring spiritual attention and religious experience into regular care. Jah-Jireh considers it important that Jehovah's Witnesses, who are in need of help due to old age or permanent disabilities, are cared for and supported with love and personal attention in a safe and familiar environment in which they feel valued and understood. Because their well-being is closely related to religious beliefs and social contact with like-minded people, ample attention is paid to these aspects. In the early years, the organization consisted of a number of enthusiastic volunteers in collaboration with a care provider who had an eye for this target group. Because the organization continued to think in terms of the volunteer model for too long, it turned out to be difficult to professionalize causing the organization to operate too much ad-hoc. When HPO became possible from the Menzis transition resources, Jah-Jireh saw this as an opportunity to further develop and professionalize the organization.

4.4 RijnWaal Zorggroep

RijnWaal Zorggroep, with 700 employees in five locations, is active in the disciplines of nursing home care, neighborhood nursing, and day care (individual guidance). In addition, the organization plays a major role in dementia case management in the region. In 2018, RijnWaal started the program 'RijnWaal Vital and craftsmanship central'. In this project, all employees were asked which tasks they do and do not consider to be part of their profession, and which tasks outside their professional field do not energize them. With the results, a new organizational structure was built. The supporting disciplines were expanded so that the professionals can focus on what they are good at. Collaboration between all disciplines turned out to be the keyword here. HPO fits in very well with this new structure and way of working: getting the best out of the employees, and giving them opportunities, space and possibilities to do their work in the way they consider right and appropriate from the point of view of their professional standards, resulting in a pleasant and professional organization where employees enjoy working.

4.5 RST Zorgverleners

RST Zorgverleners is a reformed care organization where clients can go with care questions in the fields of maternity care, care and nursing, and domestic help. For the organization, the Bible forms the foundation on which norms and values, and the way of working are based. This is expressed in the core values love & attention, reverence & respect and professional & service minded. RST stands for client-oriented, safe and affordable care, in an organization where the employees are number 1, which means that they are vital and enjoy their work. The organization provides appropriate care by supplementing from its professional services what clients can do themselves within their own network. RST participates in HPO to gain inspiration and learn from experts and other organizations. The principles and characteristics of HPO provide content and structure to help an organization like RST - that wants to be a learning organization - a step further and to focus on matters that are important for this.

4.6 Ethical considerations

The study was conducted in full compliance with applicable ethical standards. Following a formal review by the Compliance Department of the HPO Center, it was concluded that the research did not require ethical approval. The research design did not involve sensitive topics or

vulnerable groups, and participation was informed, voluntary, and anonymous. The management of all participating healthcare institutions (who are the co-authors of this article) explicitly authorized the research and ensured that its purpose was clearly communicated to employees. Consequently, the study received a formal waiver from ethical approval requirements, thereby affirming its adherence to established compliance guidelines and ethical principles.

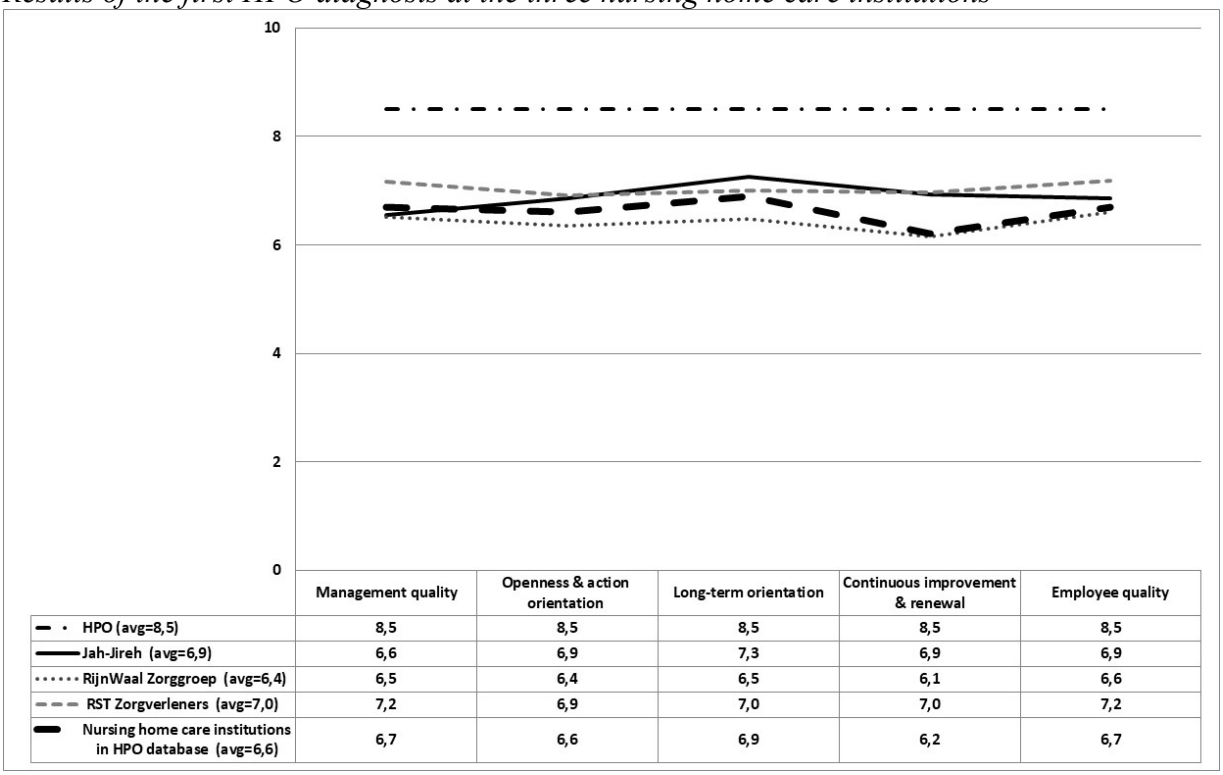
Research Results And Analysis

5.1 The first HPO Diagnosis (2019)

Figure 1 depicts the results of the first HPO Diagnosis at the three nursing home care institutions. These results are compared to the average HPO score for all respondents in the HPO database (in which all HPO data is collected) who work for nursing home care institutions, and to the threshold value for an HPO organization (this value is 8.5, see de Waal, 2012b).

Figure 1

Results of the first HPO diagnosis at the three nursing home care institutions



	Management quality	Openness & action orientation	Long-term orientation	Continuous improvement & renewal	Employee quality
HPO (avg=8,5)	8,5	8,5	8,5	8,5	8,5
Jah-Jireh (avg=6,9)	6,6	6,9	7,3	6,9	6,9
RijnWaal Zorggroep (avg=6,4)	6,5	6,4	6,5	6,1	6,6
RST Zorgverleners (avg=7,0)	7,2	6,9	7,0	7,0	7,2
Nursing home care institutions in HPO database (avg=6,6)	6,7	6,6	6,9	6,2	6,7

Figure 1 shows that the three participating institutions are quite close in their development toward HPO: between 64 and 70% on the way, which compares with the progress of the average Dutch nursing home care institutions (66%). At the same time, these institutions needed focused attention on the HPO factors in order to strengthen them to the HPO level (85% and higher). Based on the scores, semi-structured interviews were conducted with managers and employees at the three institutions, in order to identify the main areas of attention where they should focus their improvement efforts in order to make progress toward the HPO level. In summary, these areas for attention were:

<u>Jah-Jireh Woonzorg</u>

1. *Grow as leaders and managers.* The differences between the perceptions of managers and employees, especially regarding the quality of management, are too large. Growing to HPO

requires a different mindset and management style from the managers anyway, a style which focuses on not taking over the work but coaching people to do it themselves and allowing them their mistakes. These finding echoes that of Bentaleb (2024), suggesting that leadership approaches fostering positive leader-member exchanges strongly enhance organizational commitment and drive effective performance transformations in healthcare settings.
2. *Going from an attitude of 'it's just work' to working together for the Jah-Jireh organization.* Too many employees do their job but are not proactive and eager to learn. Management has to ask employees what they need to make the organization better together, let them describe what will happen if things get better and what clients will notice about this, and what they will do to foster cooperation between the locations.
3. *Aligning mutual expectations better.* There are a lot of different expectations of and visions on the organization and where it needs to go, creating uncertainty and much ad-hoc or unfinished business. People need to engage in dialogue more (which means especially listening better to each other), share more financial and non-financial information, actively contribute ideas, and be more often involved as a group instead of relying on 1-on-1 conversations (which often creates gossip and ambiguity).

RijnWaal Zorggroep

1. *Fulfil the connecting role in the organization as management team.* Employees see a management team that is not (yet) a team and sends out mixed signals and messages. As management team, invest in getting to know each other better and using each other's strengths. Have robust internal discussions but speak with one voice to employees. Also develop 'the big story of RijnWaal' in which employees can believe.
2. *Connect the organization.* Locations operate like islands, and there is little mutual contact with the aim of learning from each other and exchanging ideas. To improve this, ensure that there are more joint consultations, let employees rotate across locations, and standardize processes throughout the organization as much as possible.
3. *Help managers become HPO managers.* Employees perceive varying levels of quality in managers, noting that non-achievers too often 'get away with it.' As managers, develop better coaching skills and then apply these extensively with the aim of empowering employees and cultivating a strong bond with them. Improve management reporting so managers can see how their locations/departments are doing.
4. *Help employees to help the organization.* Employees mainly feel connected to their client, team, and location, but little or no connection with the RijnWaal organization. In addition, their attitude of "just act normal, then you are already acting crazy enough" gets in the way of "going the extra mile." Therefore, as management discuss elementary matters with them, such as: RijnWaal's vision, why insight into finances is important, why you have to work together in an organization, and why you need to learn from other locations. Then ask what employees need to make RijnWaal better together.

RST Zorgverleners

1. *Increase organizational commitment.* Employees mainly feel connected to their client, team and location, but little or no connection with the RST organization. In addition, their attitude of "just act normal, then you are already acting crazy enough" gets in the way of "going the extra mile." Management should ask employees what they need to work together to make RST a better organization. Have them describe what happens: for the clients, for them, at the locations, across the locations?

2. *Promote internal collaboration.* There is little team consultation, there is too little time for meetings, learning sessions and training, and innovation and improvement have only just begun (and it appears to be difficult to involve employees in this).
3. *Strengthen the learning process.* Teach people that organizing their own time well, sharing knowledge, being more consistent with clients, and giving feedback to each other is good for their clients, their own job satisfaction and for the organization. Learn from teams whose planning process goes well, how it can be done well. Make (paid) time available for participation of employees in improvements.

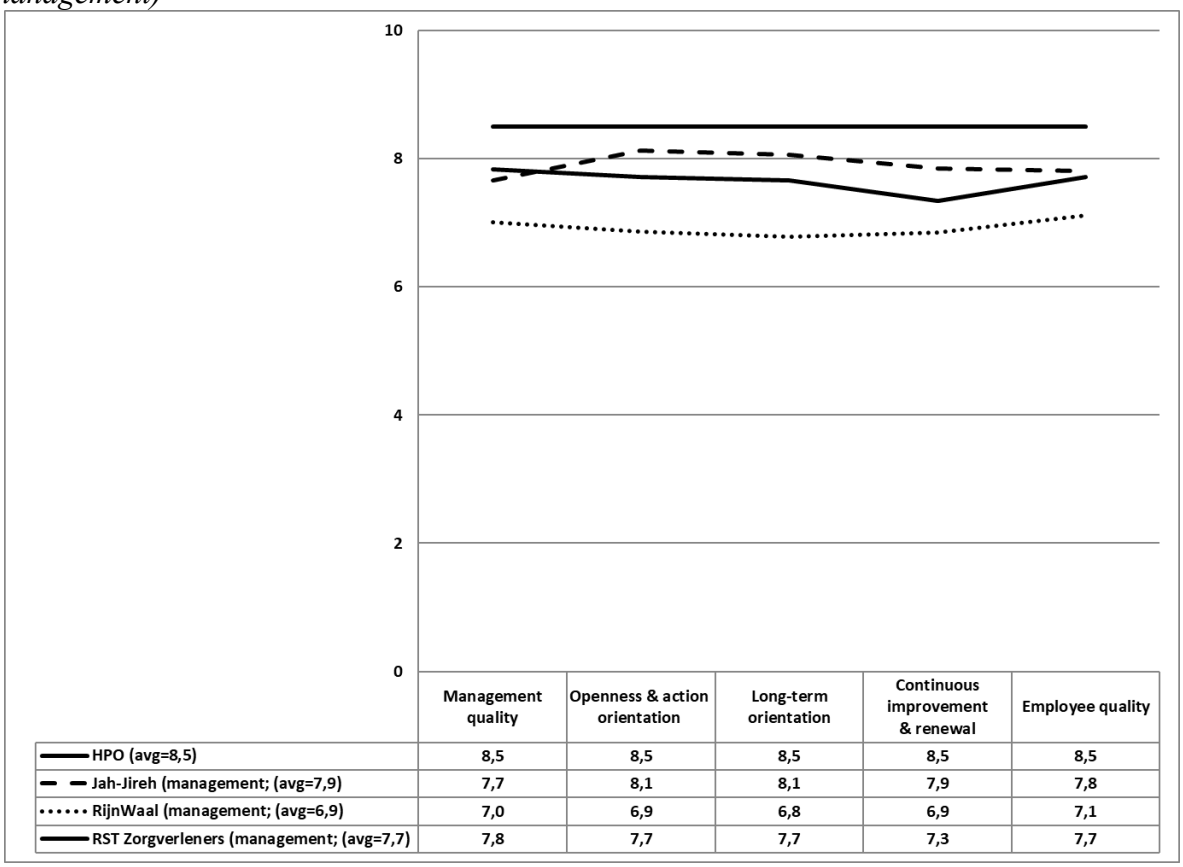
After the attention points were communicated to the three institutions, they started working on these. All institutions installed so-called HPO Coaches (de Waal, 2020), who are people from within the organization that take the lead in the HPO transformation so that the HPO knowledge and experience builds up inside the organization. Having HPO Coaches increases the motivation for HPO with the organization as it becomes their own transformation for its employees. The HPO Coaches spread HPO knowledge throughout the organization, igniting the HPO fire among managers and employees, are the pioneers in HPO transition activities, promote cooperation between locations and between managers, and take the lead in drafting the HPO Action Plan (which contains the priorities and interventions related to the HPO attention points).

5.2 The second HPO Diagnosis (2022)

In principle, it is advisable to perform an HPO Diagnosis every two years (de Waal, 2020). However, in the case of the three nursing home care institutions COVID-19 intervened, forcing them to postpone the second diagnosis for one year. Figure 2 depicts the results of this second diagnosis. As RST Zorgverleners opted for only having managers participate in the diagnosis – the reason being that employees had just completed the employee satisfaction survey so were not that willing to fill in another questionnaire, and had struggled quite a bit with the HPO Questionnaire first time around resulting in a rather low response, management still wanted at least an indication how RST stood with regard to HPO – for comparison purposes the scores of managers are shown and employees' data are left out of this Figure.

Figure 2

Results of the second HPO diagnosis at the three nursing home care institutions (for management)



	Management quality	Openness & action orientation	Long-term orientation	Continuous improvement & renewal	Employee quality
HPO (avg=8,5)	8,5	8,5	8,5	8,5	8,5
Jah-Jireh (management; (avg=7,9)	7,7	8,1	8,1	7,9	7,8
RijnWaal (management; (avg=6,9)	7,0	6,9	6,8	6,9	7,1
RST Zorgverleners (management; (avg=7,7)	7,8	7,7	7,7	7,3	7,7

Figure 3 shows the increase in average HPO scores and percentages improvement between the first and second HPO diagnosis for the three nursing home care institutions. This figure shows that – despite a challenging few years caused by rising healthcare costs because of the aging of the Dutch population, continuing cost reduction pressure, technological developments demanding investments, increasing legislation, COVID-19, and increased turnover of healthcare professionals (de Vries et al., 2021; Maris et al., 2020; van Gool et al., 2020) – all three institutions increased their HPO scores, albeit modest for a three year period. Pre-COVID an average increase of between 0.3 and 0.5 points per year could be expected (de Waal, 2012b; de Waal et al., 2022). During the COVID pandemic this expected increase decreased to approximately 0.4 points per two years.

Figure 3

Increase in average HPO score and percentage improvement between first and second HPO diagnosis for the three nursing home care institutions

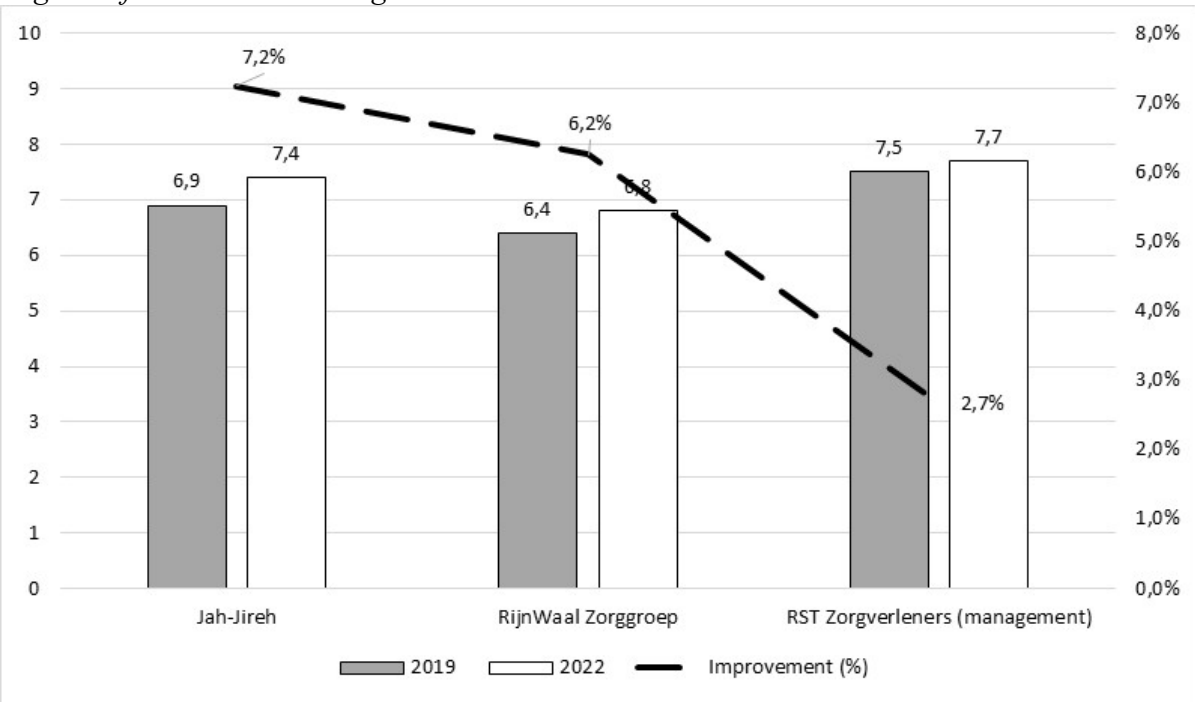
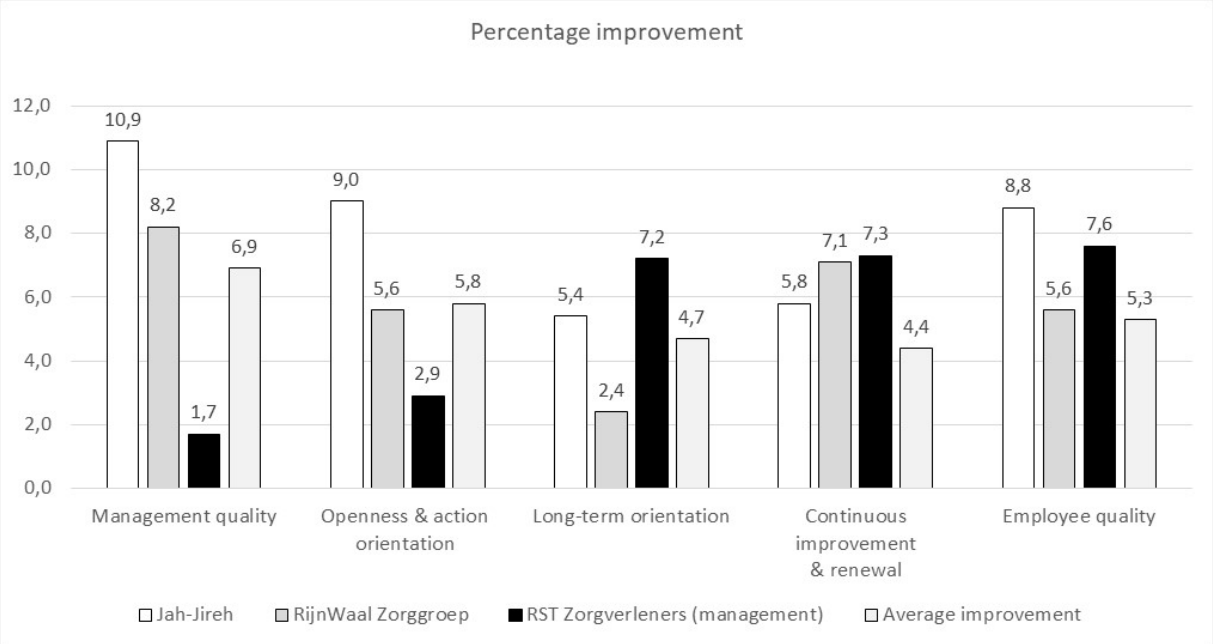


Figure 4 gives the percentages improvement for each of the HPO factors, for the three institutions. This data has been detailed in Appendix 2 for the HPO characteristics, where per institution the characteristics with the most improvement (i.e. more than 0.5 points) between the first and second HPO diagnosis are indicated. It is clear from Figure 4 and Appendix 2 that at every institution all HPO factors have improved, but that the institutions seemed to have paid most attention to strengthening the characteristics related to their management and employees and the connection between the two (i.e. Openness & Action Orientation). This focus has been a good choice of institutions, because research has shown that when people get along better with each other in an organization, that this forms the basis of successful change in that organization (Hagenimana et al., 2018; Prajogo et al., 2022).

Figure 4

Percentage improvement between first and second HPO diagnosis per HPO factor, for the three nursing home care institutions



Appendix 2 shows all three institutions have advanced on people being allowed to make mistakes (characteristic 12); being open to change (13); their managers being trusted (15), having integrity (16) and being a role model (17) and a coach to employees (20); and having a diverse workforce (29) in a secure environment (35). It seems that people in all three institutions started to spend more time together, paying more attention to each other, knowing each other's personal situation better, thus creating a safer and potentially happier workplace.

Just as in the first diagnosis, semi-structured interviews were conducted with managers and employees at the three institutions, in order to identify what after three years and the executed HPO Action Plan the progress is that has been made, and what the main areas of attention now are. In summary, these attention areas are:

<u>Jah-Jireh Woonzorg</u>

Many of the things that have been put in place during the HPO transformation process in the past three years have brought the organization many advantages, so that it is currently running a lot smoother. The new attention points are:

1. *Dot the i's and cross the t's around (internal) coordination.* This entails drafting clear job descriptions and a clear management style and then paying a lot of attention to communicating these clearly in the organization while also investigating where possible frictions in the organization exist and discussing these.
2. *Unite the organization.* The differences in management styles and approaches and how managers are experienced by employees differ too much between locations. One manager is very nice but conservative, the other can be a good listener but sometimes does not act, while a third always quickly jumps into action mode. Unity in style and approach would create much tranquility in the organization.
3. *Develop a vision for the future of nursing home care*. This vision should encompass how that future will most likely affect Jah-Jireh's organization, operations, and people.

RijnWaal Zorggroep

The organization has become more structured, there is better expectation management of each other, a better composition of the teams, and more personal responsibility is felt and taken. There is a good atmosphere within the organization, people are willing to help each other, they experience a lot of freedom in their work, and there is a clear drive for improvement within the organization. The new attention points are:

1. *Create even more connection between people and teams.* As management team member, make sure to speak with one voice. As manager/team leader, be approachable and accessible, engage in dialogue, and regularly reflect on one's own behavior and actions, and always provide feedback on what is being done with our ideas, comments and problems. As employee, make sure to not only talk to each other but also to the manager/team leader so that one's opinion is heard, and promote the 'RijnWaal way of working' (i.e. uniformity across locations/teams in actions, processes, behavior, dialogue).
2. *Work increasingly more professionally.* Only start projects if these can be finished and then indeed finish them, always close the PDCA cycle (Plan-Do-Check-Act, including root cause analysis), think in terms of solutions instead of problems, and work on reducing the quality difference between the teams.
3. *Keep developing and growing as a person.* Especially embrace feedback (both giving and receiving) as a way to learn and develop, spend time on one's own professional development (training, courses), and stay in regular contact with other teams in order to learn from each other.

RST Zorgverleners

HPO has been incorporated in the organization's continuous quality improvement efforts as the main improvement technique and mindset, without calling the improvement projects HPO projects but rather quality improvement projects. In these projects there has been specific attention given to further digitization of the organization, better and more structured performance feedback, continuous attention for the development of employees, and empathically involving employees in all activities taking place in RST. The new attention points are:

1. *Prepare the organization for the future.* Take the vision/strategy/policy plan as a starting point and talk to people about the future of RST, the 'dot on the horizon' in 5 years' time, what kind of organization RST will be. Always include 'the dot' when making decisions. Determine what RST needs with regard to the future workforce. Continue to take room for reflection (especially at managerial level).
2. *Strengthen internal collaboration.* Investigate the usefulness, necessity and possibilities of cooperation between the department, in order to create 'the optimal client journey'. Look at standardization of implementation. Better record case histories for easier sharing and learning. Organize knowledge sharing between teams and within teams to increase quality for clients.
3. *Integrate the PDCA cycle into everything a person does*. Plan: prioritize and align plans more closely and act on that priority and alignment. Do: simplify the processes and be less ad-hoc, more structured, with a focus on finishing activities/projects. Check: always review results compared to agreements and talk to each other about this. Act: go from reactive improvement to proactive improvement.

Analysis

Table 3 provides an overview of the attention points, per nursing home care institutions, for both HPO diagnoses.

Table 3
Attention points per healthcare institution

	1st HPO diagnosis		2nd HPO diagnosis		
Institution	**Connection**	**Professionalism**	**Connection**	**Professionalism**	**Future**
Jah-Jireh	- From 'it's just work' to working together for the organization	- Grow as leaders and managers - Better align mutual expectations	- Unite the organization	- Dot the i's and cross the t's around (internal) coordination	- Develop a vision for the future of care
RijnWaal Zorggroep	- Connect the organization - Take as MT the connecting role in the organization	- Help executives become HPO managers - Help employees to help the organization	- Create connection between people and teams	- Work more and more professionally	- Keep develop-ing and growing as a person
RST Zorg-verleners	- Increase organizational commitment - Promote internal collaboration	- Strengthen the learning process	- Strengthen internal collabora-tion	- Integrate the PDCA cycle into everything a person does	- Prepare the organi-zation for the future

It is interesting to notice from Table 3 that the attention points for all three institutions initially can be categorized into two groups:

- *Connection*: dealing with promoting and strengthening internal cooperation between individuals, between teams, and across the complete organization;
- *Professionalism*: focusing on working more professionally (i.e. using the. PDCA cycle and better coordination across functions and processes);

while during the second HPO Diagnosis a third attention point appears for all institutions:

- *The future*: making the organization more future-oriented and thus ready for the future, and preparing people for the future by urging them to develop professionally.

What can be learned from this is that dealing with attention points requires an extensive period of time, which is in line with de Waal (2020) who states that becoming high performance takes time especially because the attention points are often 'hard nuts to crack', i.e. issues that cannot be solved overnight. Thus, it comes as no surprise that the original two categories of attention points are still valid three years later. Another learning point is that, as the HPO transformation progresses, the attention of the organizations shifted from the 'here and now' towards the future. This helps them prepare for what is coming in the always (politically)

turbulent healthcare sector, and also in going from a fire-fighting and reactive to a proactive mindset and way of working. The institutions are then better able to deal with external factors.

After the second HPO Diagnosis, the directors of the three nursing home care institutions reviewed and analyzed the HPO transformation process by looking at the advantages of the HPO Framework and the lessons learned during the transformation process. In addition, they stated whether they are continuing with the HPO transformation.

Jah-Jireh

- *Advantages*. There is more peace of mind in the organization, understanding and insight into each other's work, willingness to cooperate, awareness among employees and management about what is going on in Jah-Jireh, and focus on the clients. Especially management is less governed by the issues of the day and takes a longer-term view of the organization. More people are now capable which makes Jah-Jireh less dependent on the director, and the organization has become less hierarchical. There is a better atmosphere in the organization and compliments and small gifts are regularly provided to employees. Management no longer takes employees for granted, resulting in an organization which it is more enjoyable to work for.
- *Lessons learned*. Jah-Jireh has locations that geographically are far apart, with different employee populations and culture differences. This requires an HPO transformation approach that is tailored to the context of each location, something which takes more effort but is necessary to do. Jah-Jireh started out with one HPO Coach which turned out to be not viable in the long term as it made the organization vulnerable to the circumstances of that Coach (illness, COVID). The HPO transformation should directly start with an adequate number of coaches, otherwise the organization will suffer a delay in its transformation process. Another lesson learned is that an HPO transformation takes time as both managers and employees need to be given time to get used to the new ways of thinking and working, and to see the benefits of these.
- *Continue with HPO?* Jah-Jireh will continue with HPO as it helps the organization and its people to not fall back in the old, inefficient ways of working and patterns of behavior.

RijnWaal

- *Advantages*. More cooperation between the various departments in the organization creating improved performance and greater enjoyment at work: quite a few employees who left RijnWaal have returned as they see RijnWaal as a fun place to work. People have become more aware of what is going on in and what is important to the organization. They are more competent as they regularly reflect on their roles and performance. Employees feel more freedom to say what they think. Absenteeism has gone from 12 to 5 percent. People pay more attention to each other, and compliments and gifts are regularly exchanged. Because everyone feels more involved and responsible, RijnWaal has been able to sharpen its vision and its focus on the client.
- *Lessons learned*. HPO is very effective when it is part of a greater quality movement within the organization, in this case the 'RijnWaal Vital' program. Within this program the best parts of HPO can be taken to help strengthen the program. Having employees as HPO Coaches was not very effective as these focused too much on their own HPO efforts while not paying enough attention to taking managers and employees along the HPO journey. Appointing managers as HPO Coaches turned out to be the game changer for the HPO transformation. These Coaches were able to bring more integration into the HPO efforts in RijnWaal and acceleration in the transformation process.

- *Continue with HPO?* RijnWaal will continue with HPO, albeit not under the name of HPO but as part of the 'RijnWaal Vital' quality program in the organization, while cherry-picking the elements that will help the organization the most at that specific moment in time.

RST Zorgverleners

- *Advantages*. RST now focuses more on things that really matter and has stopped with topics that are less important. HPO has added structure to drafting and implementing the annual plan and helped to add accents to the things that were worked on in that plan. HPO helped RST to change from a hierarchical management culture to placing responsibility increasingly lower in the organization. HPO also helped to professionalize the organization.
- *Lessons learned*. In the beginning of the transformation HPO was experienced as 'something added' on top of the regular work, it should have been integrated more within the daily activities. HPO philosophy did not necessarily match with how people think in healthcare: care professionals are not particularly motivated by a well-structured and organized organization and smooth business operations, which is mainly management's concern while their focus is on caregiving. Therefore, introducing HPO in a healthcare institution takes more time and 'marketing of the message' so people understand the goal of HPO and how it will benefit them in their dealings with clients. It also means that the change process has to be given sufficient time as healthcare professionals need time to get used to the new way of working. Another observation was that the HPO questionnaire can be seen as somewhat abstract and complex for the average healthcare professional. Initial participation in the Nursing Home Care Quality Framework project was decided somewhat in isolation by RST's director, while it would have been better to first create good support from employees from the start. Eventually, HPO was integrated with what everybody was doing and in that way, it got support and a foundation within the organization. An important move in this respect was to appoint every manager as an HPO coach. Initially several employees volunteered to become HPO coach, but they were hesitant to fulfil that role toward their managers which meant they were not very effective. When managers became coaches the transformation process got a real boost. At a certain point, people started saying, in relation to HPO: "but we already are working like that". At that point, management knew that HPO started to become accepted in the sense that it was anchored in the business. No longer it was needed to mention HPO as a separate concept, it had become part of the quality goals in the annual plan and subsequent quality improvement activities of RST.
- *Continue with HPO?* RST will continue with HPO, albeit not necessarily calling it that in the organization, as it keeps especially management sharp and brings the organization further in its development.

When looking at the experiences of the three nursing home care institutions it is possible, despite their different circumstances and nature of the organization, to distinguish a number of common threads in the advantages they experienced and their lessons learned. These threads can function as advice to other healthcare institutions contemplating a quality improvement impulse for their organization. The common advantages of the HPO transformation are:

- there is more focus on what is important to and therefore less ad-hoc firefighting in the organization;
- the organization has become more professional and capable;
- the organization has become less hierarchical and more of a heterarchy (more responsibility to lower levels);
- there is more cooperation between the departments in the organization;
- there is more focus on clients; and

- the organization has become a better workplace where people have more fun.

These findings match with the benefits reported in previous HPO research, such as de Waal (2017), de Waal (2018), de Waal et al. (2019), and de Waal & Kraaijveld (2022).

Also, in the lessons learned during the HPO transformation common threads can be identified:

- there has to be an adequate number of HPO Coaches who should be of the appropriate function level (i.e. managers);
- take your time with the transformation, as people need to get used to the new ways of thinking and working;
- integrate HPO activities as much as possible with the daily activities taking place in the organization;
- the transformation approach has to be tailored to the cultural context (i.e. sector, location) of the organization; and
- in the healthcare sector it is wise to make the HPO transformation part of a larger quality improvement process, instead of a stand-alone initiative (which people often will feel as extra on top of their regular work).

Many of these lessons learned have also been found in previous evaluative HPO research, such as de Waal (2017), de Waal (2020), and de Waal et al. (2022).

Discussion

This study aimed to identify and evaluate a holistic and validated framework capable of systematically enhancing performance and quality in healthcare institutions. Two central research questions guided this study:

RQ1: *What holistic framework can effectively enhance healthcare institutional performance?*

RQ2: *How effective is the HPO framework in achieving longitudinal quality and performance improvement within healthcare institutions?*

Addressing the first research question, our literature review and empirical analysis clearly demonstrate that the de Waal HPO framework is a holistic and effective tool for enhancing institutional performance. The framework's comprehensive nature, emphasizing structured managerial practices, employee engagement, openness to change, continuous improvement, and strategic long-term orientation, aligns with recent scholarship advocating integrated approaches to organizational improvement (Lega et al., 2013; Prajogo et al., 2022). And, consistent with Kokko's (2022) findings, our study identified gaps in achieving simultaneous improvements across Triple Aim dimensions, emphasizing the need for holistic and standardized performance measures to effectively track healthcare transformation outcomes.

Regarding the second research question, the findings from our longitudinal analysis robustly indicate that the application of the HPO framework significantly contributes to institutional performance improvements. All three participating institutions exhibited noticeable progress across the HPO dimensions Management Quality, Openness & Action Orientation, Employee Quality, Continuous Improvement & Renewal, and Long-term Orientation. These improvements further validate the effectiveness of the HPO framework when systematically applied over an extended period.

Moreover, the longitudinal nature of this study underscores the importance of sustained and systematic performance improvement initiatives. Our study confirms earlier conclusions drawn by Vindrola-Padros et al. (2022), who identified structured organizational transformations as particularly beneficial in addressing performance gaps and enhancing long-term sustainability in healthcare settings. Similarly, Salehnejad et al. (2022) reinforced the notion that comprehensive managerial practices that are aligned closely with organizational

strategy significantly reduce relative patient mortality, underscoring the direct clinical implications of holistic performance management. Another important observation from this study relates to the evolving nature of institutional priorities throughout the transformation process. Initially, institutions emphasized improving internal connections and professionalizing their operational procedures. However, as they progressed, there was a clear shift toward future-oriented strategies, reflecting increased organizational maturity. This transition aligns with findings from recent research by Ree et al. (2021), who noted that effective managers in healthcare organizations increasingly prioritize organizational resilience and preparedness for future disruptions.

The importance of employee engagement and management coaching, identified prominently in this study, mirrors findings from other recent healthcare management studies. For instance, Aboramadan et al. (2021) indicated that authentic leadership and engaged employees significantly mediate positive performance outcomes. Likewise, research by Tortorella et al. (2022) emphasizes the value of fostering a culture that embraces continuous learning and adaptability, elements central to the HPO framework and critical to the improvement seen in the case study institutions. Further enhancing the robustness of our findings, the observed improvements across multiple dimensions, including reduced absenteeism, enhanced team dynamics, and improved employee satisfaction, align closely with recent literature emphasizing holistic workplace interventions. Narayanamurthy (2021) reported similar outcomes, highlighting that structured organizational improvement frameworks significantly decrease resource wastage and enhance operational efficiency. Supporting the conclusions by Giniuniene et al. (2023), our research also underscores the critical role of dynamic capabilities and open innovation in driving sustained healthcare performance improvements.

Additionally, our study offers practical insights regarding the importance of context-specific application of improvement frameworks. Our findings emphasize that effective transformation initiatives in healthcare must consider the cultural and operational contexts unique to each institution. This aligns with recent findings from Henrique et al. (2021) and Ilangakoon et al. (2022), who stress the importance of tailored approaches within lean healthcare initiatives to sustain long-term improvements and avoid superficial or transient gains. Lastly, an important contribution of our study lies in highlighting the critical role of systematic follow-ups and repeated diagnoses within organizational transformation efforts. Our research demonstrates the necessity of regular evaluations and iterative learning cycles (PDCA) for maintaining momentum and ensuring sustained institutional learning. Recent literature by Ilangakoon et al. (2022) further validates this approach, demonstrating that regular monitoring combined with adaptive management strategies significantly enhances operational performance in healthcare organizations.

In summary, the findings from this study make clear that sustained and holistic implementation of structured frameworks such as the HPO framework provides significant advantages in healthcare management, performance, and quality outcomes. The congruence of our findings with recent empirical literature further supports the utility and generalizability of the HPO framework within the broader healthcare sector.

Limitations and Future Research

There are several limitations to our study that in themselves offer opportunities for future research. The first limitation is that, although this was a longitudinal study, the time frame of the study could have been extended, specifically to evaluate whether the three nursing home care institutions are able to reach and subsequently keep hold of the HPO status and what the institutions actually did in order to achieve this. Secondly, it is important to be careful with generalizing these research results to the overall healthcare sector. Generally, three are not

enough cases yet to state that the researched phenomenon, in this case the application of a quality improvement framework, is valid in multiple settings (Md. Ali & Yusof 2011). Future research should, therefore, endeavor to extend the number of cases using the HPO transformation approach and should also increase the number of different organizations from different sizes and operating in different subsectors of the healthcare sector to evaluate whether the HPO Framework also turns out to be useful for these subsectors. Another interesting avenue of research is to collect the findings from multiple applications of the HPO Framework in the healthcare (sub)sectors, to evaluate whether certain interventions when using the framework are more successful than others.

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Esther Mollema is an expert in High Performance Organizations (HPO) with over two decades of experience in leadership development, cultural transformation, and organizational effectiveness. As co-founder of Direction and the HPO Center, she has worked with hundreds of organizations to apply the HPO Framework in practice.

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Marco Schreurs is co-founder and partner at Direction Europe, a leadership and development firm, and co-founder of the HPO Center, where he researches and advises on High Performance Organizations. He has extensive experience in the healthcare sector, contributing to numerous HPO diagnoses and transformations. Marco has co-authored several management books.

Michel Hodes is the CEO of Nursery home RijnWaal Zorggroep in Lingewaard in the Netherlands. He studied Public Administration Science (MSc), Organizational Science (MSc), and Physical Therapy (BA). Michel has worked in several hospitals and nursery homes as a manager and CEO. RijnWaal Zorggroep supports elderly people to continue to live as healthily, pleasantly and independently as possible.

Peter Boudewijn is the CEO of RST Zorgverleners in Barneveld in the Netherlands. RST Zorgverleners is a professional healthcare organization with a Reformed identity, providing maternity care, household support, and nursing services to all in need. Guided by the Bible as its foundation, the organization upholds values such as respect for life, trust, love, attention, safety, quality, and sustainability.

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APPENDIX 1 – RESULTS OF THE LITERATURE REVIEW

This appendix gives information about the selected literature sources. The column 'Holistic/specific' denotes whether the research looked into the overall performance improvement of the healthcare institution and the capabilities needed for that ('holistic') or just into one aspect ('specific'). The column 'Framework' indicates whether the literature source provides a framework that healthcare institutions can use when improving the quality of their institution. The column 'Longitudinal' points out whether the research described in the literature source was longitudinal of nature, i.e. whether one or more healthcare institutions were followed through time in their application of the research findings described in the source.

Authors	Topic	Findings	Holistic / Specific	Frame work	Longitudinal
Aboramadan et al., 2021	Investigating the effect of authentic leadership and management capability, with work engagement as an intervening mechanism, on hospital performance.	Both authentic leadership and management capability have a positive effect on hospital performance, with work engagement having a mediation effect.	Specific	No	No
Agwunobi & Osborne, 2016	Exploring whether the dynamic capabilities framework can be used to achieve competitive advantage in the healthcare environment.	The dynamic capabilities framework provides understanding where to focus efforts to create competitive advantage and illuminates the causes of the mismatch between hospitals' capabilities / leadership skills and the demands of the environment.	Holistic	Yes	No
Al-Taweel, 2021	Exploring the effect of adopting categories of high-performance work practices (HPWPs) in human resource management in health dispensaries.	HPWPs led to improvement in innovation level and creativity, compatibility of human resources practices with employees' qualifications and Experiences, administration of these practices, and individual and institutional goal achievement.	Specific	No	No
Ansari, 2022	Understanding and addressing the challenges of integrating TQM into the healthcare industry.	TQM implemented in the right environment with committed leadership and supportive infrastructure drives service quality, improved customer and employees' satisfaction and loyalty, and increased profitability and shareholder value.	Holistic	no	no
Asaria et al., 2022	Exploring the relationship between management and public sector hospital performance.	Hospitals with more managers are more likely to achieve waiting targets and treat more patients, no association between either the amount or quality of management input for the other measures of hospital performance (because of limited discretion in performing managerial functions).	Specific	No	No
Berberoglu, 2018	Evaluating the impact of healthcare employees' perceptions of organizational climate on organizational commitment and perceived organizational performance.	Organizational climate is highly correlated with organizational commitment and perceived organizational performance.	Specific	No	No
Bloom et al., 2015	Analyzing the causal impact of competition on managerial quality and hospital performance.	Higher competition results in higher management quality and improved hospital performance.	Specific	No	No
Chan & Seaman, 2009	Considering the use and usefulness of the balanced	The balanced scorecard can serve as a strategic learning tool, communication and goal alignment tool and as a tool for	Specific	No	No

Authors	Topic	Findings	Holistic / Specific	Frame work	Longitudinal
	scorecard in healthcare organizations.	designing and implementing the performance management system.			
Chambers et al., 2020	Enhancing understanding of context-specific effectiveness of healthcare board practices.	Board leadership behaviors that lay the conditions for better organization performance.	Specific	No	No
Conway & Monks, 2008	Exploring the relationship between employee views of HR practices and employee-level consequences including commitment to change, perceptions of the industrial relations climate and the psychological contract, and work–life balance.	The HR practices valued by employees are very different from the lists of sophisticated HR practices that appear in the high-performance literature, organizations need to pay attention to the basics of the employment relationship.	Specific	No	No
Costa da Silva Bandeira et al., 2020	Reviewing the literature to identify and analyze the practice of Lean Healthcare and its tools in hospital environments.	The use of lean techniques has promoted significant benefits in the work environment, team's conduct, and patients' experience; the human factor most hindered the implementation of these techniques.	Specific	No	No
Curry et al., 2015	Studying the link between hospital organizational culture and hospital performance.	No findings reported.	Specific	No	Yes
de Waal, 2017	Describing a longitudinal study into the effectiveness of the High-Performance Organization (HPO) Framework at a social care and rehabilitation organization	The HPO Framework was used to ward off and contain negative effects of external turbulent developments and thereby helped the institution to perform better than comparable healthcare institutions.	Holistic	Yes	Yes
Duggirala et al., 2008	Highlighting key dimensions of provider-perceived total quality management (TQM) in the healthcare sector.	Positive and significant relationships among 4 dimensions of provider-perceived TQM and hospital performance.	Holistic	No	No
Henrique et al., 2021	Developing a framework to assess the maturity level of lean in healthcare institutions.	25 main critical success factors of lean sustainability in hospitals.	Specific	No	Yes
Ilangakoon et al., 2022	Adopting Industry 4.0 (I4) technologies and lean techniques for improving operational performance.	I4 technologies lead to the improvement of the operational performance.	Specific	No	No
Khodyakov et al., 2021	Examining whether subjective performance assessments from executives match objective performance assessments and explore ways to achieve high performance.	Poor agreement between objective and subjective performance assessments; organizational culture, organizational governance, and staff engagement were levers for achieving high performance.	Specific	No	No
Lega et al., 2013	Discussing the streams of knowledge regarding how management influences the quality and sustainability of health systems and organizations.	Performance is correlated with management practices, leadership, manager characteristics, cultural attributes associated with managerial values and approaches, and doctors in charge of the organization.	Specific	No	No
Leotta & Ruggeri, 2017	Highlighting how the variety of the actors (managerial and health-professional) involved in a performance measurement system innovation are spread out in time and space.	The interaction among the actants involved in the process is related to the type of performance measurement system innovation, i.e. radical vs incremental.	Specific	no	Yes

Authors	Topic	Findings	Holistic / Specific	Frame work	Longitudinal
Mathole et al., 2018	Examining leadership practices and the functioning of maternal health services.	Supportive leadership builds teamwork and enhances entrepreneurship in management systems that are geared to improving maternal care.	Specific	no	no
Matthias & Brown, 2016	Investigating how operations strategy and Lean concepts are applied within a healthcare organization and the degree to which both are understood by senior level personnel.	Operations strategies were not fully developed And best practices were not disseminated, for either patient experience or organizational effectiveness; and operations strategy was a rather vague 'umbrella' term for personnel.	Specific	no	Yes
McAlearney et al., 2013	Investigating the use of high-performance work practices (HPWPs) to improve quality of care and healthcare institutions.	Characterization of the factors that facilitate HPWP implementation in healthcare organizations.	Specific	no	no
McConnell et al., 2013	Studying the effects of adaptation of management approaches that have been successful in manufacturing and technology sectors by health care institutions.	The use of these management practices is associated with higher process-of-care measures and lower 30-day AMI mortality.	Specific	no	no
Mohr et al., 2012	Investigating the relationship between overall employee turnover and operational performance and whether organizational culture is a moderator.	A strong negative relationship between employee turnover and operational performance, but not for organizations with a relatively stronger group-oriented organizational culture.	Specific	no	no
Murphy & Wilson; 2022	Examining the dynamic capabilities of Malcolm Baldrige National Quality Award – Health Care winning hospitals though the theoretical lens of stakeholder theory and dynamic capabilities.	Organization cultures that promote system–wide engagement by empowered internal stakeholders lead to superior performance.	Holistic	no	no
Nair et al., 2018	Examining the impact of healthcare network size on operating costs of hospitals.	Affiliation with large healthcare networks reduces operating costs for quality laggards but increases costs for experiential quality focusers and clinical quality focusers.	Specific	no	No
Narayanamurthy et al., 2021	Documenting the experience and impact of implementing lean thinking.	Reduced the usage of hospital's resources with an expected reduction in costs.	Specific	no	no
Nuti et al., 2018	Investigating the development of performance measurement systems that can assess the population-based value creation process across multiple healthcare organizations while adopting a patient-based perspective.	The need for performance measurement systems to integrate the classic organizational perspective with a user-centered perspective when the aim is to assess environments, processes, or contexts in which value creation stems from the collaboration of multiple providers (integrated co-production).	Specific	no	Yes
Oduro et al., 2020	Examining the supplier relationship management dimensions (communication, cooperation, trust, atmosphere and adaptation) and	Communication, cooperation, trust, atmosphere and adaptation have a significant, positive impact on private hospitals' performance; communication and trust were found to be positively and	Specific	no	no

Authors	Topic	Findings	Holistic / Specific	Frame work	Longitudinal
	organizational performance links of private and public hospitals.	significantly correlated to public hospitals' performance.			
Puthanveettil et al., 2021	Exploring the linkage between total quality management (TQM) practices and organizational performance.	Ten TQM factors improve organizational performance, with top management initiative, continuous process improvement and teamwork as the most contributing factors.	Specific	Yes	Yes
Ramadevi et al., 2016	Developing a human resource management system for improvement of healthcare services.	Training and development leads to employee perceptions of better service quality, reductions in costs, increases in technology utilization, and creation of a high-performing sustainable work culture.	Specific	no	no
Ree et al., 2021	Discuss how managers contribute promoting resilience in healthcare.	Strategies used aim to engage people in collaborative and coordinated processes that adapt, enhance or reorganize system functioning, promoting possibilities of learning, growth, development and recovery of the healthcare system to maintain high quality care.	Specific	no	Yes
Saleeshya & Harikumar, 2023	Measuring the influence of Lean on the performance, both operationally and financially, of hospitals.	Management commitment towards Lean and subsequent application of lean practices has a positive impact on operational and financial performance.	Specific	no	no
Salehnejad et al., 2022	Investigating whether alignment of management practices matter in driving relative excess mortality.	Variation in management practices (decentralization of decision making, effective communication between senior management and staff, senior managers acting on staff feedback, senior managers acting on suggested ideas for improving services) result in differences in performance.	Specific	no	no
Satterstrom et al., 2021	Studying the process of upward voicing (employees' offering of constructive ideas for improvement to those with authority).	Five pathways through which voiced ideas stayed alive to reach implementation by overcoming different forms of resistance.	Specific	no	Yes
Taylor et al., 2015	Studying high performing hospitals to identify factors associated with high performance.	Factors identified: positive organizational culture, senior management support, effective performance monitoring, building and maintaining a proficient workforce, effective leaders across the organization, expertise-driven practice, and interdisciplinary teamwork.	Holistic	no	no
Tortorella et al., 2022	Identifying impact of technologies which are part of Healthcare 4.0 (H4.0) on performance improvement.	H4.0 technologies have a positive and significant effect on institutional performance.	Specific	no	Yes
Tsai et al., 2015	Examining the relationships among hospital boards, management practices of front-line managers, and the quality of care delivered.	Hospitals with more effective management practices provided higher-quality care; and higher-rated hospital boards had superior performance by hospital management staff.	Specific	No	no
Vainieri et al., 2017	Investigating the relationship between top management competencies, information	Managerial competencies are strongly linked to the information sharing process	Specific	No	No

Authors	Topic	Findings	Holistic / Specific	Frame work	Longitudinal
	sharing, and organizational performance.	and positively associated with organizational performance.			
van Schoten et al., 2016	Investigating whether the EFQM Model can serve as a framework for TQM in healthcare.	Applying the EFQM Model in hospitals yielded improvement in organizational performance, a feedback loop in which hospitals used their results to further improve processes, and strong improvement when all the model's elements are considered simultaneously.	Specific	Yes	Yes
Vaughn et al., (2019)	Identifying characteristics of struggling healthcare organizations to identify domains for improvement.	Five domains were identified: poor organizational culture, inadequate infrastructure, lack of a cohesive mission, system shocks, and dysfunctional external relations with other hospitals, stakeholders, or governing bodies.	Holistic	No	No
Vindrola-Padros et al., 2022	Examining underlying concepts guiding design of interventions aimed at low and high performing healthcare organizations, processes of implementation, unintended consequences, and their impact on costs and quality of care.	Successful interventions included restructuring senior leadership teams, inspections, and organizational restructuring by external organizations.	Holistic	No	No
West et al., 2014	Examining how healthcare organizations can nurture and sustain cultures that ensure delivery of continually improving high quality and compassionate care for patients and other service users.	The role of collective leadership is found to be critical for nurturing high-quality care cultures.	Holistic	No	No
Xiong et al., 2017	Reviewing the impact of quality management practices on the performance of public hospitals	The dimensions of employee relations and process management are directly related to the healthcare and non-healthcare performance of public hospitals.	Holistic	No	No
Yücel, 2021	Explaining the impact of transformational leadership on employees' turnover intentions in light of the mediating role of their individual performance.	Transformational leaders encourage employee performance, which in turn decreases their turnover intentions.	Specific	No	No
Zachariadou et al., 2013	Investigating the underlying culture encountered in healthcare.	'Performance orientation' was the desired culture among healthcare professionals, but 'supportiveness' and 'social responsibility' were the main cultures found.	Specific	No	No

APPENDIX 2 – HPO CHARACTERISTICS WITH THE MOST IMPROVEMENT

This appendix shows the HPO characteristics with the most improvement between the first and second HPO diagnosis at the three healthcare institutions (X indicates an increase of more than 0.5 points).

HPO factors		HPO characteristics	Jah-Jireh	Rijn Waal	RST
continuous improvement	1	Our organization has adopted a strategy that sets it clearly apart from other organizations.	X	X	
continuous improvement	2	In our organization processes are continuously improved.		X	X
continuous improvement	3	In our organization processes are continuously simplified.		X	
continuous improvement	4	In our organization processes are continuously aligned.		X	
continuous improvement	5	In our organization everything that matters to the organization's performance is explicitly reported.			
continuous improvement	6	In our organization both financial and non-financial information is reported to organizational members.			X
continuous improvement	7	Our organization continuously innovates its core competencies.	X	X	
continuous improvement	8	Our organization continuously innovates its products, processes and services.	X	X	
openness & action orientation	9	My manager frequently engages in a dialogue with employees.	X	X	
openness & action orientation	10	Organizational members spend much time on knowledge exchange and learning from each other.	X	X	
openness & action orientation	11	Organizational members are always involved in important processes.	X		
openness & action orientation	12	My manager allows making mistakes.	X	X	X
openness & action orientation	13	My manager welcomes change.	X	X	X
openness & action orientation	14	Our organization is performance driven.			
management quality	15	My manager is trusted by organizational members.	X	X	X
management quality	16	My manager has integrity.	X	X	X
management quality	17	My manager is a role model for organizational members.	X	X	X
management quality	18	My manager applies fast decision making.	X	X	
management quality	19	My manager applies fast action taking.		X	

management quality	20	My manager coaches organizational members to achieve better results.	X	X	X
management quality	21	My manager focuses on achieving results.			
management quality	22	My manager is very effective.	X	X	
management quality	23	My manager applies strong leadership.	X	X	
management quality	24	My manager is confident.	X	X	
management quality	25	My manager is decisive with regard to non-performers.	X	X	
management quality	26	My manager always holds organizational members responsible for their results.	X		
employee quality	27	My manager inspires organizational members to accomplish extraordinary results.	X	X	
employee quality	28	Organizational members are trained to be resilient and flexible.	X		
employee quality	29	Our organization has a diverse and complementary workforce.	X	X	X
employee quality	30	Our organization grows through partnerships with suppliers and/or customers.	X		
long-term orientation	31	Our organization maintains good long-term relationships with all stakeholders.			
long-term orientation	32	Our organization is aimed at servicing the customers as best as possible.		X	X
long-term orientation	33	My manager has been with the company for a long time.	X		
long-term orientation	34	New management is promoted from within the organization.			X
long-term orientation	35	Our organization is a secure workplace (physical + psychological) for organizational members.	X	X	X