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# What roles do middle managers play in implementation of innovative practices?

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**Background:** Middle managers play key roles in hospitals as the bridge between senior leaders and frontline staff. Yet relatively little research has focused on their role in implementing new practices.

**Purpose:** The aim of this study was to expand the understanding of middle managers' influence in organizations by looking at their activities through the lens of two complementary conceptual frameworks.

**Methodology/Approach:** We analyzed qualitative data from 17 Veterans Affairs Medical Centers with high and low potential to change organizational practices. We analyzed 98 interviews with staff ranging from senior leaders to frontline staff to identify themes within an a priori framework reflecting middle manager activities.

**Findings:** Analyses yielded 14 emergent themes that allowed us to classify specific expressions of middle manager commitment to implementation of innovative practices (e.g., facilitate improvement innovation, garner staff buy-in). In comparing middle manager behaviors in high and low change potential sites, we found that most emergent themes were present in both groups. However, the activities and interactions described differed between the groups.

**Practice Implications:** Middle managers can use the promising strategies identified by our analyses to guide and improve their effectiveness in implementing new practices. These strategies can also inform senior leaders striving to guide middle managers in those efforts.

**Key words:** implementation, middle managers, organizational innovation, quality improvement

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In recent years, changes in the health care environment have led to an increased emphasis on improving quality of care by focusing on safety, efficiency, and value (Kleinman & Dougherty, 2013; Institute of Medicine, 2001). Although there has been a push for changing clinical practice, doing so has proven difficult (Conway & Clancy, 2010; Leape et al., 2009). Often health care organizations' efforts to implement change in their facility are not successful, with employees frequently facing competing priorities, knowledge barriers, or misaligned incentives (Alexander, 2008; Burnes, 2004; Ferlie, Fitzgerald, Wood, & Hawkins, 2005; Shortell, Bennett, & Byck, 1998). However, implementing innovative practices can help facilitate positive change in health care organizations (Birken, Lee, & Weiner, 2012). Furthermore, implementing quality improvement initiatives, which are defined as "systematic, data-guided activities designed to bring about immediate, positive change in the delivery of health care" (Baily, Bottrell, Lynn, Jennings, & Hastings Center, 2006), can guide health care organizations toward improved quality of care. Middle managers can play an important role in health care organizations by facilitating the implementation of innovation and quality improvement initiatives within their facility (Birken et al., 2012; Bourne & Walker, 2005).

Although current literature has identified a number of individual and organizational factors that influence quality improvement effectiveness, the emphasis has predominately been on senior leaders with a lack of focus on the middle managers' influence on organizational change efforts (Birken et al., 2012; Feifer & Ornstein, 2004; Hagedorn et al., 2006; Noble, 1999). For example, studies have found that leadership is necessary for innovation and improved performance in a health care facility, and leadership support is essential for organizing resources needed to carry out innovation implementation (Chuang, Jason, & Morgan, 2011; Plsek & Wilson, 2001). In addition, senior leaders who demonstrate support for implementation can influence positive staff involvement in innovation and encourage middle managers to prioritize innovation implementation; however, additional research is needed to evaluate how middle managers influence implementation effectiveness (Birken, Lee, Weiner, Chin, & Shaefer, 2013; Chuang et al., 2011; Klein, Conn, & Sorra, 2001). Studying middle managers is important because they are able to facilitate or enhance innovation implementation processes, implement change, and improve organizational performance (Caldwell, Chatman, O'Reilly, Ormiston, & Lapid, 2008; Wooldridge & Floyd, 1990). Furthermore, studying middle managers is imperative because they are situated between senior leaders and frontline staff in the organization and have the ability to bridge or create information gaps that may influence innovation implementation in positive or negative ways (Birken et al., 2012). Additional research is needed to gain insight into how differences in middle managers' actions may influence improvement efforts in organizations.

## Theory/Conceptual Model

This article aims to better understand how middle managers can influence organizations by looking at their behavior through the lens of two complementary conceptual frameworks, the theory of middle managers' role in implementing innovative practices (Birken et al., 2012) and the Organizational Transformation Model (OTM; Lukas et al., 2007), which considers organizational factors in relation to organizational change.

The theory of middle managers' role focuses specifically on middle managers in an organization and theorizes that they express their commitment to innovation implementation by (a) diffusing information to give employees necessary information about innovation implementation, (b) synthesizing information to provide relevant examples to help employees understand how innovations are implemented, (c) mediating between strategy and day-to-day activities to give employees the tools needed to implement innovations, and (d) selling innovation implementation to encourage employees to use it consistently and effectively (Birken et al., 2012). In addition, Birken et al. (2012) theorize that middle managers can play a key role in managing the demands associated with implementation by identifying actions that need to be prioritized in order to support innovation implementation and engaging employees in innovation implementation. This framework provides the basis for further examining the behaviors of middle managers' contributions not only toward implementing innovative practices to facilitate quality improvement initiatives but more broadly building improvement capabilities in a health care setting.

The OTM looks more broadly at organizational factors associated with organizational change and the implementation of evidence-based clinical practices (Austin et al., 2014; Lukas et al., 2007, 2010). This framework allows us to examine the relationship between middle manager behavior and the larger organizational context in which they operate and explore whether middle manager behaviors differ in organizations that are supportive of structures and processes that facilitate change and the implementation of new practices versus those that are not. The OTM identifies five critical elements for moving organizations from short-term to more sustained improvements. These five elements include (a) impetus to transform, (b) leadership commitment to quality, (c) improvement initiatives that actively engage staff, (d) alignment to achieve consistency of organization-wide goals, and (e) integration to bridge organizational boundaries (Lukas et al., 2007). In addition, the OTM found that improvement in health care organizations was greater when middle managers were committed to quality, being actively involved in the redesign process, and fully aligned around the importance of quality improvement (Lukas et al., 2007). Furthermore, OTM aligns with the understanding that quality improvement initiatives in a

health care facility require organizational change, implementation, and innovation in order to be successful (Kaplan et al., 2010).

The main objectives of this article are to expand on Birken and colleague's framework using elements of the OTM to gain insight into how middle managers can influence the implementation of innovative practices and the development of improvement capability by asking the following: (a) What are the roles of middle managers in implementing innovative practices? (b) Are there differences in the middle manager activities associated with the larger organizational context in which they operate—and if so, what are they?

## Methods

Our analysis of middle managers' roles and behaviors is based on data collected for a broader management evaluation of grants that focused on strengthening improvement capability in the Department of Veterans Affairs (VA). In this study, we define improvement capability as an organization's capacity to continuously improve their quality, safety, and values, which requires support in the form of resources, organizational processes, and building an overall culture of improvement (Adler et al., 2003). Middle managers are defined here as staff with a supervisory capacity other than senior leaders (e.g., department managers, program managers, nurse managers, administrative directors, frontline supervisors).

## Setting

Starting in 2009, the VA Office of Systems Redesign awarded 30 Improvement Capability Grants to 25 Veterans Affairs Medical Centers (VAMCs) and 5 Veterans Integrated Service Networks nationwide. Grant funding lasted 3 years beginning in FY2009 for 10 grantees and FY2010 for 20 grantees. For the analyses in this article, we include only the VAMC grantees, because middle managers in the network grants were a step removed from the medical centers, and therefore, their roles were not comparable. Our analyses focused on interviews conducted in Fall 2011 and Fall 2012, coinciding with the end of grant funding for each facility.

## Data Collection

For the full evaluation, selected staff members from each facility participated voluntarily in biannual, in-depth semi-structured interviews for the life of their local improvement capability grant, with follow-up interviews occurring at 1 year postgrant. Interviewees were selected purposively to obtain the perspectives of individuals in particular positions related to the grant and/or the development of improvement capability at different levels and in different areas of the

medical center. Although the specific individuals varied depending on the organizational structure of each medical center and on the objectives of the local grant, the categories of interviewees included (1) medical center senior leadership; (2) middle managers who were either (a) directly involved in the Improvement Capability Grant (typically the System Redesign Coordinator, the Quality Management Officer, and the designated point of contact for the grant) or, to gain a diversity of perspectives, (b) identified by the site at the evaluators' request to represent middle managers who had participated in improvement initiatives and those who had not participated; and (3) frontline staff identified by the site as individuals who had participated in improvement initiatives.

Interview protocols asked about grant implementation and included the five OTM elements to guide our assessment of organizational capacity for supporting positive change. The interview protocol also included questions pertaining specifically to middle manager behaviors. The interview protocol can be found in the Appendix (see Appendix, Supplemental Digital Content 1, <http://links.lww.com/HCMR/A6>). The interviews were conducted in both individual and group formats. Group interviews included participants in similar job categories or individuals who were part of an existing improvement team.

## Measures and Analysis

Initially to select a sample of sites for our analysis and later to assess the organizational context in which middle managers operate, we used the OTM composite scores calculated for the full evaluation to characterize the sites, with high OTM scores reflecting high potential for change and low scores reflecting low potential for change. The OTM composite scores were derived from a structured analytic tool organized by the five elements of the OTM, following a method used previously (Lukas, et al. 2010). After each site visit, team members used the tool to record narrative evidence from the interviews of the operational components of each OTM element. Then each team member independently rated each component with scores ranging from 0 (*no evidence of the element present*) to 4 (*element in place and consistently being used as intended*). After the independent ratings, team members compared ratings and developed a consensus score for each element. Composite scores were calculated by averaging scores for the five elements. Although one might expect all sites to have high OTM scores given their interest in applying for grants to build improvement capability, in fact, there was substantial variation, with scores ranging from 0.75 to 4.0. Using these scores, each of the 25 VAMCs was categorized into high, middle, and low terciles for change potential. Our analysis focused on comparisons of high tercile (nine high change potential facilities with composite scores ranging from 3.5 to 4.0) and low tercile (eight low change potential facilities

**Table 1**  
Organizational and descriptive facility information

Facility	OTM composite score	Academic affiliations	Unique patients <sup>a</sup> (FY 2012)	City population <sup>b</sup>	Geographic region <sup>c</sup>
A	<b>4</b>	<b>Yes</b>	<b>50,000–100,000</b>	<b>50,000–100,000</b>	<b>West</b>
B	<b>4</b>	<b>Yes</b>	<b>25,000–50,000</b>	<b>100,000–500,000</b>	<b>South</b>
C	<b>4</b>	<b>Yes</b>	<b>25,000–50,000</b>	<b>500,000+</b>	<b>Midwest</b>
D	<b>3.875</b>	<b>Yes</b>	<b>50,000–100,000</b>	<b>100,000–500,000</b>	<b>Midwest</b>
E	<b>3.875</b>	<b>Yes</b>	<b>50,000–100,000</b>	<b>500,000+</b>	<b>Midwest</b>
F	<b>3.75</b>	<b>Yes</b>	<b>100,000+</b>	<b>100,000–500,000</b>	<b>South</b>
G	<b>3.75</b>	<b>Yes</b>	<b>50,000–100,000</b>	<b>500,000+</b>	<b>West</b>
H	<b>3.5</b>	<b>Yes</b>	<b>50,000–100,000</b>	<b>50,000–100,000</b>	<b>Northeast</b>
I	<b>3.5</b>	<b>Yes</b>	<b>0–25,000</b>	<b>100,000–500,000</b>	<b>Northeast</b>
J	2.25	Yes	50,000–100,000	500,000+	South
K	2.25	Yes	25,000–50,000	100,000–500,000	Northeast
L	2.125	Yes	25,000–50,000	0–50,000	Midwest
M	1.875	Yes	25,000–50,000	100,000–500,000	South
N	1.875	Yes	25,000–50,000	0–50,000	South
O	1.5	Yes	50,000–100,000	100,000–500,000	South
P	0.75	Yes	25,000–50,000	100,000–500,000	Midwest
Q	0.75	Yes	50,000–100,000	100,000–500,000	Midwest

Note. Bold font indicates data and information about high change potential sites (Facilities A–I). OTM = Organizational Transformation Model.

<sup>a</sup>Unique patients are reported in ranges to anonymize sites (Department of Veterans Affairs, 2013).

<sup>b</sup>City population is reported in ranges to anonymize sites (U.S. Census Bureau, 2010).

<sup>c</sup>U.S. Census Bureau, 2010.

with composite scores ranging from 0.75 to 2.25). We focused on the outlier high and low terciles to maximize the differences between groups and ensure that comparisons were between two distinct groups. We chose to exclude the middle tercile, because the differences in scores between that group and the outlier groups were too small to have confidence they represented real differences. Additional organizational and descriptive information on the 17 included sites can be found in Table 1.

The qualitative data included 54 interviews in the nine high change potential sites and 44 interviews in the low change potential sites. In total, the analysis included 17 facilities, 98 interviews, and 192 individuals. Table 2 summarizes the data sample.

We applied a priori codes pertaining to the four components of middle manager commitment identified in the Birken et al. theory of the middle manager's role in health care innovation implementation to analyze middle manager activities. The four-person qualitative team came to consensus on the code definitions, and interrater reliability was established in an iterative process. All 98 interviews were then systematically coded for mentions of middle manager behavior by using Nvivo software. In order to ensure maximum saturation, each interview was coded by two members of the team. Subsequent comparative case analysis across all 17 sites yielded emergent themes within each component and identified distinguishing features of high and low change potential sites.

**Table 2**  
Qualitative data sample

	Interviews (group and individual)	Individuals interviewed	Senior leaders interviewed	Middle managers interviewed	Frontline staff interviewed
High change potential sites ( $n = 9$ )	54	113	19	62	32
Low change potential sites ( $n = 8$ )	44	79	17	36	26
Total	98	192	36	98	58

## Findings

### Overview

In comparing middle manager behaviors in high and low change potential sites, we found that although most of the emergent themes were present in both groups, the ways in which they were used or expressed differed. In the rest of this section, we describe the 14 themes in greater detail and provide examples of common and distinguishing expressions of the themes. Quotes that are illustrative of each common and distinguishing theme can be found in Table 3.

### Information Diffusion

Information diffusion, as defined by Birken et al. (2012), is middle managers disseminating facts, giving employees necessary information about improvement capability activities. We found both common and distinguishing expressions of information diffusion across high and low change potential sites.

**Common expressions.** We found several communication mechanisms that were present in both the high and low change potential sites.

**Communication mechanisms.** All middle managers used meetings, informal and formal, specific to the innovation or improvement in order to relay important information. Daily huddles, an example of an informal meeting, were used as a way to pass on information to staff. Huddles are brief, frequent, meetings with staff that are focused on specific aspects of implementation of process improvement (Barnas, 2011; Institute for Healthcare Improvement, 2004).

Middle managers used formal reporting structures (e.g., committee meetings) to convey information about innovations laterally and upward in the organization. It was then up to middle managers to relay any information gathered during these meetings back to their staff.

Middle managers used coaching as a way to communicate information about improvements. Middle managers in this role delivered information to staff by facilitating improvement projects, in this context providing staff with pertinent information regarding the implementation of innovation.

Middle managers used electronic modes of communication such as e-mail, SharePoint, and other Web-based communications. In addition, they used visual aids to convey information to staff. These visual aids include posters, white boards, and videos.

**Distinguishing expressions.** The overarching difference between middle managers' information diffusion in high and low change potential sites was in their communication styles.

**Communication styles.** Middle managers in high sites communicated in ways that were informal but clear, direct, transparent, multidisciplinary, and multidirectional. Middle managers in low sites communicated information about

innovations in ways that were formal, often fragmented, and unidirectional with fewer outlets for staff feedback.

These differences in communication styles effected middle manager communication mechanisms. Although similarities existed, we found that the way in which these communication mechanisms were carried out varied. For example, differences existed in how middle managers used formal reporting structures in the organization. In the low change potential sites, middle managers used these structures mainly to report information to senior leaders in the organization. The focus on reporting upward, along with the differences in communication styles of middle managers in high and low sites, negatively affected whether that information made it back to the frontline staff.

Alternatively, middle managers in the high change potential sites used formal facility or unit rounding to not only convey important information to their staff but also to gather important information. Their physical presence on the unit allowed them to observe implementation, deliver important information, and garner feedback from staff. The presence of rounding was not cited in low change potential sites. In addition, middle managers in high sites held events or forums specific to the innovation in order to convey information.

Furthermore, high change potential site middle managers used electronic communication mechanisms in more active and multidirectional ways than low change potential site middle managers. For example, middle managers in high sites used online meetings, which allow staff throughout the organization to participate and influence the implementation of innovative practices, whereas middle managers in low sites conveyed information in a unidirectional fashion by e-mailing staff or posting information to organizational Web pages. Lastly, high change potential middle managers used visual data like statistical dashboards and flow charts of processes to convey information about the innovation.

### Information Synthesis

Birken et al. (2012) define information synthesis as integrating and interpreting facts, making general information about improvement capability activities relevant to unique organizations and employees. Again, we found both common and distinguishing middle manager expressions of information synthesis across high and low change potential sites.

**Common expressions.** One theme that was present across both high and low sites was improvement innovation facilitation.

**Improvement innovation facilitation.** For improvement projects that facility staff identified as unsuccessful or not meeting objectives, middle managers analyzed where the project broke down and identified the root cause of that failure. Some of the root causes identified were organizational barriers, staff engagement, and lack of resources.

Middle managers took this information and made improvements to their facilitation of the project in order to

Table 3

## Emergent themes with illustrative quotes

Emergent themes	Common or distinguishing example	High change potential sites	Low change potential sites	
Information diffusion <sup>a</sup>	1. Communication mechanisms	Common  Distinguishing	<p>"We are in the process of experimenting with different tools and methods... One is having regularly scheduled team huddles. We talk about initiatives or ideas that staff have for improving processes. Secondly is using additional management tools like white boards as a way of aligning the work teams. The third element is doing daily status reporting, which we're just starting to work on." (Middle Manager, Site D Interview 5)</p> <p>"In the weeks ahead I anticipate conducting lots of Live Meetings, which I... find it's an extremely effective technique to be used for all kinds of stuff. Tuesday I had a meeting... and I needed to demonstrate the urgency of the problem. I invited [her] to a Live Meeting... and I was able to not just tell her but show her so she got a real sense of the scope of the problem... I'm spreading the word and I think it has a ripple effect... we need to get our staff aware of the technological tools that we have readily available." (Middle Manager, Site G Interview 6)</p>	<p>"One of the [strategies] is these process improvement boards to give people the ability to show hey we're just doing stuff here and there without them feeling like they have to do a huge project." (Middle Manager, Site M Interview 5)</p> <p><i>Distinguishing theme not present in low change potential sites.</i></p>
	2. Communication styles	Distinguishing	<p>"There are lots of discussions about [process improvement projects] that occur on a daily basis. We are constantly generating ideas and what I did at the outset was I gave everybody one of the small moleskin notebooks and told them 'Put this in your pocket and every time there is something that doesn't seem to work well or something that frustrates you write it down because that's a potential quality improvement project.' We've been doing that now for 6 months and we've been coming up with reams of ideas of things that we could do. I check in with them on a monthly or bimonthly basis officially to kind of say 'Report to the group. Where are you at with your project? How are things going? What challenges do you have? How can we as your peer group help you overcome some of these challenges?' Then informally we're talking on at least a weekly basis if not more frequently just about what's going on and we're bouncing ideas off of each other." (Middle Manager, Site D Interview 4)</p>	<p>"... we had a problem with patients in ICU after surgery... a situation that might lead to a heart attack and the physicians involved in that group are, well, they're from two different services, and you get two different services treating the same condition in ICU and it's treated in different ways... I went to a whole meeting with the [Senior Leader], with [Quality Management] and one of the key physicians and we talked about this stuff. Because the team, these folks don't go to the team meeting and so the information doesn't get back to the team. It just drives me nuts, poor management." (Middle Manager, Site K Interview 2)</p>
Information synthesis <sup>a</sup>	3. Improvement innovation facilitation	Common	<p>"The problem was, we also looked at, without involving the midlevel managers and supervisors as much as we should have, it almost became this is [Systems Redesign]'s project and our [Systems Redesign] coordinators were pretty much taking ownership of whatever project they were in. Now we're looking at it and saying 'Hey, you're coaches, you're subject matter experts that can be called upon but we really want the managers and supervisors to be the ones spreading this out.'" (Middle Manager, Site I Interview 2)</p>	<p>"One of the new strategies that we have this year was that we heard from the supervisors and service chiefs that sparing people for 2 days was very difficult, especially with the frontline staff... We've condensed our training down to 1 day, but we go in with preset problems and aims statements so that we don't spend time doing that." (Middle Manager, Site M Interview 2)</p>
	4. Participate in organizational or clinical improvement innovations	Distinguishing	<p>"...it was a problem-solving meeting that a group of multidisciplinary staff from a different areas had gotten together, scheduled the meeting and were working on one of their problems. It was just encouraging to see that this is really in action here. They're really working on it. It's not just us that are saying, 'Why don't you do a problem solving on that.' It's now the supervisors and managers that are working with their staff saying, 'I think that problem would benefit from the problem-solving methodology.'" (Middle Manager, Site I Interview 2)</p>	<p><i>Distinguishing theme not present in low change potential sites.</i></p>

(continues)

**Table 3**  
Continued

Emergent themes	Common or distinguishing example	High change potential sites	Low change potential sites	
5. Garnering staff involvement	Distinguishing	<p>“The other thing we’re proud of is that [the project] actually was something that was identified by one of our floor nurses...who saw that this was a safety issue... and brought it to the attention of the nurse manager on that floor who then contacted [a Department Middle Manager]...So it was really nice that it came from frontline staff. That particular staff member was also involved in the process of developing the solution for this. So it was really nice in that way (1) that it came from nursing and (2) that it came from a frontline staff member who I think from talking to him afterwards feels really good, that he was heard and a team was put together fairly quickly after he raised that concern.” (Middle Manager, Site A Interview 1)</p>	<p><i>Distinguishing theme not present in low change potential sites.</i></p>	
Strategy/ day-to-day mediation <sup>a</sup>	6. Training	Common	<p>“As part of our new employee orientation, we do have section on introducing that we are striving to become a Lean organization and what that means... We want people to be looking at things when they come into work as ‘Hey, I’m coming in. I’ve recognized that if I just this small thing it’ll make the process go that much easier.’... We want them to be looking for problems that they can solve... That’s what the intro course is going to do for us and it’s going to let people see the culture of the organization they’re coming into.” (Middle Manager, Site I Interview 2)</p>	<p>“[The middle manager] just finished doing education of all of the nurses, the RNs, on triage using these guidelines that everyone uses... and she’s also done training for all of the nurses on chronic disease management.” (Senior Leader, Site L Interview 1)</p>
	7. Coaching	Common	<p>“And then say ‘and you’re going to call me next week and tell me what your project is’ and they did. And then I coached them through it.” (Middle Manager, Site H Interview 1)</p>	<p>“Our strategy has been one of give people the tools, and with it they’ll build something.” (Middle Manager, Site K Interview 5)</p>
		Distinguishing	<p>“...we’re trying to first take a step back... whet everyone’s appetite, let them see how lean principles and system redesign principles can be done on an everyday basis, how they may use them, and everyday things that they do to make things better. And then once they get that area of interest going, then asking them, working with their leaders in identifying areas that they feel need to be improved upon.” (Middle Manager, Site B Interview 1)</p>	<p><i>Distinguishing theme not present in low change potential sites.</i></p>
8. Provide resources and support	Common	<p>“So [he] and I have started to go out once weekly in the mornings and just be a presence during rounds. Asking the teams how they’re doing, looking at trouble shooting, asking nurses or clerks what they’re observing or what they’re witnessing as to possible problem areas. We come back with ideas for improvement or more commonly... a new idea, but just underscoring something that we already said but needs to be reemphasized or reminded.” (Middle Manager, Site C Interview 3)</p>	<p>“It’s hard for [trained frontline staff] to go back to a service that has no Systems Redesign resources for them other than themselves... I doubt that they’re actually going to follow through and do a project on their own or feel empowered to do anything if they don’t have anybody else that has the same knowledge or can help them along with it.” (Middle Manager, Site M Interview 5)</p>	
	Distinguishing	<p>“The [department] chief got really excited about [the improvement innovation]... He had a staff that was kind of ho hum and had some communication issues, a lot of rework, a lot of putting out fires. He wanted to break down some of those barriers so they worked better as a team. He implemented a lot of those projects because he knew that doing the project work was a tool to get them to work better together so they were able to function better as a team than they were a couple years ago.” (Middle Manager, Site H Interview 4)</p>	<p><i>Distinguishing theme not present in low change potential sites.</i></p>	

(continues)

Table 3

Continued

Emergent themes	Common or distinguishing example	High change potential sites	Low change potential sites
9. Encourage independent thinking	Distinguishing	"I've had a number of residents who approached my group or members of the [other medical service] group to be involved with some of these processes. I always try to encourage them whenever I'm on service to be thinking of ways that things can be done better or looking to notice things that strike them as unusual. So for one example I had a senior medical resident from one of the services who had noticed [a specific issue with lab testing]. This set off a bell for him and he was thinking that maybe this is a potential quality improvement project... I think that is the goal, to have everyone looking at the work that they do and looking at how it can be done better and how it can be improved upon." (Middle Manager, Site D Interview 4)	<i>Distinguishing theme not present in low change potential sites.</i>
Selling innovation implementation <sup>a</sup>	10. Facilitating staff buy-in of innovations	Common	"We've already had a couple of management guidance team meetings in order to get [staff] oriented to what [process improvement] is about and to explain what value stream analysis and management is. I think our stakeholders have lined up very well around that." (Middle Manager, Site A Interview 2)
	Distinguishing	"One thing that's happened here is a majority of the managers have received [process improvement] training and I think it is a good thing, it introduces them to Lean... each service has to have a [Process Improvement] plan that is reported through the [organizational] committee system..." (Middle Manager, Site F Interview 3)	"I think you really see how in order to make sustainable change there are steps to the process. It's very difficult to make change and have a good outcome and be able to sustain the change if you don't take these steps. At each step you're looking at processes... Process owners look at it and offer their opinions and suggestions in order for processes to continue and improvement to be made. Bottom line is you have to have buy-in from the group. As you work through the processes as a group, you get buy in..." (Middle Manager, Site K Interview 4)
11. Facilitating effective use of innovations	Common	"We keep bugging them, and I'll have episodic monthly meetings with hospitalists group, and this is always a major thing on the agenda... they listen again to the rationale. Initial period of instruction was relatively formal, but these meetings are less formal to revisit not everything, but key points underscoring the points of this and goals...to keep a sense of motivation going..." (Middle Manager, Site C Interview 3)	"...we have other [middle managers]... they really embrace the concept of empower their people and we've got solutions that we need to get to, but don't know how... but let's employ some tools to get there." (Middle Manager, Site K Interview 6)

(continues)



**Table 3**

Continued

Emergent themes	Common or distinguishing example	High change potential sites	Low change potential sites
	Distinguishing	<i>Distinguishing theme not present in high change potential sites.</i>	“Right now I think it’s more of a check-the-box mentality as far as [department middle managers] who think they can just send people to be trained, but then they won’t necessarily let them participate on project teams... Then a lot of services send their people as ‘Ok, we’ve sent them; we met the requirements.’ But then don’t let [staff] participate on teams.” (Middle Manager, Site M Interview 4)
12. Creating a sense that improvement/ use of innovations is an expectation	Common	“...our group has a small amount of protected time to be involved with [process improvement] projects. I’ve set an expectation for my group... everyone will have a project and will be actively working on it...we’ve been in existence for 6 month... Everyone has been making strides forward. It’s a well-defined and clearly articulated expectation but we’re also frontline workers and seeing processes at a visceral level... we’re constantly coming up with ideas for way things can be tweaked or improved.” (Middle Manager, Site D Interview 4)	“If it’s part of [staff] job description and if they are accountable for their role in the project and if there is a failure, it gets reported back to senior management levels... I think it helps keep people engaged... ” (Middle Manager, Site J Interview 1)
13. Providing support of innovations	Common	“I think Medicine has excellent support. [Specific middle managers], they are hands-on type of managers... Working here and in the Medicine service line... you have so much support. They want to see you grow as a clinician, as a provider, and they welcome about your opinion about what will possibly make things better.” (Middle Manager, Site B Interview 1)	“We’ve had some recent changeovers in our major [Department middle managers]. Several of those individuals are very supportive of Lean projects. They come from other institutions that have done similar things. Those individuals will add a lot to what we’re currently doing....” (Middle Manager, Site M Interview 2)
14. Providing encouragement to use innovations	Common	“There were early adopters who I try not to tap too often because they have day jobs. So what I’m doing is rewarding them for their hard work... and one of ways I rewarded them this year was sending 14 of them, using grant funding, to a LEAN conference...They loved it... There are people that said they are so jazzed all over again that they got so many new ideas they couldn’t wait to get back and use them in their area.” (Middle Manager, Site H Interview 1)	“What we’ve done is educated as many people as we can...began with a concerted effort training people and getting them to try to work together as groups. But we also recognized that at the management level we can’t necessarily know what the areas are that savings could be incurred. So we sent people off with the tools and then give them encouragement to engage in it.” [Middle Manager, Site K Interview 5]
	Distinguishing	<i>Distinguishing theme not present in high change potential sites.</i>	“We... try to map [frontline staff’s] process... I came up with a few things to fix, areas where there was waste and rework... I went to a training and I wanted [frontline staff] to try that process... [2 middle managers] harassed people all day... [frontline staff] were willing to accept change and try those changes... and then [those middle managers] went in and created a big mess and made these [frontline staff] feel buried again... ” (Middle Manager, Site N Interview 8)

Note: These quotes are illustrative of the themes we found across sites.

<sup>a</sup>See text for definition.

gain or maintain involvement from staff and successfully guide the project. They synthesized the lessons learned from the project and identified generalizable themes or best practices that could be applied to future projects. For example, middle managers learned the importance of keeping the team involved on all aspects of the project instead of having a coach direct every step.

They also recognized the difficulty of pulling staff away from their clinical duties for extended periods of time, instead finding that a shorter or just-in-time training was more successful.

**Distinguishing expressions.** Two themes emerged that exhibit the differences between middle managers in high and low change potential sites.

**Participation in organizational or clinical improvement innovations.** The first theme was middle manager participation in organizational or clinical improvement innovations. In the high sites, middle managers identified problem areas in the medical center and made suggestions for improvements to remedy the issue. In addition, they participated in or facilitated improvement initiatives to resolve the process issues in the organization. For example, in one site middle managers discovered a duplication of efforts in the medical center and participated in an improvement project that streamlined the process and eliminated that duplication.

**Garnering staff involvement.** The second distinguishing theme between high and low change potential sites was garnering staff involvement. Middle managers in the high sites recognized the importance of soliciting improvement ideas from their staff; those that are closest to the work being targeted for improvement. Middle managers often solicited ideas through the use of suggestion cards with which the frontline staff could submit their ideas. In one high site, those ideas were discussed as a group twice a week, with middle managers encouraging staff to submit their own ideas. This in turn empowered the staff to participate in improvement innovations.

For staff members that resisted improvement work, middle managers in the high change potential sites tried to determine the core reason for lack of participation. For example, middle managers discovered that many frontline employees wanted to participate in improvement projects but could not afford the time with their competing clinical priorities. Some frontline employees were disinterested because they saw a particular improvement methodology as a passing fad, and others were not yet provided with needed training and thus were not ready to participate in a project.

### **Strategy/Day-to-Day Activity Mediation**

Strategy/day-to-day activity mediation according to the Birken et al. (2012) framework is identifying tasks required for improvement capability activities, giving employees the tools necessary to implement innovation.

**Common expressions.** We found three emergent themes that were present across all sites.

**Training.** The first theme was training. Middle managers in all sites provided training to educate their staff on how to carry out improvement work in the facility. Training pertinent to the implementation of improvement work was provided in many forms, including online and in person.

**Coaching.** A second theme that emerged across all sites was coaching. Middle managers encouraged the use of improvement tools (e.g., process mapping or value stream mapping) and coached their staff on how to effectively utilize those tools. For example, middle managers would assign tasks after staff received training and then provide feedback and support related to those tasks in order to encourage staff learning. This method of coaching ensured that staff understood how to implement the improvement tools in their own work.

**Providing resources and support.** Lastly, middle managers at all sites provided resources and support to staff to ensure that they had the resources and knowledge needed to complete a project. Examples of how provision of resources and support differed in high and low change potential sites are given below.

**Distinguishing expressions.** Although the themes above were present in all sites, the ways in which middle managers embodied those themes varied.

Middle managers in high change potential sites were found to incorporate examples of relevant improvement work into trainings. This was done by asking staff members to bring real issues they are facing in their department and then creating improvement projects to address those issues. In addition, middle managers facilitating training at these sites cited successful improvement projects during training to give staff members a better understanding of how improvement work can be carried out in their facility. In contrast, low change potential sites reported middle managers adapting the curriculum to meet the needs of staff members but did not mention utilizing real department issues for improvement projects or discussing other successful projects from the facility.

Middle managers in high sites coached staff until they were ready to use tools on their own, whereas low sites did not. For example, middle managers in high OTM sites met with staff frequently to talk about issues staff members may be having with their improvement work, clarified questions, and encouraged continued use of improvement work. In addition, middle managers at high OTM sites worked closely with staff members to address barriers they were facing and followed up in a timely manner with suggestions on how to address any barriers and issues staff encountered. This level of support was not as prominent at low OTM sites.

**Encouraging independent thinking among staff.** The final emergent theme pertaining to strategy/day-to-day mediation, encouraging independent thinking among staff, was present only in high change potential sites. Middle managers in these sites were found to foster staff members' independence

by not just giving them solutions to problems but also working with them to improve the process. By doing this, middle managers encouraged staff to use the knowledge gained in training to solve the issues they were facing and empowered them to work more independently in the future.

### **Selling Innovation Implementation**

Birken et al. (2012) define selling improvement capability activities as justifying innovation implementation, encouraging employees to consistently and effectively use innovation. Five common themes emerged across all sites, although there were distinguishing expressions of those themes by middle managers in high and low change potential sites.

#### **Common expressions.**

**Facilitating staff buy-in of innovative practices.** Middle managers at all sites facilitated staff buy-in of innovative practices. Middle managers described and provided evidence of the utility of an innovation in order to achieve staff buy-in. Examples included holding meetings to educate staff on an improvement intervention or demonstrating hands-on use of the intervention and associated processes in order to ensure staff buy-in.

**Facilitating effective use of innovative practices.** Facilitating effective use of innovative practices emerged as a theme across all sites, with middle managers providing guidance on the application of an adopted innovation. Middle managers revisited key points and goals of training with staff and provided instruction to reinforce the use of improvement tools.

**Creating the sense that improvement work is an expectation.** Middle managers at all sites created the sense that improvement work was an expectation. Middle managers set this expectation by explicitly stating improvement work in employee job descriptions, holding people accountable for assigned tasks and protecting time for improvement initiatives.

**Providing support of the innovations.** In addition, middle managers sold innovative practices by providing support of the innovations. Interviewees reported that middle managers were generally supportive of and willing to assist with improvement initiatives. For example, at one site, interviewees felt middle managers facilitated individuals' growth as clinicians and care providers and were open to ideas for improvement.

**Providing encouragement for staff to use innovative practices.** Finally, middle managers across all sites provided encouragement for staff to use innovative practices. Encouragement from middle managers to utilize innovations was apparent through staff involvement in training programs and the use of incentives such as awards or financial compensation.

**Distinguishing expressions.** Although middle managers in both high and low change potential sites exhibited all five themes pertaining to *selling innovation implementation*, there were notable differences in how their behaviors manifested.

High change potential sites more consistently utilized middle managers as facilitators of improvement work with multiple managers across service lines promoting improvement initiatives. For example, one site with high change potential had many service chiefs across several service lines engaged in and promoting Improvement Capability Grant activities.

Middle managers at high OTM sites also used more explicit, standardized structures and processes (e.g., improvement committees, management guidance teams, regular meetings) to facilitate staff buy-in and effective use of innovations. In contrast, although low change potential sites showed evidence of encouraging staff to use innovations, some employed punitive measures to enforce these efforts, resulting in less staff buy-in.

Lastly, interviewees from low change potential sites reported more barriers (as compared to high change potential sites) associated with lack of successful selling of innovation implementation. These barriers resulted in inadequate staff buy-in and ineffective use of innovations.

## **Discussion**

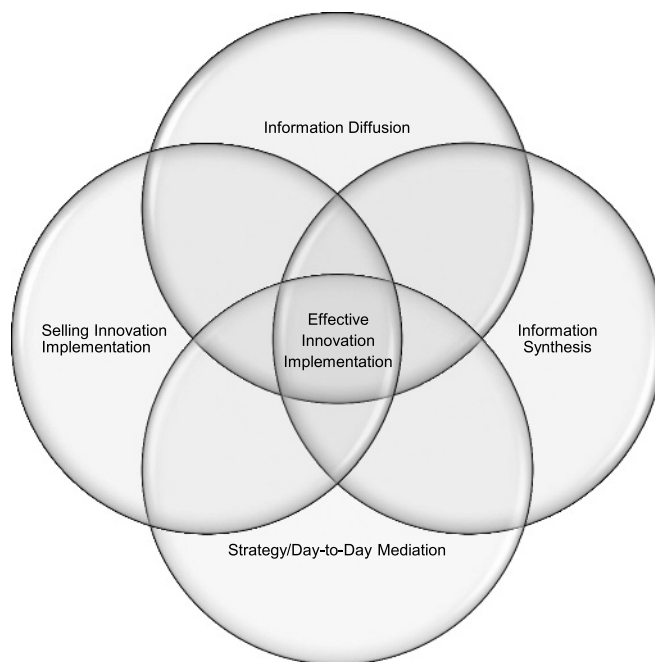
This study expands the theory of middle managers' role in health care innovation implementation developed by Birken et al. (2012) by adding to the empirical base and identifying 14 emergent themes representing specific ways in which middle managers express their commitment to improvement capability. The study also contributes to theory by increasing our understanding of the specific roles of organizational context in that behavior.

Although each emergent theme is distinct, they are also interrelated. We found multiple areas where the components of middle managers' commitment to implementation of innovation drew on each other. For example, in order to sell innovation implementation to frontline staff, middle managers were influenced by synthesis and diffusion of information as well as meditation between the strategic and day-to-day tasks necessary to implement innovation. Another example prominent in our data was that in order for middle managers to diffuse information to staff they had to assess strategic and day-to-day tasks required for implementation, synthesize the information about implementation, and concurrently utilize selling of the implementation. Preliminary analyses of interview passages coded for multiple themes support these examples. Building on Birken and colleagues theory, we posit that managers' influence is most effective when these components and our underlying emergent themes build on each other and do not occur in isolation (see Figure 1). Future research can be designed to test and further explicate these relationships.

We also found that, within the emergent themes, middle manager behavior was influenced by organization-wide implementation policies and practices. Although the general finding of links between behavior and context was not

Figure 1

## Interrelatedness of the components of middle managers' commitment to implementation of innovation



unexpected, our analyses provide new details about those dynamics. On the one hand, middle managers in all sites exhibited behaviors that facilitate the uptake of innovative practices and building of an improvement culture, a finding that has important implications for practice. For example, middle managers in all sites communicated pertinent information about organizational improvement efforts and culture to staff and provided staff with training related to those efforts.

However, middle managers in high change potential medical centers stood out from those in low change potential sites on a number of the themes identified. In contrast with middle managers in low change potential sites, these middle managers generally took more initiative and were more interactive in carrying out the 14 emergent themes. These middle managers go a step further in interactions with staff, taking the initiative to support new practices and to engage staff in the change efforts. Communication with staff was more active, interactive, and informal, with an emphasis on being multidirectional. Middle managers in these high change potential sites encouraged independent thinking in staff, while at the same time encouraging them to bring real improvement problems forward. These middle managers not only train staff in using improvement tools but also mentor and coach them with real improvement-related examples until they fully understand and are ready to use these tools and skills. In addition, these middle managers

serve as facilitators of improvement work, utilizing explicit structures and processes to facilitate staff buy-in and effective use of innovations. One component of this facilitation is working closely with staff to address barriers to improvement. These middle manager actions appear to both facilitate implementation and reduce barriers to change and, thus, offer promising practices for middle managers seeking to facilitate the implementation of innovative improvement practices, as discussed in Practice Implications.

To look more closely at organizational influence on the distinguishing behaviors of managers in high and low change potential sites, we examined them in relation to the drivers of organizational change defined in the OTM. Organizations with high change potential scores are characterized by senior managers who support and are personally involved in improvement activities; in improvement efforts that are clearly aligned with organizational priorities and with resource and accountability systems; and where staff at all levels are engaged, knowing how their work contributes to the larger organization and actively participating to improve the organization. Our findings of more active middle managers in high change potential sites who are comfortable with and skilled in facilitating improvement are consistent with these organizational characteristics. First, in an organization with an improvement culture, there is an expectation that change is possible and that working to improve is expected and rewarded. Both middle managers and frontline

staff are used to working in this way and working with each other. Thus, we would expect not only that middle managers will be more active in their commitment to improvement but also that staff will be willing to participate and more likely to buy-in to the new practice—a frequent barrier in low change potential sites. Second, in an organization with strong leadership direction and support for improvement and with aligned resources and accountability, improvement and innovation are linked to the priorities and management structures of the medical center. Thus, we would expect that middle manager implementation activities will be supported by reporting structures, resource allocations, and policies that provide lines of communication and tools to facilitate their improvement efforts, such as protected time for staff to work on improvement activities—mentioned often in low change potential sites as a barrier to staff involvement. Although we offer promising practices in this article specifically for middle managers, our findings of the strong link between active middle manager behavior and a larger organization context with high change potential offer insights about broader facilitators for implementing innovations and building improvement capability. In addition, although the study has shown a link between organizational context and middle manager behaviors, organizational context by itself should not rule out middle managers in all organizations taking these promising practices into consideration.

## Limitations

Our study was not without limitations. Like most observational studies, we are limited in our ability to assert causality. However, the larger evaluation is based on data from a span of 4–5 years, with detailed reporting of middle manager behaviors, which allow us insight into the middle manager's role in the organization. As mentioned previously, the themes and promising practices identified are interrelated and can often be influenced by factors outside of middle manager's control.

## Practice Implications

Ultimately, our study identified 14 practical promising practices, summarized in Table 4, which may help middle managers in their efforts to implement innovations. Our study was based solely on data collected from the VA. Although this setting contains several unique characteristics, it also shares commonalities with private health care systems, including the middle manager's role in the organization. It is because of these similarities that our findings are generalizable to a larger audience. By focusing on these promising practices, middle managers may be able to increase their effectiveness in implementing new improvement practices in their organization.

These practices were identified by comparing and contrasting themes identified in the high and low change potential

**Table 4**

### Promising practices for middle managers

- Communicate in ways that are informal but clear, direct, transparent, multidisciplinary, and multidirectional (Info Diffusion).
- Use innovative electronic tools and visual data in order to convey real-time information to their staff (Info Diffusion).
- Analyze where an improvement initiative broke down and seek a solution so that the problem is not repeated in the next project (Info Synthesis).
- Seek out and encourage improvement ideas from frontline staff and individuals that are closest to the work, which helps create buy-in from staff (Info Synthesis).
- Identify the root cause of lack of engagement from frontline staff with improvement innovation and take action to address the core issues to facilitate buy-in (Info Synthesis).
- Tie training with specific projects in the facility to encourage a stronger understanding of improvement methodology and coach staff until they are ready to implement improvement tools on their own (Strategy/Day-to-Day Activity Mediation).
- Support staff members by ensuring they have the knowledge and resources needed to implement improvement implementation and address any barriers staff encounter (Strategy/Day-to-Day Activity Mediation).
- Encourage staff to utilize knowledge gained in training to solve issues independently (Strategy/Day-to-Day Activity Mediation).
- Utilize their own training and consistently serve as facilitators/champions of quality improvement (Selling Innovation Implementation).
- Utilize established processes (e.g., monthly meetings) as venues to provide staff with updates and results, and to refresh and review key points and goals of training and other quality improvement initiatives (Selling Innovation Implementation).
- Encourage and support staff participation in quality improvement initiatives through training (e.g., process improvement training) and use of incentives (e.g., awards) (Cross-cutting).
- Use rounds to convey important information to their staff. Rounding not only allows for diffusion of information but additionally allows Middle Managers to synthesize, strategize, and sell the information (Cross-cutting).
- Hold events or forums specific to the innovation in order to convey important information to staff (Cross-cutting).
- Strive to build a culture of improvement among staff where quality improvement is an expectation (Cross-cutting).

sites, which suggests that they may be easier to accomplish in organizations with cultures and structures that are supportive of change. At the same time, however, the promising practices are specific enough to benefit middle managers in most organizations. Some can be implemented independently within the managers' units and, through successful application, may potentially be used to leverage broader change in the organization. In addition, these promising practices may inform senior leaders of areas for improvement when guiding middle managers in improvement efforts.

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