

# Implementing complex innovations: Factors influencing middle manager support

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**Background:** Middle manager resistance is often described as a major challenge for upper-level administrators seeking to implement complex innovations such as evidence-based protocols or new skills training. However, factors influencing middle manager support for innovation implementation are currently understudied in the U.S. health care literature.

**Purpose:** This article examined the factors that influence middle managers' support for and participation in the implementation of work-based learning, a complex innovation adopted by health care organizations to improve the jobs, educational pathways, skills, and/or credentials of their frontline workers.

**Methods:** We conducted semistructured interviews and focus groups with 92 middle managers in 17 health care organizations. Questions focused on understanding middle managers' support for work-based learning as a complex innovation, facilitators and barriers to the implementation process, and the systems changes needed to support the implementation of this innovation.

**Findings:** Factors that emerged as influential to middle manager support were similar to those found in broader models of innovation implementation within the health care literature. However, our findings extend previous research by developing an understanding about how middle managers perceived these constructs and by identifying specific strategies for how to influence middle manager support for the innovation implementation process. These findings were generally consistent across different types of health care organizations.

**Practice Implications:** Study findings suggest that middle manager support was highest when managers felt the innovation fit their workplace needs and priorities and when they had more discretion and control over how it was implemented. Leaders seeking to implement innovations should consider the interplay between middle managers' control and discretion, their narrow focus on the performance of their own departments or units, and the dedication of staff and other resources for empowering their managers to implement these complex innovations.

**Key words:** complex innovations, health care organizations, middle managers

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Over the past 30 years, health care organizations have increasingly begun to adopt complex innovations, defined as novel sets of behaviors, routines, or other work processes that require coordinated use by multiple organizational members (e.g., Helfrich, Weiner, McKinney, & Minasian, 2007). These innovations are typically adopted for the purpose of improving health outcomes, administrative efficiency, cost-effectiveness, or other aspects of organizational performance and have been described as accounting for some of the most dramatic improvements in health outcomes in the developed world (Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004; Halbesleben & Rathert, 2008). These innovations are also often perceived as important opportunities for organizations to obtain strategic advantage in a turbulent and competitive environment (Rye & Kimberly, 2007): Prior research has found that science- and practice-based innovations positively impact hospital clinical performance (Salge & Vera, 2009), whereas technological innovations such as electronic medical records can result in significant improvements in health care efficiency and safety (e.g., Hillestad et al., 2005).

Successful implementation is critical to the effectiveness and sustainability of these innovations (Weiner, Lewis, & Linnan, 2009). However, organizations often find the implementation process to be challenging, time-consuming, and costly (Helfrich et al., 2007; Shortell, Bennett, & Byck, 1998). Consequently, scholars and health sector leaders have become increasingly interested in learning more about factors that influence the implementation process (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Fleuren, Wiefferink, & Paulussen, 2004). In particular, there has been increasing awareness of the role that managers can play in either enhancing or undermining health care organizations' ability to implement change and improve organizational performance (Wooldridge & Floyd, 1990). For example, managerial support has been shown to facilitate or enhance the implementation process (Caldwell, Chatman, O'Reilly, Ormiston, & Lapid, 2008). On the other hand, managers who do not support an innovation may delay implementation or even sabotage the success of new efforts (Guth & MacMillan, 1986).

Although previous research has established the importance of managerial support in the implementation of complex innovations (e.g., Weiner et al., 2009), it has not focused on the factors that promote or hinder these managers' support for complex innovations and the implementation process. In addition, operational definitions of management support within the implementation literature have focused largely on executive leadership rather than on middle managers. Within health care, middle managers such as nurse managers or other frontline supervisors are often the leaders tasked with implementing critical changes in organizations' practices (Currie & Procter, 2005). Therefore, there is a need to understand

their behaviors and the factors that influence their support. Such factors are currently understudied in the health care literature, particularly in the U.S. health care system. The little existing research on middle managers' involvement in organizational change processes, almost all of which has occurred either in the UK or in Canada, suggests that middle managers are strongly influenced by factors within their organizational context, such as organizational culture and climate, access to information, and resource availability (Carney, 2006; Gilbert, Laschinger, & Leiter, 2010; Patrick & Laschinger, 2006).

The purpose of this study was to better understand the organizational and relational factors that influence middle managers' support for the innovation implementation process. To achieve this goal, we describe an organizational framework commonly utilized to explain the determinants of effective innovation implementation in the U.S. health care sector. We then adapt and extend this framework to explain middle manager support for a complex innovation, work-based learning (WBL), that was voluntarily adopted and implemented by a variety of U.S. health care organizations, including acute care hospitals, behavioral health centers, community health centers, and long-term care facilities.

## Conceptual Framework

The implementation process occurs after the decision to adopt an innovation has been made but before the innovation has been successfully routinized or sustained as an organizational practice (Greenhalgh et al., 2004). This process is characterized by considerable ambiguity and, as such, is often nonlinear, challenging, and time-consuming for organizations (Van de Ven, Polley, Garud, & Venkataraman, 1999). Existing research on the determinants of effective innovation implementation in health care is based primarily on an organizational framework that was developed to examine innovations where (a) organizational members cannot adopt the innovation until the primary adoption decision has occurred at a higher level of authority and (b) the innovation is complex, meaning the implementation process requires systematic organizational changes in structure, staffing, workflows, and/or policies, as well as coordinated innovation use by multiple organizational members (Holahan, Aronson, Jurkat, & Schoorman, 2004; Weiner et al., 2009).

Although initially developed to explain the implementation of technological innovations in the manufacturing sector (Klein & Sorra, 1996), this framework has since been adapted by researchers to the U.S. health care sector, where it has been used to explain the implementation of a variety of health care innovations, including worksite health promotion programs, cancer prevention and control research efforts, and mandated diabetes management registries (e.g., Helfrich et al., 2007; Weiner,

Helfrich, Savitz, & Swiger, 2007; Weiner et al., 2009). Although slight variations exist, the major factors within this framework consistently identified by health care researchers as critical to implementation success include management support, financial resource availability, implementation policies and procedures, innovation-values fit (the extent to which employees perceive that innovation use will foster the fulfillment of their values), and implementation climate (employees' perception of the extent to which use of the innovation is supported and expected).

### WBL as a Complex Innovation

The complex innovation examined within this study, work-based learning (WBL), is a recent type of educational program adopted by health care organizations to improve the skills and/or credentials of their frontline workers. Work-based learning programs require health care organizations to work with a partnering educational institution to develop new methods of education and training for workers that capture, document, formalize, and reward learning on the job (Raelin, 1997). Unlike on-the-job training and other work-based educational programs, WBL programs utilize employer work processes as a primary learning source and focus on experiential and contextual knowledge arising from reflectivity on practice (Manley, Titchen, & Hardy, 2009; Marsick & Watkins, 1997). When successfully implemented, WBL programs can yield multiple benefits for participating organizations: First, the close partnership of employers and educational institutions can result in a better alignment of academic curricula and practical workplace needs (Bryans & Smith, 2000). Second, WBL requires employers to identify and document standardized clinical competencies that they would like their frontline workers to attain if they are to advance in the workplace. This systematic approach to training can result in better trained and more satisfied workers (Brown, Harte, & Warnes, 2007), which in turn can improve overall quality of care (e.g., Sheridan, White, & Fairchild, 1992; Weisman & Nathanson, 1985). For example, Kubiak, Rogers, and Turner (2007) examined a cohort of support workers in health and social care settings and found that WBL allowed workers to develop a deeper, more critical understanding of their practice, their service users, and the system they worked in. Chapman (2006) found that community nurse completion of WBL modules improved quality of care through increased health promotion, increased patient access to services, increased patient choice, and reduced risk of infection.

Although it has the potential to yield substantial benefits, WBL is a complex innovation because the implementation process requires significant investment in systems change on the part of all participating employers (Spouse, 2001; Williams, 2010). For example, facilitating WBL may require employers to alter their human resource

(HR) policy infrastructures and current work processes (Clarke, 2006). Implementation of WBL may also require substantial change in work practices at the level of the middle managers, who can be asked to do one or more of the following: accommodate and schedule educational release time for participating frontline workers, identify and elaborate appropriate skill competencies for frontline workers to learn, either directly mentor or select mentors to train participating frontline workers, and/or evaluate frontline workers' performance on these competencies in the workplace.

However, like many other complex innovations, WBL also has "fuzzy" boundaries, meaning that the systems changes required for its implementation are not well defined and subject to interpretation by the innovation adopters (Greenhalgh et al., 2004). Employers can determine the extent to which they are willing to adapt organizational structures and systems to implement the innovation. They may also provide middle managers with some discretion and control over the extent to which middle managers must alter their work practices to accommodate the innovation. This ambiguity makes the implementation process open to a significant amount of reinvention and, therefore, nonlinear.

### Methods

Data were drawn from focus groups and semistructured interviews with middle managers conducted as part of the evaluation of nine workforce development projects funded by the Robert Wood Johnson Foundation in collaboration with the Hitachi Foundation and the U.S. Department of Labor in the first round of the "Jobs to Careers: Transforming the Front Lines of Health Care" (J2C) national program. The J2C program supported partnerships of health care employers, educational institutions, and other community-based organizations to expand and redesign systems to create lasting improvements in the training and advancement of frontline workers in health care by testing new, work-based models of education and training. These work-based models met the requirements for application of our conceptual framework in that (a) health care organizations participated in the J2C program only if upper management expressed willingness to adopt and implement a new, WBL program and (b) the program was complex, as implementation required participating health care organizations to make systemic organizational changes in their structures, staffing, workflows, and/or policies. Consistent with previous research suggesting that health care leaders view staffing as a key determinant of health care outcomes (Alexander, Hearn, Jiang, & Fraser, 2007), upper management indicated that their primary motivation for adopting this complex innovation was to improve the quality of care by enhancing the skill set and performance of their frontline staff and increasing the recruitment and retention of qualified frontline staff (Morgan, Dill, Chuang, Farrar, &

Konrad, 2009). Although each innovation was tailored to the specific workforce needs of the participating employers, all projects focused on the implementation of WBL.

### Sample and Interview Process

Our sample was composed of 14 focus groups and 29 semi-structured interviews conducted with 92 middle managers in 17 health care organizations across the United States. Basic descriptive characteristics of these health care organizations and middle managers were collected using survey methods and are summarized in Tables 1 and 2. As suggested by the range of educational backgrounds shown in Table 2, the middle managers within our sample were quite diverse: Our focus groups and individual interviews included frontline supervisors in long-term care facilities, clinical supervisors in behavioral health centers, office managers in community health centers, and both frontline supervisors and nurse managers in acute care hospitals. However, excepting only one acute care hospital whose WBL program included the training of environmental services staff as certified nursing assistants, all of these middle managers occupied either direct care or clinical positions. In the exception case, we conducted a focus group that included frontline supervisors in direct care positions as well as those from the environmental services department. Supervisors from the latter group had a limited role in the program and were involved only in scheduling release time for participants; however, their responses did not differ significantly from those of other middle managers within the focus group and were therefore reported in aggregate.

All of the semistructured interviews and focus groups were arranged and conducted by members of the J2C

**Table 1**

### Descriptive characteristics of the health care organizations in the study (N = 17)

	<i>n</i>
Type of health care organization	
Behavioral health center	4
Community health center	2
Hospital or health care system	6
Long-term care facility	5
Census region	
Northeast	4
South	5
West	8
Ownership	
Public	1
Nonprofit	12
For-profit	4
System affiliated	15
County poverty level >15%	11

**Table 2**

### Descriptive characteristics of the middle managers in the study (N = 92)

Average age	45 years
Gender: male (%)	20
Education (%)	
High school graduate	8
Associate's degree, certificate, or industry credential	27
Bachelor's degree	30
Graduate or professional degree	35
Race (%)	
White	57
African American	7
American Indian or Alaska native	12
Asian American, Asian Indian, or other Pacific Islander	11
Other race (includes multiple races)	13
Ethnicity: Hispanic (%)	12
Directly supervises frontline workers (%)	86
Directly trains frontline workers (%)	69

evaluation team. Semistructured interviews were conducted either in person or by telephone and lasted between 30 and 45 minutes. Focus groups were conducted by teams of two people (one facilitator and one note taker) and lasted approximately 60 minutes. To promote open disclosure, confidentiality of participants was assured through a signed informed consent process. Interviews and focus groups were then recorded with the interviewees' permission, transcribed verbatim, and subsequently imported into NVivo 8.0 for analysis.

The overall purpose of the interviews and focus groups centered on understanding (a) the organization, work, and interpersonal context within which WBL was taking place; (b) the particular characteristics and goals of the innovation; (c) the facilitators and barriers to the implementation process; and (d) the systems changes needed to support the implementation of WBL for frontline workers. To fully capture the implementation process, these data were collected over a 3-year implementation period (January 2007–December 2009).

### Analysis

Our analysis focused on three groups of questions from the focus groups and interviews: whether middle managers supported the adoption and implementation of the innovation, the reasons why they did or did not support it, and finally, changes in the implementation process that would influence their support for the program.

Middle managers' responses to these questions were segmented into nonoverlapping text units of the fewest transcribed lines that retained coherent meaning and

assigned to codes (Bernard, 2000). An initial coding scheme was developed based on the five factors within the previously described conceptual framework (i.e., management support, financial resource availability, implementation policies and procedures, innovation–values fit, and implementation climate) and subsequently refined and expanded to accommodate emergent codes (Miles & Huberman, 1994). All transcripts were independently coded by two authors. All emerging codes and any coding discrepancies were discussed by the study team until consensus was achieved on best coding. Two of the authors extracted the themes and principal points of the text segments related to each of the final analytic codes. A third member of the research team then further reviewed and distilled this information to key points, which were then verified by the other authors.

## Findings

We found that middle managers' support for the implementation of WBL was primarily a function of the innovation–values fit, that is, the perceived fit between the innovation and middle managers' workplace needs and priorities. In the following section, we describe how middle managers' perceptions of the innovation–values fit influenced their support for the innovation. We also describe a number of factors that influenced their perceptions of this fit, including implementation policies and practice, resource availability, upper management support, organizational culture and climate, and contextual and structural characteristics of the organization.

### Innovation–Values Fit

The middle managers within this study, the majority of whom are clinical providers, were very focused on performance within their units. Regardless of the organization's stated reasons for adopting and implementing the innovation, middle managers described their individual support for the frontline workforce development program in relation to its perceived impact on their specific workplace needs and priorities. Very few middle managers were inclined to prioritize the benefit for the entire organization or for the workers themselves as motivation for supporting the implementation. Unless they were heavily involved in the administration of the innovation or located in a "teaching" department (e.g., nursing education), their view was likely to be narrowly focused on their own department or unit's needs.

The majority of middle managers who supported the program felt that the skills that their frontline workers learned would positively impact teamwork and quality of care within their units. Others felt that the career development component of the program would reduce turnover

rates and subsequently increase frontline workers' job satisfaction and motivation to perform well. As one department manager put it,

I see a huge need to raise the bar on entry-level staff... I don't think we can continue to say that any of the jobs in health care are on-the-job training, high school degree only. So for me, this was a perfect opportunity to raise the bar on a number of people, make them more functional in the positions that they're in, which in turn improves the health care.

In contrast, middle managers who opposed the program did so because they felt that the program would negatively influence their unit's performance. Under those circumstances, middle managers opposed the program even if they felt that that it would benefit the organization overall. As with most complex innovations, the implementation process required a significant time investment on the part of staff and particularly from the middle managers responsible for scheduling and/or training the frontline staff participating in the program. Middle managers who voiced the most complaints about the program were typically those who were asked to participate in the implementation process but would not reap the benefits. For example, in one hospital, most of the frontline workers who participated in the program were promoted into different departments. Middle managers within this organization said that although they understood the organization's reasons for adopting the program, the program did not provide middle managers from the home departments with sufficient incentive to support the program.

### Implementation Policies and Practices

Specific implementation policies and practices that helped improve the perceived innovation–values fit and subsequent middle manager support for the program included (a) communicating early and often with managers to solicit their input in the implementation process, (b) maximizing middle manager's discretion, and (c) assigning a designated staff member to coordinate or otherwise facilitate the program.

**Communicate early and solicit middle manager input.** Middle managers reported that their buy-in to the program increased when they were informed about the innovation early and when their input was solicited in the implementation process. According to one middle manager within a large health care system,

This network has spent a lot of time and money on [implementing new programs] over the last 10 years.... The only time we have problems is when initiatives come from someone else, and they suddenly involve our department.

Almost all of the middle managers said that they wanted to be notified as early as possible that their organization had made the decision to adopt a complex innovation. Managers from clinical departments in particular indicated that the implementation process put a strain on their unit and that both early and ongoing communication was important in ensuring their continued buy-in to the program. Soliciting feedback early can help assuage middle managers' concerns, and ongoing communication increases the likelihood that the program will be sustained in the long-term. In contrast, lack of communication was described by middle managers as contributing to uneven buy-in and implementation and described as a reason why certain programs did not achieve all of the desired outcomes.

**Increase middle manager discretion in the implementation process.** Regardless of whether their participation was voluntary or mandatory, middle managers indicated that they tended to be more supportive of the program when given greater flexibility in the implementation process. Although cognizant of the need to maintain program fidelity, middle managers appreciated being able to tailor the implementation process to what worked best for their particular units. One middle manager noted,

Originally I was skeptical [about the program] because I know asking people to come in on their days off is a real hit or miss proposition.... Then I realized I have some power over when we schedule these things. So, we started adjusting schedules so that we always trained people during the hours that they were there to work anyway. And that really made a lot of sense...kind of turned things around...

Allowing middle managers, particularly those most heavily involved in the implementation process, discretion in how and when those activities would be carried out was critical for increasing their support for the program.

**Designate staff to coordinate and/or facilitate the program.** Even the most supportive middle managers noted that they were balancing a large number of other obligations and that they occasionally needed support to keep the implementation process moving forward:

As supervisors, this is one little piece on our plates.... Everybody's getting pushed and pulled to different things. In some cases, this [program] winds up on the back burner until the last minute, and that's not helping it.

A large number of interviewees emphasized the importance of hiring a dedicated staff member to manage and/or coordinate the implementation process; such personnel were described by middle managers as signifi-

cantly more important than the presence of "innovation champions" identified in previous literature (e.g., Rogers, 2003). Middle managers from health care organizations that did not have these types of staff members reported more challenges in the implementation process. Interviewees located in health care organizations with designated staff indicated that having such staff was useful in several ways: increasing the sharing of information between managers, helping middle managers prioritize the implementation process, and making the time investment more manageable.

### Resource Availability

Not surprisingly, all of the middle managers described the availability of financial and physical resources as critical to their support for and ability to implement WBL. Staffing was by far the most frequently cited challenge, whereas supportive HR policies were described as a major facilitator.

**Staffing.** Although all of the participating health care organizations were able to tailor the innovation to their organization's specific workforce needs, all of the WBL programs focused on developing the skills of incumbent workers and required workers to participate in at least some skill training during their normal work hours. Many of these models also required middle managers or other staff within the frontline worker's department to deliver or facilitate the training as well. Participation in this program therefore represented a significant investment of resources from middle managers, who were required to find ways to compensate for the loss of staff during these training sessions. Staffing was consequently identified as the major challenge middle managers faced in implementing the program:

[The program] is supposed to be on-the-job training...but...if they're short-staffed, if you really have heavy care residents, it's a challenge to get it done.

Middle managers who were able to manage their staffing with little to no effect on the work environment were significantly more likely to support the innovation. Occasionally, middle managers stepped in or reassigned workers to cover for participants in the program. This solution, however, was only feasible for short periods and for units with lighter workloads. Other middle managers reported needing to hire temporary staff or finding other ways to backfill; these managers tended to report more difficulties with the implementation process.

**HR policies.** Interviewees felt that HR policies that were supportive of employees enabled innovation by formalizing components of WBL and providing resources for middle management to use. These policies were particularly relevant when considering solutions to staffing problems. In several of the larger health care organizations, as well as for

organizations that were part of a larger system or chain, the HR department was the entity responsible for providing funds or a replacement pool of workers to cover units' staffing needs when frontline workers and the individuals training them were participating in the program. In these organizations, middle managers expressed greater willingness to participate in the program. Middle managers were significantly more reluctant to support the program when resources for replacement staff were coming out of their own departmental budgets; certainly, this impacted the number of frontline workers that they were willing to have participate in the program. As one hospital manager explained,

If another employee came to me and wanted me to support them in this program... I couldn't do it...No matter how much I wanted to...I can't do it...I can't run the department with less people [than I have now].

Organizations that explicitly allocated resources to address middle managers' staffing concerns experienced significantly greater success with getting middle managers fully involved in the program.

In addition to helping generate solutions to staffing challenges, HR policies also increased middle managers' support by providing managers with recognition for their role in the project. This recognition took several forms, from officially designating these managers as mentors, preceptors, or coaches to securing them adjunct faculty status at a partnering educational institution. To middle managers, these titles legitimated the extra effort that they were asked to put in on behalf of their frontline workers. In only a few cases did employers explicitly allocate a portion of middle managers' time for mentoring, precepting, or coaching activities; when health care employers made this investment, it was for middle managers located within nursing education departments, rather than those responsible for clinical units or departments.

**Other financial and physical resources.** As might be expected, organizations' ability to implement supportive HR policies and resolve managers' staffing issues was frequently a function of the availability of other resources within the organization. Not all organizations had a separate HR department, and not all of the organizations had slack resources available. The recent U.S. economic downturn impacted some of the participating organizations more heavily than others; in one health care system, it resulted in the closure of several facilities. Middle managers operating in financially constrained environments deprioritized the program and focused more heavily on their units' core functions. As one supervisor put it,

The economic situation has changed dramatically... the resources to even pay for the health care are not

there. As a result, we've had to streamline and get a little bit leaner, to make sure that we can provide what our community needs. and I think we've done a great job, but meanwhile this would be one of the programs [that gets deprioritized].

### Upper Management Support

Consistent with literature indicating that leadership support is necessary for complex innovation and improved performance in health care organizations (Plsek & Wilson, 2001), middle managers' willingness to participate in the implementation process was often contingent on upper managers' expressed support for the program. In several of the participating health care organizations, interviewees stated that upper management's support or advocacy for innovative behavior was essential for mobilizing resources to make the program happen. Leadership support was also helpful in encouraging middle managers to prioritize the implementation process. For example, when asked to identify critical supports within the implementation process, one supervisor responded,

That there is senior staff commitment...that senior staff does support the underlying concepts.... If that was not the case...this is a type of thing that could get pushed to the side and less energies and less emphasis placed on it just in the natural course of events."

When upper managers did not express support for the program or when relations between middle managers and their direct supervisors were not optimal, middle managers were significantly more reluctant to participate. Middle managers deal with a significant amount of risk and responsibility; their willingness to participate in innovative behavior was often described as being directly influenced by the amount of support they received from upper management.

### Organizational Culture and Climate

When asked to describe organizational characteristics that influenced their support for the implementation process, middle managers most frequently identified the existence of a learning culture and a specific factor within the organizational climate—role overload—as being the most influential.

**Learning culture.** Organizational culture consists of the organizational norms and expectations regarding how people behave and how things are done in an organization (Glisson & James, 2002). A learning organization is one that promotes the development of its members and continuously transforms itself through innovative behavior

(Pedler, Burgogyne, & Boydell, 1997) and is characterized by an organizational culture involving open communication, reflection of action, and collaborative or team learning. Specific characteristics within their work environment that middle managers identified as influential include a “grow your own” culture that promotes the career development of incumbent staff and an emphasis on continual, team-oriented learning. As one supervisor described it,

One of the things I've tried to do with my unit is a learning environment...my expectation from my staff is that they provide positive learning experiences...if you've learned to work as a team...then you want to work here. Mine is not the only unit like that, but it is certainly strong in that.

This type of environment was described by middle managers as critical to promoting innovative behavior. Furthermore, the types of relationships between staff members developed through a learning culture were described as building teamwork and contributing positively to unit performance.

**Role overload.** Role overload, or having too many demands given the time available to satisfy them, is a recognized problem within the organizational climate of many health care organizations and has been associated with health outcomes and with turnover (Coverman, 1989; Glisson, Dukes, & Green, 2006; Hecht, 2001). For the middle managers within the health care organizations participating in the study, being short-staffed and working with difficult clientele were described as key contributing factors to the work environment and middle managers' ability to implement the program. For example, one middle manager said,

There were differences in my units. In one, there was really a lot of teamwork and helping each other. I struggled more with the other.... I think it was the level of intensity...they're working with difficult clients, they're already stressed out...it's a difficult clientele...[and] turnover is greater.

Middle managers operating in units with higher role overload were more likely to experience staffing issues and greater difficulties with implementing the program overall.

### Contextual and Structural Characteristics

The contextual and structural characteristics of the organization, such as the size of the unit and the type of participating health care organization, were described as important only in their influence on resource availability and organizational culture. Consistent with previous literature indicating that size has an indirect, positive influence on innovative behavior due to its relationship with

other structural attributes of the organization (Moch, 1976; Pugh, Hickson, Hinings, & Turner, 1969; Robey, Bakr, & Miller, 1977), our results indicated that large organizations had a significant advantage with regard to resource availability. Smaller health care organizations were often described as having fewer resources with which to implement the project. Within larger health care organizations or systems, smaller units struggled significantly more than larger units with staffing issues. According to one supervisor within a large health care system, “In big departments, you can just backfill days [when participants are gone] with part-time and Code 3 people...but in smaller departments, that's an issue, how to give them the time to be successful without impacting the long-term viability of the department.”

### Practice Implications

Our purpose in this study was to better understand the factors influencing middle manager support for the implementation of complex innovations. We found that despite our narrow focus on middle managers, the factors that emerged as important were similar to those found in broader models of innovation implementation in the health care literature (Helfrich et al., 2007; Weiner et al., 2009). Where our findings differed and extended current research was in the understanding of how middle managers perceived these constructs and the ways in which they influenced middle managers' support for the implementation process.

Middle managers within our sample described their support for the WBL innovation in terms of how it would influence performance within their particular units, rather than the organization as a whole. This tendency was true even in organizations with a strong, cohesive organizational culture. This finding is important for leaders implementing innovations. Taking the time to elucidate the benefits for the middle managers at the outset of the project is central to securing middle manager support. Upper-level administrators seeking to encourage middle managers' participation in the implementation process should also pursue strategies that take managers' needs and priorities into consideration.

Soliciting middle manager feedback and allowing them discretion in tailoring the innovation to their units' needs also emerged as particularly effective strategies for increasing middle manager support. Middle managers reported higher buy-in and implementation was more successful when they had discretion and control over the implementation process. These findings are consistent with research suggesting the importance of involving middle managers in the development of strategic initiatives (Carney, 2006; Currie, 2006) and reflect the important role that middle managers play in providing the day-to-day on-the-floor support necessary for the implementation of complex innovations. Within health care organizations, middle

managers are the individuals most likely to possess the know-how for the best way to get things done in the context of their own departments or units; certainly, a large part of their value lies in middle managers' ability to serve as mediators between an organization's strategies and its day-to-day activities (Nonaka, 1994; Wooldridge, Schmid, & Floyd, 2008). Giving middle managers the discretion and control to use their unit-specific knowledge to incentivize, recognize, and accommodate the needs and preferences of their workers can therefore be viewed as a critical but often overlooked part of the implementation process: It allows middle managers to use their tacit knowledge of daily operations to maximize performance and productivity within their unit while implementing the innovation (Nonaka & Takeuchi, 1995; Wooldridge & Floyd, 1990). Fidelity to the innovation is a key area of concern here but one that can be communicated to middle managers as they seek to adapt the "how" of getting it done on their department/unit.

Having at least one dedicated staff assigned to coordinate and facilitate implementation activities was also identified as both useful for ensuring fidelity and important for increasing and sustaining middle manager buy-in to the WBL program. By serving as the "go-to" people to provide information about the project and answer any questions that came up, these individuals saved managers time and effort in trying to find answers to implementation questions. The investment of organizational resources into supporting this type of dedicated staff person was also perceived by middle managers as a more convincing statement of organizational commitment to the innovation than verbal support.

Similarly, expressed upper management support for an innovation was identified as necessary but insufficient to ensuring middle manager buy-in unless it also involved the mobilization of sufficient resources. Upper management support that was reinforced by the allocation of resources, such as access to central monies to backfill staff or the expansion of HR policies to include financial support for educational release time or the development of competency-based career ladders for frontline workers, was considered much more effective in garnering middle manager buy-in than was simple verbal support. In particular, upper managers who encourage HR personnel to work closely with middle managers to align organizational resources with middle managers' operational needs experienced significantly higher levels of middle manager buy-in. These findings are consistent with previous research suggesting that middle managers are more likely to participate in organizational change processes when organizational resources are invested in their development (Currie & Procter, 2006).

In general, study findings were remarkably consistent across all four types of health care organizations within our sample (behavioral health organizations, community

health centers, hospitals and health care systems, and long-term care facilities). Contextual and structural characteristics such as size and configuration did vary across types of health care organization but were influential only in their effect on the availability of resources to support the implementation process; long-term care organizations, for example, had fewer financial resources available to support frontline worker training, as well as fewer opportunities for these workers' career advancement than did hospitals. The consistency of these findings across health care organizations suggest that innovation leaders seeking to persuade resistant middle managers to participate in their programs should work with managers to find ways to reduce the perceived cost of implementation in their departments or units.

One limitation of this study is that the findings may not be generalizable to all types of middle managers. Due to the nature of the WBL innovation, almost all of the middle managers within our sample also held direct care or clinical positions. In other words, middle managers who were preceptors and instructors of identified WBL skills were more likely to be selected into the study. Given the influence that a clinical background can have on the diffusion and implementation of innovations within health care organizations (e.g., Dopson & Fitzgerald, 2006; Ferlie, Fitzgerald, Wood, & Hawkins, 2005), it is possible that this study would have yielded different findings if more middle managers who did not also have direct care or clinical roles were involved.

Despite this limitation, the findings of this study will ideally provide innovation leaders with guidance on how to promote middle managers' participation in the implementation process. Coding of our analytic sample of 17 health care organizations demonstrated high levels of consistency in responses from middle managers located in a wide variety of different departments and regions across the United States. This consistency indicated that these are likely the main factors influencing middle managers' support for this particular innovation. Future research can build upon these findings examining whether these factors also influence middle managers' support for other types of complex innovations.

## Conclusion

Middle manager resistance is often described as a major challenge for upper-level administrators seeking to implement complex innovations such as evidence-based protocols or new skills training (Proctor et al., 2007). This study makes an important contribution to the literature by identifying specific policies and practices that enhance middle managers' support for the implementation process. Findings indicate that there is interplay between middle managers' control and discretion, their narrow focus on the performance of their own department or unit, and the

dedication of staff and other resources for empowering managers to implement the complex innovation. They also exemplify important intermediate mechanisms within health care organizations that need to be addressed for successful implementation of complex innovations to occur.

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