Journal of Operations Management 42-43 (2016) 62–79

Contents lists available at ScienceDirect

Journal of Operations Management

journal homepage: www.elsevier.com/locate/jom

Collaboration between service professionals during the delivery of health care: Evidence from a multiple-case study in U.S. hospitals

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ARTICLE INFO

Article history:
Available online 6 April 2016

Accepted by Mikko Ketokivi

Keywords:
Case study
Professional services
Health care delivery
Cross-level collaboration
Formal and informal integration mechanisms

ABSTRACT

We investigate service delivery in one specific type of professional service firms (PSF), namely hospitals. A distinctive operational feature of this setting is that the delivery of health care services requires continuous collaboration between two professional workforces: physicians and nurses. We conducted a multiple-case study at five acute care U.S. hospitals, which involved 49 semi-structured interviews, to uncover the organizational mechanisms that facilitate effective collaboration between physicians and nurses. Our analyses suggest that they experience distinct challenges that prevented collaboration during health care delivery. Specifically, physicians typically favored evidence-based standards of care which can sometimes undermine patient interactions. We refer to this preference as a disease-focus challenge. We also found that nurses were often hesitant to speak-up during their interactions with the physicians, which constitute a hierarchical challenge. Commonly prescribed mechanisms, such as multi-disciplinary rounding, were not effective in overcoming these challenges. Our analyses revealed new forms of collaboration between different levels of the physician and nursing entities, which we denote as "nursing-led cross-level collaboration" and "physician-led cross-level collaboration". Our study suggests that nursing-led cross-level collaboration helped mitigate the disease-focus challenge experienced by physicians while physician-led cross-level collaboration helped mitigate the hierarchical challenge experienced by nurses. It also offers preliminary insights on how PSF in general can develop and sustain such collaboration. Taken together, our findings offer new insights on the micro-foundations of work performed by PSF.

1. Introduction

In recent years, scholars have shown a lot of interest in studying the operational challenges experienced by professional service firms (PSF) (Greenwood et al., 2005; Williams and Nersessian, 2007; Lewis and Brown, 2012). A vast majority of this research defines PSF as firms whose operations primarily depend on the complex technical expertise or knowledge intensity of their workforce (Von Nordenflycht, 2010). This definition has resulted in firms from a variety of industries such as accounting, law, advertising, banking, IT, management and engineering consulting, hospitals, and universities to be grouped together as PSF. Deriving a common understanding on the functioning of PSF by studying such a diverse group of industries can be a daunting task. As a result, recent studies on PSF have further characterized them based on dimensions such as their level of capital intensity, and their dependence on professional workforce (Von Nordenflycht, 2010). Such characterization can help researchers take a more granular approach and advance theories on the micro-foundations of work performed in PSF.

The purpose of this research is to extend this line of enquiry by investigating the functioning of one specific type of PSF, namely hospitals. Like all PSF, hospitals rely on high levels of knowledge intensity (Alvesson, 2000), i.e. complex knowledge held by the individual professionals who deliver the care. However, hospitals also exhibit a number of characteristics that makes their operations somewhat different from other PSF and warrant more granular investigation. For instance, in terms of interactions with the consumers, hospitals' patients have a unique and diverse set of needs both in terms of severity – e.g. common cold vs. heart attack – and chronicity – e.g. simple fracture vs. long-term heart failure. Process

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http://dx.doi.org/10.1016/j.jom.2016.03.004
0272-6963/

variability is also compounded by external constraints such as payment structures (Medicare, Medicaid vs. other insurers) which results in hospitals having to, on a case-per-case basis, adapt processes to satisfy the requests of multiple customers including patients, federal agencies, and private insurances. Thus findings from existing literature that process variability in PSF are mostly due to "professional preference(s), rather than customer interaction/customization or external constraints" (Lewis and Brown, 2012: p.9) may not be entirely true in hospitals. In the midst of this constant requirement for adaptation, a particularly salient aspect of hospitals' operations is the need for continuous collaboration between two distinct professional workforces, namely physicians and nurses. Although other PSF such as architectural firms also rely on different professional workforces (e.g. architects vs. structural engineers), the relentless pressures and previously identified distinctive challenges associated with treating acutely ill patients can heighten the collaboration challenges among health care professionals. Both physicians and nurses have unique skills which are complementary in the delivery of health care. For instance, physicians' education focuses on the treatment of diseases (Hojat et al., 2002; Levinson et al., 2010; Wen and Kosowsky, 2013) and their skills are well aligned with the close monitoring of evidence-based standards of care. We use the term conformance quality to represent hospital's level of adherence to these standards of care as documented on patients' medical records (Senot et al., 2016a). On the other hand, nurses' education is more holistic in approach. It includes clinical training but also elements such as patient's overall wellness and community-based service learning which facilitates "a sense of caring for others" and the "learning about cultural diversity" (Callister and Hobbins-Garbett, 2000: p.178). Thus, nurses are often better equipped than physicians to interface with the patient during the delivery of care. We define experiential quality as the level of interaction between the hospital's caregivers and patients during health care delivery, as experienced by the patient (Chandrasekaran et al., 2012).

Studies show that synergies exist between conformance and experiential quality in terms of reducing readmission rates (Senot et al., 2016b) and improving patient satisfaction (Chandrasekaran et al., 2012). Noting these synergies, the Centers for Medicare and Medicaid Services (CMS), a public regulatory entity which covers the majority of patients in U.S. hospitals, changed their reimbursement policy, thereby setting the tone for all other payers. Beginning October 2012, U.S. hospitals are at risk of losing 1% of their pre-determined reimbursement rates for CMS patients if they do not show sufficient levels of conformance and experiential quality (cms.gov), with this penalty increasing to 2% by 2017. An apparent solution to avoiding these penalties is to promote collaboration between physicians and nurses during the delivery of health care. However, promoting such collaboration can be challenging for hospitals. Indeed, these professions have distinct strict regulations, which imply some separation between the two workforces. Furthermore, while both professions share a common goal, i.e. caring for the patient, they have different knowledge bases (i.e. different educations), which can lead to disagreements on the approach to delivering care. This tension is exacerbated by the "cat herding" problem, which is defined as the difficulty to retain and direct individuals and which is common in PSF (Lorsch and Tierney, 2002). Thus, hospitals face the additional challenge of promoting collaboration between nurses and physicians when each group itself presents management challenges. The purpose of this research to investigate the following research question: *How do hospitals promote collaboration between physicians and nurses at the patient level during the delivery of health care?*

We use a case study approach to collect and analyze data from the heart failure units of five major teaching hospitals (Hospitals A, B, C, D & E) to investigate this question. Given our unit of analysis, we henceforth refer to "Hospital X" when discussing the heart failure unit of hospital X. Our case study involved 49 semi-structured interviews regarding the delivery of care at both the strategic (e.g. Chief Medical Officer, Chief Nursing Officer, Chief Quality Officer, Director of Patient Experience) and operational levels (physicians and nurses). We also supplemented this data with other forms of data including training manuals, newsletters, scorecards, and organizational charts. The analyses revealed that physicians and nurses experienced different challenges that prevented collaboration during health care delivery. Specifically, physicians tended to focus on the disease and operated based on technical standards. As a result, they tended to favor conformance quality, often at the expense of experiential quality. We refer to this preference as the disease-focus challenge. Nurses were the primary interface with the patients and were more familiar with important personal information such as allergies, unique patients' circumstances, and their preferences, which was needed to design effective care plans. However, we found that nurses were often culturally challenged to speak up during care delivery due to the hierarchical difference between nurses and physicians. We refer to this cultural barrier as the hierarchical challenge. This also resulted in the unit's difficulty to promote collaboration between physicians and nurses.

Our analyses further revealed that the commonly prescribed mechanisms, such as lateral collaboration between leaders of the physician – i.e. medical – and nursing entities (Jansen et al., 2009) and multi-disciplinary rounding involving nurses and physicians (Gurses and Xiao, 2006), were present in all five hospitals but were not sufficient to promote collaboration at the patient level during health care delivery. What was interesting was that Hospital E, which improved simultaneously on conformance and experiential quality over the previous five years, had two different forms of cross-level collaboration – physician-led and nursing-led – which are not discussed in the literature. Specifically, nursing-led cross-level collaboration involves frequent interactions between a higher level of the nursing entity and a lower level of the physician entity. It helped mitigate the disease-focus challenge experienced by physicians. This form of cross-level collaboration was also present in Hospital D. We also found that Hospital E had physician-led cross-level collaboration, which involves frequent interactions between a higher level of the physician entity and a lower level of the nursing entity. This collaboration helped mitigate the hierarchical challenge faced by nurses. These results offer new insights into how hospitals, and perhaps other PSF that rely on multiple professional workforces, can encourage and support effective collaboration between professional entities.

2. Research design

2.1. Research sites

The research sites for this case study consist of the heart failure units from five U.S. acute care hospitals. Our preliminary conversations with the hospital leaders and caregivers suggested that heart failure patients immensely benefit from high levels of conformance and experiential quality. Indeed, the chronic aspect of the heart failure condition makes it essential for caregivers to not only properly diagnose and treat the symptoms of their disease in the short-term but also to ensure that the patient understands and agrees with the treatment plan and is able to adhere to it long after discharge. Therefore, we selected the hospitals using secondary data on conformance and experiential quality. Both the current scores (see Table 1) and progression along conformance and experiential quality (2006–2012; see Fig. 1) were used to sample these hospitals. Following existing literature, we calculated