The role of governance in different types of interhospital collaboration: A systematic review

Abstract

Context: Financial challenges and the need for high-quality care have vastly increased the number of hospital collaborations in recent decades. The governance of these collaborations remains a challenge. The goal of this study is twofold: (1) to investigate the governance characteristics in a hospital collaboration and (2) explore the impact on the performance of the hospital collaboration.

Methods: A systematic review was conducted to provide a comprehensive overview of the evidence on governance in interhospital collaborations. Database searches yielded 9304 candidate articles, of which 26 studies fulfilled the inclusion criteria.

Findings: Governance in collaborations differs in collaboration structure, governance characteristics and contextual factors. Although outcome factors are influenced by contextual determinants and the collaboration structure itself, governance characteristics are of great importance.

Conclusions: A critical challenge for managers is to successfully adapt collaborations structures and governance characteristics to rapidly changing conditions. Policy makers should ensure that new legislation and guidelines for internal governance can be adapted to different contextual factors. Research in the future should investigate the impact of governance as a dynamic process. More longitudinal case study research is needed to provide an in-depth view of the relationship between this process and the performance of a collaboration.

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Introduction

Due to financial challenges and the need for high-quality care, collaboration in the hospital sector emerges. In both public and private health sectors, hospitals are becoming components of larger care networks and the number of collaborations between hospitals is increasing [1]. Interorganizational collaboration van be defined as more than two organizations that work together with a collective goal and an integrated strategy [2]. A collaboration can be organized in different types of organizational structures such as a consortium [3], a joint venture [4], or a network [5]. More radical examples of integration are mergers, acquisitions [6], and health systems [1].

Although different structures exist for hospital collaboration, traditional modes of governance in the healthcare sector mostly remain focused on the governance of individual hospitals which does not suffice in guiding the new collaboration developments [7]. Governance can be conceptualized as "an interaction between people or a group of people (governance-actors) wherein the decision making is not the responsibility of only one party, but where a complex interplay of control and balancing mechanisms should enable to make decisions whereby the interests and goals that lie in the foundations of their relationship are realized" [7]. Little information exists about governance practices in different structures of healthcare collaborations [8]. Therefore, this study gives a comprehensive overview of the governance characteristics in different structures of hospital collaboration by giving insight in the complex interplay of governance practices in hospital collaborations and the contextual factors that influence this interplay.

RQ1: What are the governance characteristics in a hospital collaboration and by which contextual factors are these influenced?

Moreover, research is also needed to determine if and how the adoption of governance is related to healthcare network performance [9]. By classifying the collaboration structure (e.g. a network), the governance characteristics (e.g. the level of integration), and the level of performance (e.g. positive financial outcome), this paper gives a clear overview of the impact on performance of governance in hospital collaborations.

RQ2: What is the impact of governance characteristics on the performance of a collaboration?

Materials and methods

Data Sources

This study draws upon an analysis of the literature from the perspective of a systematic review. Relevant studies were searched for in five databases: MEDLINE, Embase, EconLit, Web of Science, and Soc abstracts. The search was conducted in July 2017. The concepts of hospitals, forms of collaboration, and governance were combined into a standardized search string using MeSH (e.g., 'Hospitals'; 'Hospital Administrators'; 'Governing board') and non-MeSH ('In-patient setting' combined with 'collaboration'; 'Governance'; 'Hospital management') entry terms. The search string was developed in Ovid-MEDLINE and was replicated and adjusted for the other data sources.

Inclusion and exclusion criteria

The systematic literature review focused on papers written in English, French, and Dutch published between January 1995 and July 2017. This time frame was selected because research articles on hospital collaboration began to emerge in this period [10]. Collaborations between two or more general hospitals or collaborations between healthcare service providers of different structures, in which at least one general hospital participated, were included. Studies that focus only on psychiatric hospitals were excluded. Studies that did not describe governance

characteristics or practices were excluded. We searched for studies published in peer-reviewed journals, and both qualitative and quantitative studies were included. Editorials, perspectives, comments, letters, conferences, and proceedings were out of the review's scope.

Selection process and data extraction

Two reviewers searched independently for relevant studies using a standardized search strategy. The studies were selected in a two-step procedure. First, the search results were filtered by title and subsequently abstract, and then narrowed down according to the formal inclusion and exclusion criteria. Those excluded were mainly duplicates or references to nonempirical studies. The remaining studies were selected for full-text retrieval. In case of noncorresponding results, consensus was sought through consultation with two other reviewers. In addition, the reference lists of relevant publications were screened and a forward citation track was used. The included articles were methodologically assessed by two researchers for conformity with the method of Hawker et al. (2002) [11]. Each paper was scored on nine different topics; which allowed to review the disparate data systematically. Hawker et al. (2002) [11] argue that their quality appraisal method can evaluate the research methods used in a broad range of qualitative and quantitative health research papers, and thus determine their strengths, weaknesses, and benefits. Papers that were rated below four on a score out of nine were excluded. To provide a summary of the studies the country, the collaboration structure, a summary of the governance characteristics and the impact were described. The categorization of the collaboration structure and the impact was built on an extended summary of all papers. The two reviewers independently categorized the collaboration structure and the impact of the collaborations building on an extended table of information including: the type and number of studies included, analysis type, the definitions of collaboration and governance, the purpose, the design, the method used, the predictors, outcome measures and findings of the included studies. Thereafter the individual interpretation was discussed and included in Table 1.

Results

Search and inclusion

Our literature search initially yielded 8936 unique candidate articles after duplicates were removed (Figure 1). Their relevance was examined based on their titles and 670 articles were selected for abstract retrieval. On the basis of an abstract review, 517 articles were excluded from further review. After this step, the 153 references that appeared to meet the study eligibility criteria were reviewed thoroughly (as full text). Several articles did not meet the inclusion criteria and, after consensus was reached between the authors, a total of 22 articles were included. The references in these papers were also checked using the snowball method, thereupon 130 additional titles were included. After screening abstracts and full texts, eight records were retained. As no additional studies were identified through their references, this resulted in a final sample of 30 studies in the review. Using the method of Hawker et al. (2002) [11], 22 studies had a score of seven or more and could thus be considered high-quality papers with a rigorous methodological approach; four papers were qualified as medium quality and four papers had a score below four, which indicates rather low methodological rigor. The four papers with scores this low were not included in this literature review. As a consequence, the final number of studies included was 26.

Insert Figure 1. Search strategy flow chart

Most of the studies originated in the US (n = 15) [13-19,24,27-32,35], and one from Canada [25]. Only few studies were carried out in Europe (n = 3) [21,22,26]. Five were carried out in Asia [12,20,33,36] and two in Australia [8,34]. The reviewed articles presented data on different structures of collaborations: health networks (n=13) [8,15,20-23,25-27,30,33,34,36]; health systems (n = 4) [17,19,32,35], or on both (n = 9) [12-14,16,18,24,28,29,31]. A health network is a voluntary, loose type of organization formed to pursue common objectives formed

by a group of hospitals through a strategic alliance or a contract agreement. In health systems more permanent relationships exist. Multiple hospitals are owned and managed by a certain legal entity, in which all or most of the hospitals possess legally recognized common ownership and management rights [12].

Health networks are investigated all over the world (see Table 1). Only in the United States and Taiwan health systems are studied.

Insert Table 1. Comparison of the collaboration structures for each country

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The description of the governance characteristics in Table 2 shows that governance is not a standalone issue but is related to a lot of contextual factors (cf. RQ 1). The main contextual factors identified in the studies are the collaboration structure, the governance mechanisms, evolutions over time and obligatory collaborations. The next section elaborates on each of these contextual factors.

Insert Table 2. Description of the collaboration structure, the governance characteristics and the impact on performance

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Governance characteristics

Governance is related to the collaboration structure

Overall, the results show that governance is related to the collaboration structure. In a health network the governance characteristics are less integrated and complex than in a health system. Governance within a health system is more centralized and more built upon binding regulations. Table 3 shows the differences between the characteristics in a health system and a health network.

Insert Table 3. Differences in governance characteristics of hospital collaborations

Bazzoli et al. (1999) [13] identified three governance characteristics: differentiation, integration, and centralization. Differentiation refers to the number of different products or services along a healthcare continuum. Integration describes the mechanisms used to achieve a unity of effort across organizational components; centralization relates to the extent to which activities take place at centralized locations rather than dispersed locations. They found that differentiation and centralization were particularly important in distinguishing unique clusters of organizations. High differentiation typically occurred with low centralization, which suggests that a broader scope of activity is more difficult to centrally coordinate. In comparing the governance structure of health systems with health networks, the results demonstrate that health systems are more centralized and more binding than health networks. In particular, health systems centralize hospital services and physician arrangements.

Zhu et al. (2013) [14] also compared characteristics of hospitals that participated in healthcare networks and health systems. They provided an overview of the overall increase in system and network participation in the US. Health system affiliation represents a stronger, contractual form of integration, as participating hospitals are "owned, leased, sponsored, or contract managed by a central organization". In comparison, networks can take different forms of interorganizational relationship (e.g., alliance, agreement, or voluntary participation) to coordinate care. Nauenberg and Brewer (2000) [15] indicated that the most common network structures (26.4%) had medium levels of integration, medium or high levels of complexity, and some risk sharing.

Three other articles did not find any important governance differences between health systems and networks [16-18]. Alexander et al. (2003) [16] compared two large samples of health systems and health networks. The governance of systems and networks was not found to

differ substantially in terms of structure or composition. Despite theoretical arguments that network governance would be more informal than system governance, their findings indicate that the majority of both types of organized delivery systems have separate governing bodies, and there is no central board administered by all affiliated organizations. However, there is a high proportional representation of affiliate organizations in the separate boards. Prybil et al. (2010) [17] provided an overview of governance characteristics in systems that are part of a parent organization, as opposed to being independent systems. The governance characteristics they investigated were board education and development, leadership team building, measures and standards from other than the highest hierarchical level of the system, functions handled by hospitals and other healthcare organizations within the system, and whether the board receives formal system wide reports. The descriptive results in the study do not show any important differences between the two forms of collaboration exploring these governance characteristics. Further, Esposto (2004) [18] investigated the contractual integration of physician and hospital services in the US. Whether or not the hospital is part of a health system or health network is related to the integration of physicians, with the integration of physicians being larger in collaborating forms like health networks and health systems than in single hospitals.

Governance is related to collaboration mechanisms

The structure of collaboration is not the only thing that relates to the governance characteristics. Ruef and Scott (1998) [19] and Jung and Choi (2010) [20] elaborated on the significant increase in strategic coalitions in healthcare, particularly after the 1990s. The structuralization of the referral networks emerged merely around major university hospitals; a more hierarchical relationship with the tertiary hospital was identified, and this had an influence on the governance of the hospitals. This is seen as a consequence of normative isomorphism, since it builds on the principles of organizational learning in a specialized area and emerges via the embeddedness of new structures within mother organizations. In line with this, Addicott

and Ferlie (2007) [21] found that the importance of large teaching hospitals in decision making was due to their bounded pluralism. As a consequence, bounded pluralism and normative isomorphism influence the governance characteristics in collaborations. Addicott's (2008) [22] findings demonstrate that resources and power were predominantly shared amongst a bounded group of elite medical professionals (rather than senior managers) from large teaching hospitals, while the interests of smaller district hospitals were seemingly ignored. Only one board was able to exert a noteworthy impact, on account of the seniority of its members. Only some (elite) groups were permitted to dominate the distribution of resources and power, this reflects historical power relationships within the health service—a model dominated by the medical profession.

Governances is related to evolutions over time

Governance is not a static condition. Ruef and Scott (1998) [19] described differences in governance of collaboration over three different time periods in the US. During the period of professional dominance (1945–1965), there is less central steering. The era of federal involvement (1966–1982) represents a dramatically different institutional regime, with a substantial degree of centralization and an increasing number of ties among sector participants. During the period of managed competition (1983–1990), the healthcare sector again experienced decentralization, albeit with widespread provider linkages and exchange relations. Likewise, Probandari et al. (2011) [23] indicated that collaborations between public and private partners change over time. They identified four stages in the evolution of a collaboration. They indicated that strategies, power, and interactions between actors are important aspects of the process of collaboration, and concluded that good collaboration governance is needed if the collaboration is to be effective and sustainable. Finally, Hearld et al. (2016) [24] suggested that there are fluctuations in particular forms of the governance characteristics of interorganizational collaborations—for example, there was an increase in the prevalence of multisystem (i.e.,

health system) hospital relationships and a general decline in contract management relationships (i.e., NAO) over time.

Governance is related to willingness

As we found a lot of studies aiming to describe the impact of mandated collaboration and showing the differences with bottom-up collaboration, it is important take the boundary conditions of mandated collaborations into account. Rodriguez et al. (2007) [25] showed that the organizations involved in a collaboration relied principally on clan-based mechanisms (interactions among actors) alone. By providing no clear formal rules, the mandating agency left the partner organizations in a situation of increasing ambiguity, causing them to be unable to resolve differences. A managerial perspective was identified as important, but two additional explanations—symbolic and political—were also identified as helping explain why mandated collaboration initiatives often become the site of intensively participative but unproductive processes in the UK. Addicott (2008) [26] showed that the initial knowledge-sharing purpose of networks underwent top-down 'distortion' by the demands of the UK central government. Despite attempts to delegate authority to the local level, networking did not encourage a plurality of actors to engage in a more reflexive process of dialogue and information exchange; an elite subgroup of the medical profession still dominated. Boards had limited strategic influence, with decision-making power and budgetary responsibilities remaining with the statutory authorities. As such, this mandated collaboration also resulted in the superficial bottom-up adoption of the network model, with limited impact upon organizational processes. Grafton et al. (2011) [8] carried out an empirical analysis of three hospital networks that were mandated. They observed tension in the network design relating to the achievement of efficiency and imperatives where the incentive to collaborate and the form of the hospital network were mandated by government. The network design of the three organizations diverged as a consequence of the differences in their potential to generate gains in efficiency and

legitimacy (the perceived validity of institutional expectations) from the collaboration. The organizations' commitment to the ideals underlying the institutional mandate, and their willingness to pursue effective collaboration, also has an impact on the level of collaboration. They adopt structural and control system designs that reflect different levels of clinical activity integration, and different degrees of substantive acceptance to the institutional mandate to collaborate. Their findings indicated that the strategic responses of organizations to mandatory collaboration differ, and that thus affects performance outcomes. It is important to consider the rationale for institutional pressure, the influence of constituents, and the nature of institutional governance characteristics when developing networks or other forms of collaboration

Impact of governance characteristics

The second aim of this study (RQ2) is to investigate the impact of governance characteristics – whether or not influenced by the context– on the performance of a collaboration. Table 1 shows whether the impact of the governance characteristics is positive (N=5) [12,19,27,30,31], negative (N=1) [21], mixed (N=8) [25,28,29,32-36] or not applicable (NA, N=12)[8,13-16,17,18,20,22-24,26]. A difference was made between financial outcomes & effectiveness ratios and other outcomes when describing the results.

Governance impact on financial outcomes & effectiveness ratios

An important objective for collaboration between hospitals is the financial motive (Moscovice et al.,1995) [27]. Six papers were found to evaluate the impact of several forms of collaboration on financial performance, taking governance characteristics into account [27-32]. Two papers analyzed the impact of networks and governance characteristics [27,30] on financial outcomes and other efficiency ratios. Nauenberg et al. (1999) [30] found that the least integrated networks were associated with the smallest improvements in throughput, and the most complex were associated with the largest negative operating margins (e.g. throughput, number of hospital visits, inpatient costs, …). Networks with higher levels of integration, lower

levels of complexity, and with some risk-sharing between affiliates were the most likely to experience improved hospital financial performance during the network's initial years. Moscovice et al. (1995) [27] investigated the impact of rural network collaboration on financial outcomes. These networks join together primarily to improve cost efficiency. However, no short-term economic benefit was found. Two of the papers in this category carried out a financial analysis of hospital alliances while evaluating the number of owners as a hospital governance characteristic [28,29]. Their results suggest that strategic hospital alliances with more than one owner have higher net revenues, but they are not more effective at cost control.

Rosko and Proenca (2002) [31] investigated the impact of the complexity of health networks and health systems, as well as their integration, on financial outcomes; their results suggest that hospitals using networks or systems to provide services to a moderate or high level were more efficient than hospitals that did not use networks or systems for service provision. Low users of networks or systems, and organizations without any affiliations, had comparable levels of efficiency. Henke et al. (2016) [32] assessed, among others, the impact of hospital affiliation on inpatient costs. They found that hospitals affiliated with health systems had a higher cost per discharge.

Impact on other outcomes

Nine papers focused on other outcome variables [12,19,25-27,32-35]. For example, in the article of Kim and Burns (2007) [33], which analyzed the difference in network performance, the outcome variables were the number of patient referrals, the perception of the hospital efficacy, and the performance improvement. The key success factors were quality of leadership, information sharing, and personal contact between the organizations, and the partner's willingness and receptivity to network. Similar, McInnes et al. (2012) [34] investigated the most important conditions for establishing successful clinical networks. Five key factors were represented as subthemes under effective network structure, organization, and

governance. These subthemes were building relationships, effective leadership, strategic evidence-based workplans, adequate resources, and the ability to implement and evaluate network initiatives. Two desirable outcomes were discussed: connecting and engaging (which represents the outcomes of interdisciplinary and consumer collaboration and partnerships with state health and local health services), and changing the landscape of care (which represents the importance of outcomes associated with improving services, care, and patient health outcomes and implementing evidence-based practice). Governance has an impact on both outcomes.

Ruef and Scott (1998) [19] investigated whether the extent of centralization of national governance and formalized linkages were likely to dictate how managerial and technical legitimacy can enhance organizational survival. Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions. The results indicate that being a system member does have an impact on the chance of survival, but there is no effect on the level of legitimacy. Moscovice et al. (1995) [27] also shows that mutual resource dependence and the presence of a formalized management structure increases the chances of survival. Henke et al. (2016) [32] demonstrated that, although hospitals affiliated with health systems had higher costs per discharge, they also have better quality of care than independent hospitals. Yu and Chen [12] show that health systems with common ownership and management rights have greater positive effects on hospital efficiency than voluntary and loose health networks. This relationship is especially significant for private hospitals, local community hospitals, and hospitals in highly competitive regions.

Rodriguez et al. (2007) [25] showed that acute care collaboration was the only type of collaboration that could be qualified as a moderate success, with the collaborations in elderly care, in community clinics, and in medical clinics experiencing more problems. By the end of the study, the acute care patient referral process was seen to function relatively smoothly,

although the extent of coordination achieved was variable from one setting to another. This relative success can be related partly to the governance strategies used, clan-like governance mechanisms, and hierarchical governance mechanisms. Addicott et al. (2007) [26] compared five managed clinical networks for healthcare. Overall, there was strong resistance to any changes being implemented and there was little impact on the organizational processes. Only one network, in which the network management team was viewed positively and had an open and facilitative approach to implementing changes, was able to implement some education and training activities. In this case, the team was able to successfully leverage pre-existing relationships to build support for and engagement in the network, and to adapt interventions to the local context due to better internal governance. Lin (2007) [36] focused on the impact of a primary community care network (PCCN) and compared governance characteristics for hospital–clinic relationships and clinic–clinic relationships. This author indicated that, due to the higher control of collaborative plans and goals in similar organizations (clinic–clinic relationships), the results were better than in hospital–clinic relationships.

Alexander et al. (2006) [35] found no relationship between organizational performance and governance configurations. Organizational performance influences the change in organizations, but is not related to organizational governance configurations. Only in the case of closure did these authors find that the governance configuration operated jointly with organizational performance.

Discussion

This study aimed to provide a structured and comprehensive overview of the role of governance in hospital collaboration. As we found no clear evidence of important differences between the collaboration structure and governance characteristics, this study shows an intertwined relationship between governance characteristics and collaboration structures. Some

authors indicated that the governance characteristics of networks and systems do not differ substantially [16,17], while others demonstrated differing results [13-15]. They claim that networks are more decentralized and more differentiated than systems [13]. Beyond that, system affiliation represents a stronger contractual form of integration than networks [14]. However, the level of integration is limited, and in health systems the board is generally still decentralized [16].

Next to characteristics related to the collaboration structures, more overall determinants are identified [8,19-25]. Hospitals tend to centralize around tertiary hospitals because of normative isomorphism. One determinant addressed by Addicott and Ferlie (2007) [21] is bounded pluralism. The plural–elite model of power found in their data supposes that elite groups retain their autonomy in social relations and decision-making, rather than all partners cooperating. Determinants such as government policies, the national healthcare system, and governmental financial incentives can all influence the outcomes and structures of governance employed [8]. The national context affects the governance characteristics found in a country [26]. Mandated collaboration requires the mobilization of multiple different governance mechanisms [8,25]. These results demonstrate that there is a need for more formal rules in mandated collaborations and it is important to align the goals of the government with the goals of professionals [3]. Previous research has revealed that network characteristics [2] should not be viewed as static; our results are in line with this [19,23,24]. Circumstances influence the distinct patterns of collaboration, as well as the primary collaboration themes.

Governance characteristics do, to some extent, affect the performance of a network [19,25-35]. Networks with higher levels of integration and lower levels of complexity were the most likely to experience improved performance [30]. Alexander et al. (2006) [35] and Moscovice et al. (1995) [27] also indicated that the presence of a more formalized management structure and the application of more corporate governance principles increase network

performance. Since governance structures in networks are looser and more complex than in health systems [13], these results might indicate that health systems perform better in the long run [12,26], For example, an increasing level of health system affiliation may lead to higher quality [32]. Having a network-based implementation group with a 'joined-at-the-top' governance structure (governance structure at network level) also appeared to promote network effectiveness [21]. However, not all studies supported these findings. Individual characteristics of hospitals also affect the performance of a collaboration. Yu and Chen (2013) [12] found that the positive impact of participation in health systems is especially significant for private hospitals, local community hospitals, and hospitals in highly competitive regions. Kim and Burns (2007) [33] state that success factors of collaborations are less related to the hospital structure and are more related to the governance of the network process, which shows the importance of evolution.

One critical challenge for managers is thus to successfully adapt governance structures to rapidly changing conditions, as determinants have a great impact. By acknowledging the variety of different factors and considering a broader range of partners, organizations may identify potential collaborators that can enable or contribute to the establishment of efficient collaborations. Policy makers should facilitate the adaptation of governance structures to different contextual factors, as governance is influenced by many other factors and is identified as a process.

Limitations and challenges

This review has included only published peer-reviewed studies, and is thus susceptible to publication bias. It excluded hand searching, grey literature, and foreign language journals, and was limited to a time period of 20 years. This may have led to omissions of relevant material. Many cross-sectional analyses were found—these are less rigorous than longitudinal

research. We further note that a significant number of studies were performed by the same research groups and in the same country. Connections between these studies may be present and unaccounted for in the systematic review. Moreover, different countries were studied, all with their own political, economic, cultural and institutional complexities, as such, cautiousness is needed when generalizing the results.

We were are able to identify a number of gaps in existing empirical knowledge of the contexts and outcomes of collaboration governance; these provide significant avenues for further research. First, future research should investigate the impact of governance on hospital collaborations as a dynamic process that interacts with other factors in a collaboration. As such, more longitudinal case study research is necessary to provide an in-depth view of the relationship between this process and the performance of a collaboration. Second, we have explored the connection between collaboration, performance of the collaboration, and how this may be mediated by governance or context. The data we reviewed are still fragmented and diverse, leaving a clear opportunity for empirical studies to clarify the relationships between the three elements (context, outcomes, or governance instruments) by controlling one of them in a comparative study.

Conclusion

To our knowledge, this is the first published comprehensive literature review on governance in interhospital collaborations. This review shows that governance is of great importance, although outcome factors are also affected by external determinants and the collaboration structure itself. Unfortunately, taken as a whole, the studies that have been published do not provide any clear direction on how interhospital collaborations should be governed. Since governance structures in networks are looser and more complex than in health systems [13], these results might indicate that health systems will perform better in the long run

[12,26]. However, not all studies support these findings. Individual characteristics of hospitals also affect the performance of a collaboration. As such there is no single appropriate answer on how governance in different collaboration structures should take shape.

Healthcare managers need to adapt governance structures to rapidly changing conditions and to invest in performance evaluation and management of interhospital collaborations.

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