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Improving Hospital Efficiency: A Process Model of Organizational Change Commitments

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Abstract

Improving hospital efficiency is a critical goal for managers and policy makers. We draw on participant observation of the perioperative coaching program in seven Ontario hospitals to develop knowledge of the process by which the content of change initiatives to increase hospital efficiency is defined. The coaching program was a change initiative involving the use of external facilitators with the goal of increasing perioperative efficiency. Focusing on the role of subjective understandings in shaping initiatives to improve efficiency, we show that physicians, nurses, administrators, and external facilitators all have differing frames of the problems that limit efficiency, and propose different changes that could enhance efficiency. Dynamics of strategic and contested framing ultimately shaped hospital change commitments. We build on work identifying factors that enhance the success of change efforts to improve hospital efficiency, highlighting the importance of subjective understandings and the politics of meaning-making in defining what hospitals change.

Keywords

hospital efficiency, framing, professions, organizational change

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Improving hospital efficiency is a critical concern for health care managers and policy makers. Hospital efficiency reflects the ratio of the value of health services delivered—both the quantity and quality of care—to the resources used in producing health services. Increased efficiency is central to performance improvement in hospitals and the larger health system, and a main goal of hospital organizational change efforts (Bazzoli, Dynan, Burns, & Yap, 2004; Berwick, 1989; Shortell et al., 1995). Improved hospital efficiency is also an important means of achieving the policy goal of increasing value in the health care delivery system—slowing the rate of health care inflation while maintaining quality (Shortell, 2004). Hospitals have substantial room to improve efficiency and can use reclaimed resources to invest in improved quality or better access (Mutter, Rosko, Greene, & Wilson, 2011). Because medical care is in most cases a product of coordinated work across multiple organizational members and units, there are multiple, potentially interacting determinants of hospital efficiency (cf. Helfrich, Weiner, McKinney, & Minasian, 2007). As a result, hospitals can make numerous changes to increase efficiency, and different hospitals can vary in their approach (Berwick, 1989).

While much research on hospital efficiency has focused on developing methods for measuring efficiency (Mutter et al., 2011), a growing body of work has begun to explore the process and outcomes of organizational change efforts to improve efficiency (Fraser, Encinosa, & Glied, 2008). This work has developed our knowledge of the effects of different programs on efficiency (Olson, Belohlav, Cook, & Hays, 2008), the role of market and institutional pressures as drivers of organizational change efforts to improve efficiency (Durkin, Deutsch, & Heinemann, 2010), and the impact on efficiency of organizational factors such as leadership, culture, coordination, and participation by frontline employees (Conrad et al., 1996; Ferlie & Shortell, 2001; Fraser et al., 2008; Shortell et al., 1995; Tucker, Singer, Hayes, & Falwell, 2008; Weiner, Shortell, & Alexander, 1997).

Focusing specifically on organizational change efforts that aim to increase hospital efficiency, this article shows how the dynamics of *framing* within and across professional groups can influence the choices that hospitals make in their effort to increase efficiency. It draws on participant observation of a provincial government initiative—the perioperative coaching initiative—to improve perioperative efficiency in hospitals in Ontario, Canada, to develop a conceptual framework explaining how hospitals make decisions about how to target certain possibilities in their efforts to increase efficiency, and exclude others.

New Contribution

In analyzing *how* hospitals make choices about what to change, we build on and extend an emerging body of work identifying general factors—such as a supportive culture, or physician leadership—that affect the outcomes of efforts to improve efficiency (Bazzoli et al., 2004; Fraser et al., 2008; Tucker et al., 2008). We complement this work by examining the content of change efforts that aim to improve efficiency and the process by which that content is defined. We develop a conceptual model of how

framing across professions influences hospitals' choices about what to change. In doing so, we take up the call for research examining what hospitals "actually do as they implement major organizational change" (Bazzoli et al., 2004, p. 321) by examining the organizational decision-making processes that define the content of change.

Our focus on how hospitals define the content of organizational change efforts that aim to increase efficiency led us to our second contribution: a focus on the importance of framing. With some exceptions (Hoff et al., 2011), health services research largely focuses attention on objective triggers or preconditions of organizational change, such as incentive systems that support change, the role of institutional or market pressure in causing change, or the importance of physician or senior management support (e.g., Bradley et al., 2001; Helfrich et al., 2007; Shortell, 2004). A fundamental insight of research on framing is the idea that individuals' subjective understandings, or schema, can shape their actions in support of or against change. As a result, actors achieve organizational change, in part, by trying to alter others' subjective understandings or schema in a way that either gains their support or neutralizes their opposition. By introducing the literature on framing to a health services research audience, we offer a conceptual framework for analyzing both the importance of subjective understandings and schema and the role of change agents' efforts to influence the schema of others.

Conceptual Framework

The basic insight that emerged from our research was that hospital decisions about what to change in their effort to improve efficiency were driven by framing processes across professional roles. Our conceptual framework emerged from our use of existing literatures on framing, professions, and occupations to analyze our ethnographic field notes.

A *frame* is an interpretive schema that enables individuals to organize and make sense of the complex stimuli of everyday life (Benford & Snow, 2000). The concept of framing originated in research on social movements. One of the basic insights of the framing literature was to develop the idea that movement actors, in addition to mobilizing resources, are also engaged with the work of "mobilizing meanings" (Benford & Snow, 2000). Individuals engage in framing to gain consensus around a shared understanding of some problematic situation. This consensus includes a *diagnostic frame*, shared understandings of the causes of a problematic situation, and a *prognostic frame* of the actions or changes that would address the situation (Benford & Snow, 2000). As activists who aim to advance frames that they believe will facilitate collective action, social movement actors are embroiled in the politics of meaning construction. More recent work adapts the concept of framing to emphasize that the politics of meaning making is important in shaping organizational change in corporations (Kaplan, 2008).

In hospitals, we find that an individual's professional role, combining their professional training and tasks and expectations associated with their specific job, shapes how they frame problems that inhibit efficiency, and frames solutions—changes that would improve efficiency. Professional roles affect frames by defining the work that individuals do, which shapes their job-specific goals and exposure to problems and information (Bechky, 2003; Golden, Dukerich, & Fabian, 2000). An individual's

membership in a professional group can also affect frames by defining her or his jurisdictional stake in stability or change. A profession's *jurisdiction* is its claim to authority or control over specific work tasks (Abbott, 1988). Jurisdictional authority is a major source of power in organizations, giving individuals a vested interest in encouraging changes that enhance their jurisdictional authority and opposing changes that challenge it. As a result, jurisdictional conflict, in which different professional groups vie for control over work tasks or organizational resources, is a major form of conflict that can influence individuals' frames of whether and how an organization should change (Abbott, 1988; Bechky, 2003). Jurisdictional power plays a critical role in determining what hospitals choose to change by empowering some groups with jurisdictional authority over certain tasks (e.g., physicians and their clinical tasks) with the ability to effectively block proposed changes relating to those tasks.

Proponents and opponents of specific changes used a combination of strategic and contested framing to advance their preferred changes and block changes they considered undesirable. *Strategic framing* involves framing processes that are deliberate and goal directed. Frame bridging, frame amplification, and frame extension are three strategic framing processes (Benford & Snow, 2000; Snow, Burke, Worden, & Benford, 1986). *Frame bridging* involves linking ideologically congruent, but structurally unconnected frames of an issue. It connects a proponent of some change with potential supporters with presumed common interests by clarifying problems, information, or potential solutions that might solidify their support. *Frame amplification* involves highlighting how a particular diagnostic or prognostic frame is consistent with values or beliefs that are presumed to be important to a potential supporter. *Frame extension* involves efforts to draw links between different interests and goals. An individual engages in frame extension when she or he frames a link between her or his main goal and goals that are incidental or secondary to her or him but important to potential supporters. *Contested framing* processes involve efforts to challenge the diagnostic or prognostic frames advanced by another actor. Strategic and contested framing can be combined in practice, as individuals craft frames that aim to both appeal to potential supporters and neutralize the effects of competing frames advanced by their opponents (Benford & Snow, 2000; Kaplan, 2008).

The dynamics of strategic and contested framing across professional roles determined what hospitals changed. While professional roles shape individuals' diagnostic and prognostic frames, and individuals attempted to build support for both their diagnostic and prognostic frames, we find that hospitals commit to changes if there is sufficient shared support for a prognostic frame of a change that would increase efficiency. Different actors within a hospital may identify the same prognostic frame as a solution to different perceived problems.

Method

Empirical Context

As part of its strategy to reduce surgical wait times ("wait time strategy"), Ontario's Ministry of Health and Long Term Care ("the Ministry") developed the perioperative

coaching program to help hospitals improve perioperative efficiency. Perioperative care includes the continuum of care before, during, and after surgery, including presurgical assessment, anesthetic and surgical care within the operating room (OR), and postsurgical recovery. Through the program, hospitals could request a visit by a coaching team that would help them identify problems that are potential causes of inefficiency. The team, of clinicians and administrators from other hospitals acting as consultants, would facilitate the development of plans to address hospital-identified problems. Coaching visits were designed to elicit the perspectives of diverse professional groups and to integrate these perspectives into a coordinated effort to increase efficiency. Each visit involved 1½ to 2 days of interviews and focus groups, followed by 1½ to 2 days of action planning, in which stakeholders in the perioperative program defined the steps that they will undertake to address problems and improve efficiency. Throughout this process, consultants acted as facilitators (Sherrard, Trypuc, & Hudson, 2009).

The coaching program is an ideal context to develop knowledge of how hospitals make choices about what to change in the effort to increase efficiency. It was designed to allow physicians and staff to identify changes that were best for their hospitals. While there were common issues across hospitals, there was also substantial variation in the specifics across hospitals. All hospitals committed to making changes that would increase efficiency, which were documented in a hospital's action plan, a document outlining specific change commitments, and identifying individuals who would be responsible for implementing the commitment.

While the financing and organization of Ontario's health care system is unique, insights from the perioperative coaching initiative are more broadly applicable. Ontario has a publicly funded single payer system, in which the Ministry, with the exception of a small workers' compensation program, is the sole purchaser of hospital and physician services. Hospitals in Ontario can be public or private and are largely independently incorporated and governed by independent boards of directors. Hospitals are responsible for managing costs, providing quality care, and doing so in a financially sustainable way. As in the United States, hospitals employ nurses, administrators, and allied health professionals and are responsible for managing the costs incurred in treating patients. Physicians work primarily in solo- or small-group practices, are not hospital employees, and are reimbursed on a fee-for-service basis.

Data

Our research draws on observation by the first author (the observer) of seven coaching team visits over a 6-month period. Our data include observation in a mix of hospitals that is representative of hospitals in the province, including one major academic center, four mid-sized community hospitals (two urban and two rural), and two small rural hospitals. Table 1 provides an overview of the seven research sites. The observer was able to use a laptop to type his field notes during most of his observation time, allowing him to gather rich field notes with direct quotations and close paraphrases of much of what was said. To preserve the confidentiality of participants in the initiative, we use pseudonyms for all seven hospitals in presenting our results.

Table 1. Summary of Research Sites.

Site pseudonym	Size	Location	Initiatives
Brew	Medium: 7,000 operations per year in 3 operating rooms	Rural community hospital	Nursing roles: Initiative to change nursing roles so they no longer pock instrumentation for surgical cases Anesthesia use: Failed initiative to change anesthesia use for cataract patients
Eagle	Small: <2,000 operations per year in two operating rooms	Rural community hospital	Nursing roles: Failed initiative to change nursing roles to eliminate clerical work RPN role: Initiative to introduce RPN role for days where the operating room runs two rooms Anesthesia use: Failed initiative to change anesthesia use for minor procedures because surgeon was uncomfortable working without anesthetists
Lake	Medium: 7,000 operations per year in one operating rooms	Rural community hospital	Anesthesia use: Failed initiative to change anesthesia use for cataract and scope patients
Mayberry	Small: <2,000 operations per year in one operating room.	Rural community hospital	Nursing roles: Initiative to change nursing roles so they no longer do menial tasks, such as making coffee/dusting/ordering supplies
River	Medium: 10,000 operations per year in 10 operating rooms on two sites	Urban community hospital	Nursing roles: Initiative to change nursing roles so they no longer manage supplies or pick instrumentation for surgical cases Anesthesia use: Initiative to change anesthesia use for minor procedures in order to facilitate patient flow through the post–anesthesia care unit
Royal	Large: 15,000 operations per year in seven operating rooms	Suburban teaching hospital	RPN role: Initiative to introduce RPN role and integrate it broadly into staffing model
Academic	Large: 24,000 operations per year in 27 operating rooms on three sites	Urban teaching hospital	Anesthesia use: Initiative to modify funding model for anesthesia in order to make new standards for anesthesia use for minor procedures sustainable

Note. RPN = registered practical nurse.

Analysis

We analyzed the field notes using a combination of narrative and comparative case analysis (Charmaz, 2006; Langley, 1999). Narrative analysis involves constructing a detailed, chronological story from original or raw data (Langley, 1999). Guided by our interest in how hospitals define and commit to specific changes, we broke down each visit into segments—representing each formal meeting or period of informal interaction between meetings—and summarized central themes in each segment. Given our interest in the content of change initiatives, of importance in these summaries were the issues raised, specific changes proposed, and framing strategies used to mobilize support or opposition.

We used the technique of following issues forward and back, over the course of a narrative summary, to develop insight into the process by which individuals framed specific problems, proposed solutions, and advocated for or contested proposed solutions over the course of the coaching visit (Langley, 1999). We used comparative case analysis, informed by earlier rounds of coding and analysis, to further develop a model of how hospitals commit to specific changes. Our comparative case analysis focuses on three specific changes, chosen using theoretical sampling (Charmaz, 2006): (a) reorganizing work to free nurses from lower-skilled tasks, (b) the use of anesthesia for minimally invasive procedures, and (c) the introduction of the registered practical nurse (RPN) role (nurses with a 2-year nursing diploma). We chose these specific changes for three reasons. First, they were important changes discussed across hospitals, ranging from two hospitals for the introduction of the RPN role to five hospitals for both freeing nurses from low-skilled tasks and changing the use of anesthesia for minor procedures. Second, the issues were associated with varying levels of framing conflict. Third, there were differences across the issues in the likelihood that a proposed change would result in a change commitment. Two authors independently coded each narrative summary to identify discussion of each of the three specific changes, constructing an issue narrative for each of the three proposed changes in every hospital in which it was discussed. We coded the narratives for evidence of distinct frames on the part of different professional roles for each of the three issues, the use of specific strategic or contested framing processes, and whether the proposed change resulted in a change commitment.

Results

We describe in detail how framing processes influenced change commitments by drawing on three examples. We explain how framing processes led to commitment to change how nursing jobs were designed in an effort to remove low-skilled tasks using Mayberry Hospital as an example. We draw on an example from Lake Hospital to show how framing processes blocked change related to the use of aesthesia in minimally invasive procedures. These two examples are useful to demonstrate framing processes when physicians do not have much at stake (nursing roles) and when physicians have quite a bit at stake (use of aesthesia). This is an important difference as it

allows us to draw out the role of a high-status actor. We draw on the additional example of the framing process around nursing roles at Eagle Hospital to show how the dynamics of framing, even around the same issue, can differ depending on the coalition built. Together these three sites illustrate our main findings—highlighting the roles of powerful actors and of coalitions—about framing processes. We include examples from the other sites to provide insight into the depth of our data and to offer further illustrations.

Impact of Professional Roles on Frames

Individuals' professional roles affected their frames of problems that inhibit efficiency and proposed changes that would improve efficiency. Table 2 presents the three examples described below in detail to illustrate how professional roles shape frames. For each example it presents the initial diagnostic and prognostic frames articulated by different professional groups and an account for why these frames are grounded in individual's professional roles. These initial frames demonstrate the differences in perspectives across roles that are rooted in the jurisdictional stakes in professional control (physicians and nurses), financial and operational responsibility (administrators), and in familiarity with different operational models (consultants).

Mayberry Hospital. The new OR manager at Mayberry Hospital, a small rural hospital, diagnostically framed the problem of efficiency in terms of nurses doing nonnursing tasks. She described current practices, where nurses clean scopes, order supplies, and perform other tasks that do not require nursing skills as inefficient. She framed her solution as follows:

> I would put a [sterile processing staff person] in to clean scopes. Not a nurse. You can turn things over a lot faster that way. . . . It would also be nice to have someone [other than a nurse] in every day to do cleanup.

The OR manager offered both a diagnostic frame—nurses doing nonnursing tasks such as cleaning scopes and ordering supplies—and a prognostic frame—transferring those tasks to another, nonnursing staff person. These frames were grounded in the work that she did as part of her professional role. As a manager directly in charge of staffing nursing care for the OR, she was exposed to the challenges of staffing the OR to accomplish tasks needed to maintain the functioning of the OR within a defined budget. The physicians seemed largely unaware of any negative side effects the nurses' diffuse responsibilities. This lack of understanding is not surprising given that the negative side-effects did not have direct implications for physicians.

The director of patient care at Mayberry articulated a related diagnostic frame about efficiency in the OR. In response to the CEO's statement that he would like to run the OR 5 days a week instead of 4 days a week, she framed a problem, commenting, "I'm worried that we are not using our days in the OR appropriately." She elaborated to offer a prognostic frame, asking, "Can we do more cases in the time we have? Even if

Table 2. Examples of Initial Frames by Professional Role.

	Physicians	Nurses	Administrators	Consultants
Mayberry: Removal of low-skilled tasks from nurses	None: Surgeons hold expectation that OR area and rooms will be prepped	Nurses explain that they start their shift at least 1 hour prior to the first surgery so that they can make coffee and dust	Nurses DUST!?!" (VP Finance)—Top management team horrified to learn about the nonmedical tasks that nurses do each day	"There is a need for process mapping on why the OR staff are coming in an hour early"
	Their professional role excludes consideration of such things	Nurses accept the role	Diagnosis: Current design of nursing roles is inappropriate	Prognosis: Need to current a rational case for the tasks that nurses are assigned
Lake: Use of anesthesia for minimally invasive procedures	Anesthesiologists argue the benefits of their presence in endoscopy, "It is beneficial to the patient, improves the flow in the unit, increases turnover, possibly the quality of endoscopy"	None: Nurses do not raise issue of anesthesia for minimally invasive procedures	"Anesthesia is running the show—some days we are down to a room [due to lack of anesthesia coverage] . . . but we have anesthesia in ENDO!"	The consultants raise questions about this practice and contrast it with practices in other hospitals, "Why is that? . . . Most hospitals do lists and lists of endo without anesthesia gracing the hall"
	Prognosis: Anesthesia for minimally invasive procedures benefits the patient and the OR unit	Their professional role excludes consideration of such things	Diagnosis: The needs and preferences of anesthesiologists take priority over the patient needs	Prognosis: The current arrangements do not reflect best practices
Eagle: Introduction of RPN	None: Surgeons assume that they will be supported by qualified staff	When administrators raise the possibility of hiring an RPN, an RN yells, "NOOO!" Another RN says, "I would like to see, before we consider an RPN role, that we attempt to book the days with causals (RNs). I would not want that (RPN) to be our first move"	"Can we use RPNs to do the drops . . . they can do vitals, drops, and preop checklists. That is what they do on the ward. If we cannot get an RN let's get an RPN . . . it would only be those tasks" (OR Manager)	A consultant advises that "Bringing in an RPN is best practice." The same consultant says to an RN who is against this idea, "You cannot block it. If you consult (with the professional regulations) it is within the scope of practice"
	Their professional role excludes consideration of such things	Diagnosis: RPNs should not be the first solution. RNs can be hired on a causal basis to help	Diagnosis: RPNs can be drawn on to do many of the tasks that RNs deem peripheral	Prognosis: The introduction of the RPN role is best practice and within regulatory norms

Note. RN = registered nurse; RPN = registered practical nurse; OR = operating room.

we could fit in one case a day [we would be able to increase our surgical volumes]." In contrast with the OR manager, her prognostic frame of fitting in an additional OR case a day was a solution to a problem stemming from a different issue—the CEO's proposal to add a day of OR time. She recounted, "The proposal looks great. I started to generate the resource requirements, and nowhere did it include nursing resources." She went on to elaborate that she did not have the nursing resources to support the ORs 5 days, and articulated instead a preference to "fit in that one more case [a day] without changing our business or hours, or adding overtime." While she made general statements that the OR time could be used more efficiently, she did not specifically mention the range of nonnursing tasks included in nurses' work. Nevertheless, her prognostic frame, fitting in an extra case, is consistent with the OR manager's prognostic frame. Her framing was similarly grounded in the work she does in her professional role. As a director, she was responsible for coordinating resources, including nursing resources for all of the clinical areas in the hospital. Because of her role, she was able to identify the limitations to the CEO's proposal to add an additional day of OR time. In addition, her role, which exposed her to operations within perioperative care, helped her form a general understanding that OR resources could be used more efficiently. As a more senior administrator, however, she had less direct exposure to the day-to-day work and specific tasks performed by nurses.

The coaches were vocal in framing the issue of nurses doing a range of nonnursing tasks as a problem. In a private conversation among the coaches, one relayed that she learned that the first nurse came in an hour before the first surgical case and that the nurses dust the ORs, make coffee, and do a range of other menial tasks. An OR manager herself, she was emphatic that this was a problem. Describing the fact that nurses make coffee, she noted, "I go crazy about that! It is not an uncommon thing for nurses to do." Through the conversation, the coaches described current nursing routines as clearly problematic (i.e., inefficient) for misusing skilled staff, and framed a solution, using process mapping to reorganize nursing tasks so that nursing hours can be used to expand the amount of staffed OR time, as a potential solution.

Lake Hospital. At Lake Hospital, the OR manager's diagnostic framing of the problem of anesthetists working on endoscopy (colloquially "endo") patients was also grounded in her professional role. Anesthetists in Canada play a similar role as in the United States and have comparable levels of jurisdictional authority. Endoscopy is a minimally invasive diagnostic procedure. While endoscopy can be done with unconscious sedation with an anesthetist, it can also be done without an anesthetist, using local anesthesia. The OR manager crafted a diagnostic frame of the anesthetists' preferences to work on endo patients as an example of self-interested behavior that contributed to a larger problem of inappropriate resource use: "Anesthesia is running the show—some days we are down to a room [due to lack of anesthesia coverage]—but we have anesthesia in ENDO!" She suggested that anesthetists wanted to work on endo patients because it was financially attractive, and referred to anesthesia coverage for cataract surgeries, which is also highly remunerative, noting, "They like the eyes [cataracts] of course. They have their hands in many pots." Ultimately, she emphasized that the

financial motivations of the anesthetists led to the misallocation (i.e., inefficiency) of anesthesia resources, and proposed reallocating anesthetists time toward surgeries that truly required anesthesia coverage.

The director of perioperative care had a similar diagnostic frame, and further elaborated on the consequences of anesthesia coverage for endoscopy, commenting:

> On medical staff issues, I believe anesthesia is the worst culprit now [in terms of focusing on personal financial interests]. . . . Anesthesia as a group worries me. They are the ones who insisted on being there for propofol [a drug for unconscious sedation in ENDO/cataracts]. Now [that they are staffing endoscopy] they say there are not enough anesthetists to cover other surgeries. I've had to double up on nurses.

Both the OR manager's and the director of perioperative care's diagnostic frames were grounded in their individual professional roles. As clinical administrators, each held some responsibility for ensuring that the hospital could accomplish the range and volume of surgeries needed to meet community needs and had a jurisdictional stake in influencing the allocation of resources to allow them to accomplish their work. In this hospital, the availability of anesthetists was one of the main constraints on surgical volumes. As a result, they framed anesthetists' unnecessary participation in minimally invasive surgeries as a resource issue that exacerbated the problem of inadequate anesthesia coverage for invasive surgeries. In the effort to gain influence over how anesthesia resources are allocated, they proposed performing minimally invasive surgeries without anesthetists, freeing them up to work on invasive surgeries, as a solution.

Use of Strategic and Contested Framing to Build Support for Proposed Change

Proponents of specific changes used a combination of strategic and contested framing to build support for their prognostic frames of what should be changed in order to improve efficiency. Strategic framing—bridging, alignment, and extension—allowed proponents to mobilize supporters, while contested framing allowed them to counter opposition.

Mayberry Hospital. Proponents of specific changes used frame bridging to build support for solutions that were broadly consistent with potential supporters' previously articulated frames. The coaches at Mayberry used frame bridging to gain the director of patient care's support for reorganizing work to free nurses of nonnursing task. They did so by connecting their prognostic frame, shared with the OR manager, with the director's congruent but more general frame that OR resources were not being used efficiently. The director articulated her frame, commenting:

> This whole utilizing the day effectively. I think we should look at the hours that we have. [If] you add one case a day for the ones you are [operating], that can add a lot for the year. . . . We should make sure the business we are doing daily is functioning as much as it can be. It is not.

In response, the coaches called attention to the range of nonnursing tasks performed by the hospital's nurses: "They come in, get the key, go make coffee, dust all the surfaces and lights." They used frame bridging, calling attention to menial tasks performed by nurses, in order to highlight that their prognostic frame—freeing nurses from nonnursing tasks—was consistent with the director's stated goal: "You could explore use of [sterile processing staff for] cleaning scopes instead of nursing. You could add to that floor cleaning, fetching patients, case picking. You would get rid of some very expensive cleaning and dusting!" Their efforts were effective. The director was clearly surprised that the nurses dust the ORs every morning, and began to advocate for hiring staff to take non-nursing tasks away from nurses.

Proponents of specific changes also used frame amplification to highlight the consistency between their prognostic frame and values that were important to their potential supporters. In a discussion of the proposed plan to use process mapping to find a way to free nurses from nonnursing tasks, one of the coaches linked this goal with widely held values, including professional satisfaction, efficiency, and patient welfare, asking,

> Is it worth it to look at system redesign? To look at flow and who is doing what, where, and when? What are you doing in the unit that doesn't need to be there? Is there an opportunity to reexamine the roles of the staff that you already have? Is the right person with the right skills doing the right task? It is both professionally satisfying and cost-effective. If we have RNs and RPN working in an area are we using them to the maximum for patient care?

Proponents used frame extension to gain support by linking their preferred solution with new problems that are of importance to potential supporters. In one example, the coaches at Mayberry attempted to solidify support, among a mixed group of nurses, managers, administrators, and physicians, for their solution of focusing nurses on nursing tasks by framing it as a solution to one of the top issues identified by a broad range of hospital staff—the desire to fully staff the day surgery unit. Currently, the day surgery unit was staffed on a limited number of days each week. These irregular staffing patterns created confusion about where patients should be admitted or recovered on a day to day basis. When the outgoing OR manager noted that they could only staff the day surgery unit 1 day a week because of budget limitations, a coach interjected that the issues were "all inter-linked," adding that changing roles so that nurses no longer checked supplies, and bringing in additional housekeeping support could free up nursing resources to staff the day surgery unit.

Finally, proponents used a combination of contested and strategic framing to neutralize opposition. At Mayberry, the chief of surgery initially contested the frame that OR resources could be used more efficiently, by claiming that they already were efficient. He started off the meeting by commenting, "We are doing reasonably well for a hospital compared with our peers." In response to a specific question of what could be done to increase efficiency he added, "I think the other surgeons agree that [figuring out] how to save time . . . that is done on an ongoing basis." One of the coaches contested the chief of surgery's diagnostic frame that they were already efficient. He first

noted that in most hospitals "surgeons all say they are 100 percent efficient with time," but then added, "I was in one hospital, the OR was open 8 to 1, but the nurses worked 7 to 3. Well, they use the five hours efficiently but what about the 3 others?" He further contested the chief of surgery's diagnostic frame by focusing attention on specific inefficiencies at Mayberry, noting, "I know here nurses are in an hour early. Why? In the big ORs at least they have 30 minutes lead time, not a full hour. That is a long lead time." He combined this contested framing with frame bridging, highlighting the range of nonnursing tasks currently performed by nurses, which could be redirected toward work that could expand the amount of operating time. This combined use of contested and strategic framing helped convince the chief of surgery, who responded,

> We're doing well overall. . . . Nurses work quick and hard. Perhaps if we can facilitate their tasks, and have them not do things that aren't necessary to be done . . . if you don't have to do something, save that and use it for OR time.

Through their use of strategic and contested framing, the coaches were able to build support among a coalition of organization members for their prognostic frame of reorganizing work to free nurses from nonnursing tasks. Through their use of frame bridging, amplification, and extension, they gained the support of the director of patient care, and the CEO. Through their use of contested and strategic framing processes, they also helped align the chief of surgery with their prognostic frames. Through their effort, hospital staff, managers, administrators, and physicians all agreed to make changes that would free up nursing time that could then be used to expand OR time or increase staffing in the day surgery unit. Table 3 presents two additional examples of strategic and contested framing activities.

Use of Contested Framing to Block Proposed Changes

In contrast to the coaches' effective use of strategic and contested framing to build support for a proposed change at Mayberry, at Lake, the chief of anesthesia used contested framing to block proposals to change the use of anesthesia for endoscopy or cataract patients.

Lake Hospital. Though the OR manager and director of perioperative care both privately framed problems relating to anesthesia coverage for endoscopy and cataracts to the coaches, neither publicly raised the issue directly to the hospital's anesthetists during the coaching team visit. The chief of anesthesia raised the issue in an interview with two of the coaches, by simply stating, "We went into endo full time." Implicitly, this conflicted with the administrators' concern that anesthesia coverage for endoscopy caused major resource problems for the organization. In response, one coach pushed him for an explanation, asking, "Why do that? Was it remunerative keep them [practicing in a rural community]? Is it an issue of safety? Most hospitals do lists and lists of endo without anesthesia gracing the hall." In response, the chief of anesthesia contested the coach's frame that they went into endoscopy for financial reasons, and

Table 3. Illustrations of Framing Dynamics.

Issue	Reorganizing work to remove low-skilled tasks from nursing role	Introduction of RPN role
Hospital	Eagle	Royal
Outcome	Potential change rejected	Potential change accepted
Initial frame proponents	*Nurses* complain about extra, nonnursing work, "There is some stuff that we have to do that can be taken away. . . . There are cheaper ways of picking up some slack, (such as) a ward clerk and housekeeping"	*Coach* engages in *frame bridging* arguing that the continuation of nursing shortages means that "in 20 years there will be RPNs [doing higher-skilled work] under the supervision of RNs." Here the coach suggests that adopting this *prognosis* puts the hospital ahead of best practices
	The *OR Manager* requests extra non-nursing staff, "If we had extra housekeeping staff or a porter who could do nonnursing duties that would help"	The *RNs* are not surprised that the possibility of using RPNs has been raised, "Everyone is aware it was done in other hospitals and not a huge shock." They do not voice concern about the possibility of this change
Initial frame target	The *CEO* rejects these arguments, "We always get requests more, more, more. If nurses are doing some of the things that a clerk can do, then should we then reduce nursing staff"	The *Nursing Manager* opposes changes that involve hiring RPNs, "We are an all RN staff and I would like to stay that way. . . . I have seen good RPNs but I have also seen RNs losing their skills because they are doing one hip (procedure) a month"
Strategic framing	A *consultant* engages in *frame extension*, arguing, "Nurses are the most the valuable resource you have. If you have enough now, you will not have enough in a year from now. . . . It could get to be an issue. If you are spending money on overtime for nurses why not throw in a clerk so you do not have to (spend money on overtime)"	*Consultant* engages in *frame amplification*, trying to show how the RPN role might be consistent with the goals of the RNs, "We don't want to eliminate the RN in scrubs role. . . . You don't want to lose the knowledge of the RNs so we would be talking about maybe 25% RPNs. . . . Hiring RPNS rather than RNs may give you funding to hire a dedicated materials manager."
Contested framing	The *CEO* refuses to entertain these arguments explaining, "Sometimes we have to look compared to our peers, how we are doing and generally OR is doing very well"	The *Nursing Manager does not contest* this prognosis. She admits that she has seen some RPNs become RNs and then says, "It can work but if we go this route or not now is the time to think about it"
	The CEO *rejects the the consultant's diagnosis* that having RNs doing low-level tasks wastes a valuable resource (nurses) and overlooks a cheaper way of doing the work. He insists there is no problem because they are doing well compared with peer organizations	

Note. RN = registered nurse; RPN = registered practical nurse; OR = operating room.

his implicit frame that anesthesia coverage for endoscopy was unnecessary. Instead, he insisted that anesthesia coverage for endoscopy is "beneficial to the patient by improving the flow on the unit, increasing turnover, and possibly the quality of endo." His response combined contested framing with frame amplification, appealing to the widely embraced values of efficiency and clinical quality.

The chief of anesthesia similarly used contested framing in response to a later attempt by one of the coaches to propose a shift away from anesthesia coverage for cataracts. In the context of a discussion of best practices for anesthesia care, one of the coaches focused specific attention on the use of anesthesia for cataracts at Lake and started to express a prognostic frame of shifting away from coverage by anesthetists, noting, "For example with cataracts. Many hospitals have nurses administer [anesthesia for patients] and have the anesthetist oversee [care delivered by nurses] I'm not sure if any there has been any talk."

At that point, the chief of anesthesia interrupted her and contested her prognostic frame, interjecting, "Optho[mology] seem happy to have us in the OR." He went on to challenge the value of the solution proposed by the coach, noting, "I find I change what I do for specific patients. I know a lot of centers do a standard thing for patients," and recounting problems they had with anesthesia care for cataract patients because of the elderly patient population that they dealt with. In the end, he reaffirmed, "I think our group feels happy to stay involved in cataracts."

In both exchanges, the chief of anesthesia contested the diagnostic frames that anesthesia coverage for endoscopy and cataracts were unnecessary, claiming that it increased both quality and efficiency, and that ophthalmologists preferred anesthesia coverage for cataracts. In dismissively referring to facilities that did "a standard thing" for patients, and insisting that he varied what he did, he also contested the coaches' prognostic frame of moving toward anesthesia care delivered by nurses as a solution that was inconsistent with the value of delivering care that is tailored to meet the needs of individual patients. Given his diagnostic frame, that anesthesia coverage for endoscopy and cataracts was beneficial for the quality and efficiency of care, his prognostic frame involved continuing with existing anesthesia routines.

In contrast with the change in nursing roles at Mayberry, the coaches and administrators were not able to gain a commitment to desired changes in anesthesia coverage at Lake. The hospital was not able to make changes in anesthesia coverage for cataracts and scopes both because the chief of anesthesia specifically contested the prognostic frame advanced by change proponents—a shift toward using nurses to deliver anesthesia care with some oversight by anesthetists—and because he had the power to unilaterally block the change. As physicians, anesthetists have exclusive authority to make judgments about the anesthesia needs of specific patients. This authority extends to making decisions about the type of anesthesia that a patient may need, as well as the types of patients who may need care by an anesthetist. Because of this authority, his contestation of the administrators' and coaches' prognostic frames was effective.

Eagle Hospital. In other cases, the use of contested framing to block proposed changes was not effective. At Eagle, administrators and coaches proposed hiring an RPN—a

nurse with a 2-year associates degree with a more limited scope of practice than a registered nurse—as a solution to staffing challenges in the OR. They gained the support of the chief of staff, but frontline nurses were strongly opposed to the idea of introducing an RPN role, despite strategic framing efforts by the OR manager, chief of staff, and coaches. Frontline nurses contested the OR managers' prognostic frame as a threat to patient care. The frontline nurses, however, did not have the power to block the proposed change. Unlike anesthetists, who have exclusive authority to make judgments about patient's medical needs, nurses lack the authority to make judgments about whether an RN or RPN was needed to perform specific nursing tasks. As a result, the OR manager, with the support of the chief of staff and senior administrators, was able to gain a commitment to introduce an RPN role despite the contested framing by frontline nurses. The nurses may have been able to prevent such a change by developing coalitions with administrators as illustrated in Table 2.

Framing, Coalition Building, and the Content of Change

The dynamics of strategic and contested framing over the course of a coaching visit helped determine the coalitions of organization members in support of, or opposition to, specific proposed changes. At Mayberry, the incoming OR manager and coaches initially framed nurses doing non-nursing tasks as a resource allocation problem and framed the solution of hiring additional staff to take on lower skilled tasks from nurses, a frame that was shared with the coaches. The coaches, through their use of strategic and contested framing, were able to alter the initial frames of both the director of patient care and the chief of surgery in order to gain their support for the coaches' prognostic frame—reorganizing work roles. This coalition was sufficient to gain an organizational commitment to change. In contrast, at Lake, the OR manager, director of perioperative care, and coaches all similarly framed the problem of anesthesia coverage for cataracts and scopes as a resource allocation problem that prevented the hospital from effectively meeting community health needs. The chief of anesthesia did not diverge from his initial frame that anesthesia coverage for cataracts and scopes was beneficial for both clinical quality and efficiency and vocally contested the prognostic frame of moving toward local anesthesia delivered by surgeons and nurses. A coalition of administrators, without the support of the chief of anesthesia, was not sufficient to gain a commitment to change. Finally, at Eagle, the OR manager and coaches were able to use strategic framing to gain the support of the chief of staff for introducing an RPN role. Their strategic framing efforts to gain the support of front line nurses, however, were unsuccessful. Nevertheless, a coalition that included the OR manager, senior administrators, and the chief of staff was sufficient to gain a change commitment.

Table 3 presents two additional examples, drawn from our comparative case analysis, of how the dynamics of strategic and contested framing shaped the coalition of actors in support of or opposition to a proposed change. These two examples provide further examples of frame bridging, amplification, and extension. For each example—one illustrating a commitment to a change and another illustrating the rejection of a

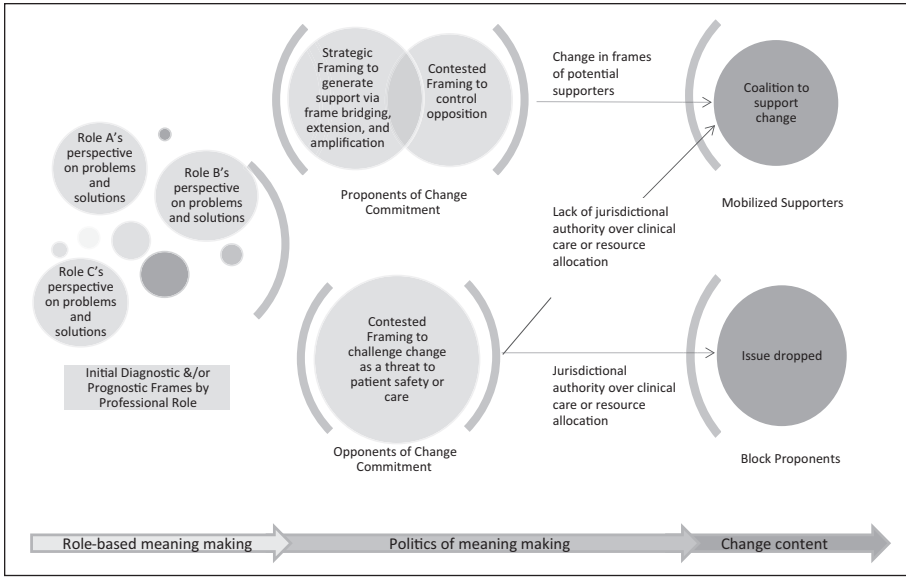

Figure 1. Process model of hospital change commitments.

possible change—it depicts the initial frame of the primary change proponent and the initial frames of the primary targets—the individuals or groups whose support the primary change proponent tried to enlist. It briefly describes the strategic and contested frames used both by proponents and opponents and the coalitions of actors in support of or opposition to the proposed change. Together, the examples in the text and tables show that the *content* of organizational change efforts aimed at increasing hospital efficiency is an outcome of the dynamics of framing and coalition building across professional roles. Hospitals commit to changes when a proponent is able to successfully use strategic and contested framing to build a coalition that shares a prognostic frame *and* convince those with formal authority to adopt their frames. In contrast, they do not commit to changes where those with formal authority persist in contesting a prognostic frame.

Discussion

Our analysis shows that hospital physicians' and staff's frames—involving subjective understandings of problems and solutions—were critical to determining what hospitals change in the effort to increase efficiency. Figure 1 presents a process model explaining how framing processes shape the content of change initiatives that aim to increase efficiency. It depicts role-based meaning making in hospitals, in which individuals' professional roles, including the work that they do and their jurisdictional stake in changes that would enhance or diminish their authority, influenced the

problems that they identified and the solutions that they proposed. This role-based meaning-making helps define the politics of meaning-making. Depending on their roles, individuals can come to act as proponents or opponents of specific change commitments. Proponents draw on strategic and contested framing to influence the frames of potential supporters. Strategic framing, including frame bridging, extension, and amplification, aims mobilizing support, while contested framing aims to control opposition. Opponents of change commitments use contested framing to challenge proposed changes as a threat to patient safety, quality, or efficiency. How the politics of meaning-making plays out ultimately determined the content of a hospital's change commitments. If a proponent's strategic and contested framing practices were successful in mobilizing a coalition of supporters, their proposed change would be adopted as a potential change commitment. The effect of contested framing by a change opponent is contingent on their jurisdictional authority and the specific issue at hand. If an opponent has jurisdictional authority over clinical or resource allocation decisions needed to put a change into effect, they can effectively block a proposed change. However, if an opponent lacks jurisdictional authority over clinical or resource allocation decisions, and change proponents are able to gain the support of individuals who do have this authority, then their opposition will be ineffective in preventing a change commitment.

Empirically, we observed that it is more difficult to make changes where physicians framed patient safety and clinical quality as endangered by efficacy. Physicians engaged in contested framing when changes challenged their jurisdictional authority. In framing their opposition in terms of safety and quality, physicians defended their jurisdictional authority in language that was normatively appropriate in the hospital setting. These claims were not adjudicated using data to assess whether proposed changes actually threatened safety or quality. Rather, physicians were deferred to as experts in patient safety and clinical quality. Physicians' contested framing was effective because patient safety and clinical quality override efficiency claims for medical and other health professionals.

The effectiveness of physician's contested framing practices is underscored by the failure to change anesthesia coverage for cataracts and scopes at River, discussed above. Looking across our cases, in three of the five hospitals where proposals to change anesthesia coverage for minor procedures were discussed, anesthetists' opposition blocked proposed changes to anesthesia coverage. In two hospitals, there remained a possibility for future changes in anesthesia coverage. There were no hospitals where a proposal to modify anesthesia use resulted in a clear change commitment outlined in the action plan.

One exception in our comparative case analysis of anesthesia care for minimally invasive procedures—an agreement to further examine how anesthesia coverage should be allocated at River hospital—underscores our finding that subjective frames, rather than objective jurisdictional interests, were critical in shaping the content of change. At River, the chief of anesthesia framed proposed changes to anesthesia coverage as potentially beneficial to quality. As a physician-researcher, he was a believer in providing evidence-based care and was not fully aware of the variations in anesthesia

practice in the hospital. Perhaps because of his general belief in evidence-based care, he was open to collecting more information about whether anesthesia care in his group was appropriate and to enforcing new standards of care if necessary. His framing of the proposed change as potentially enhancing quality, rather than as a threat to quality, safety, or anesthetists' jurisdictional interests, created a possibility for future changes in anesthesia coverage.

In addition to physicians, senior administrators could draw on their jurisdictional authority over resource allocation to block proposed changes. Whether senior administrators support or block a change depends on how they frame its cost effectiveness. For example, when confronted with evidence that nurses were doing menial tasks, CEO's in most cases framed this as a resource allocation problem. At Eagle, the CEO doubted the cost-effectiveness of hiring additional staff to take on menial tasks performed by nurses. In the end, the OR manager's and coaches' strategic framing efforts were unsuccessful in altering his frame, and he withheld resources for hiring additional nonnursing staff. This example highlights that frames are influenced, but not determined, by professional roles. In addition, it suggests that senior administrators' subjective frame of the cost effectiveness of a proposed change, rather than objective data, will determine whether a proposed change is adopted.

One strength of our use of ethnographic analysis of an initiative to improve efficiency is that it allows us to develop a rich understanding of the process by which hospitals make choices about what to change in the effort to increase efficiency. This strength, however, inevitably involves certain limitations. Because we focus on ethnographic analysis of a specific initiative to increase efficiency, there may be limitations to the generalizability of our findings. As a result, we intend the framework above to serve as guides for future work that might examine the generalizability of our findings to other hospital efficiency initiatives. In addition, the richness of our data inevitably forced us to focus on a narrow slice of what we observed. Other themes, evident in our data, may yield additional insight into how hospitals increase efficiency.

Conclusions

This article demonstrates how subjective understandings influence hospital efficiency efforts. Prior studies, to our knowledge, have not taken into account how frames shape individuals' subjective understandings of practices, generating support for or neutralizing opposition against particular changes. In examining the role of frames in efficiency efforts, we emphasize how professional roles influence subjective understandings of change proposals and how the dynamics of strategic and contested framing defines the content of change initiatives that aim to increase hospital efficiency. We further show variation in whether individuals occupying equivalent roles support similar changes and variation in whether similar strategic framing processes are effective in mobilizing needed support. One implication of this variation is that more work is needed to better understand how general characteristics that enhance the effectiveness of efficiency initiatives in hospitals might come to bear on specific choices about the content of change. Prior research has shown that physician support,

top management team leadership, organizational culture, and frontline engagement all play a role in enhancing the effectiveness of hospital change efforts (Bradley et al., 2001; Ferlie & Shortell, 2001; Shortell et al., 1995). Depending on how individuals frame problems and solutions, each of these may have more complex effects on a hospital's ability to implement specific changes to increase efficiency.

For example, researchers have shown that physician engagement or support is critical in shaping the outcomes of hospital organizational change initiatives aimed at increasing efficiency, value, or quality (Bradley et al., 2001; Ferlie & Shortell, 2001; Shortell et al., 1995; Weiner et al., 1997). While physician engagement may make it more likely that initiatives to improve efficiency succeed, it can have mixed effects on the content of change. On one hand, physician support could mean that physicians devote the time and attention to identify and help implement changes that could improve efficiency (Weiner et al., 1997). On the other hand, engaged physicians may still fear the loss of their autonomy and negatively frame changes that challenge their jurisdictional interests (Abbott, 1988; Shortell, 2004). As a result, more engaged physicians may be more aware of potential changes that would threaten their autonomy or more able to propose alternative changes that would be less threatening. Future work could potentially examine physicians' preferences for or perceptions of a broad range of efficiency-enhancing changes to develop more robust knowledge of physicians' preferences regarding change content and of the performance impacts of changes preferred or opposed by physicians.

A large body of research shows that senior management support for organizational change initiatives will enhance their success (Bradley et al., 2001; Ferlie & Shortell, 2001; Weiner et al., 1997). Nevertheless, senior managers' frames can have a profound effect on the content of change—whether or not they have the knowledge or awareness needed to make judgments about how best to increase efficiency while maintaining quality. Future work can also develop more robust knowledge of senior managers' preferences regarding change content, and of the performance impacts of their preferred changes.

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