

C L I N I C A L M A N A G E M E N T

extra

Contextual Facilitators of and Barriers to Nursing Home Pressure Ulcer Prevention



Christine W. Hartmann, PhD • Research Health Scientist • Center for Healthcare Organization and Implementation Research, Bedford Veterans Affairs Medical Center • Bedford, Massachusetts • Research Associate Professor • Health Law, Policy, and Management • Boston University School of Public Health • Boston, Massachusetts

Jeffrey Solomon, PhD • Research Health Scientist • Center for Healthcare Organization and Implementation Research, Bedford Veterans Affairs Medical Center • Bedford, Massachusetts

Jennifer A. Palmer, PhD • Health Science Specialist • Center for Healthcare Organization and Implementation Research, Bedford Veterans Affairs Medical Center • Bedford, Massachusetts

Carol VanDeusen Lukas, EdD • Clinical Associate Professor • Department of Health Law, Policy, and Management • Boston University School of Public Health • Boston, Massachusetts

All authors, staff, and planners, including spouses/partners (if any), in any position to control the content of this CME activity have disclosed that they have no financial relationships with, or financial interests in, any commercial companies pertaining to this educational activity.

To earn CME credit, you must read the CME article and complete the quiz and evaluation on the enclosed answer form, answering at least 13 of the 18 questions correctly.

This continuing educational activity will expire for physicians on May 31, 2017, and for nurses on May 31, 2018.

All tests are now online only; take the test at <http://cme.lww.com> for physicians and www.nursingcenter.com for nurses. Complete CE/CME information is on the last page of this article.

This work was supported by the Quality Enhancement Research Initiative of the Health Services Research and Development Service of the Veterans Affairs Office of Research and Development [I21HX001008-01]. The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the US Government.

PURPOSE:

To present findings of a study of institutional factors related to pressure ulcer (PrU) prevention in Veterans Health Administration nursing homes.

TARGET AUDIENCE:

This continuing education activity is intended for physicians and nurses with an interest in skin and wound care.

OBJECTIVES:

After participating in this educational activity, the participant should be better able to:

1. Identify the study's design, process, and purpose.
2. List the factors pertaining to sites with improving performance.

ABSTRACT

OBJECTIVE: Important gaps exist in the knowledge of how to achieve successful, sustained prevention of pressure ulcers (PrUs) in nursing homes. This study aimed to address those gaps by comparing nursing leadership and indirect care staff members' impressions about the context of PrU prevention in facilities with improving and declining PrU rates.

SETTING: The study was conducted in a sample of 6 Veterans Health Administration nursing homes (known as community living centers) purposively selected to represent a range of PrU care performance.

DESIGN AND PARTICIPANTS: One-time 30-minute semistructured interviews with 23 community living center staff were conducted. Qualitative interview data were analyzed using an analytic framework containing (a) a priori analytic constructs based on the study's conceptual framework and (b) sections for emerging constructs.

MAIN RESULTS: Analysis revealed 6 key concepts differentiating sites with improving and declining PrU care performance. These concepts were (1) structures through which the change effort is initiated; (2) organizational prioritization, alignment, and support; (3) improvement culture; (4) clarity of roles and responsibilities; (5) communication strategies; and (6) staffing and clinical practices. Results also pointed to potential contextual facilitators of and barriers to successful PrU prevention.

CONCLUSIONS: Leadership's visible prioritization of and support for PrU prevention and the initiation of PrU prevention activities through formal structures were the most striking components represented at sites with improving performance, but not at ones where performance declined. Sites with improving performance were more likely to align frontline staff and leadership goals for PrU prevention.

KEYWORDS: nursing home, pressure ulcer, qualitative research, US Department of Veterans Affairs

ADV SKIN WOUND CARE 2016;29:226-38.

INTRODUCTION

Studies show that pressure ulcer (PrU) rates in US nursing homes remain high,¹ despite 30 years of prevention guidelines. Pressure ulcer prevention is of particular concern in nursing homes, because residents stay for long periods and risk being less mobile. Many approaches to PrU prevention exist, as a number of recent reviews²⁻⁴ and studies⁵⁻⁷ indicate. Quality improvement in nursing homes has also been shown to have some effect on resident outcomes.⁸ Less is known about how to achieve successful and sustained implementation of PrU prevention approaches.^{3,4}

In 1 study, the reported use of more guideline-recommended practices and interventions, for example, was not higher at facilities with lower versus higher PrU prevalence rates.⁹ Simply emphasizing PrU risk assessment and grading are also unlikely, on its own, to improve outcomes.¹⁰ The Institute of Medicine recommendations for changing practices, such as PrU prevention, include improving staff training and empowerment, access to resources, and implementing quality improvement processes.¹¹

Contextual factors associated with nursing home PrU prevention implementation success may include a high level of nursing leadership and management involvement, high participation of quality improvement personnel, having internal champions, and the responsible team being open to redesign.¹² These factors align with factors important to other types of improvement initiatives implemented in nursing homes. The training of supervisors and administrators in addition to direct care staff was critical in a successful mouth care program,¹³ for example, and management support and integration of learning into job descriptions were key factors in a mental health learning initiative.¹⁴ Not all facilities, however, are able to embrace complexity and align the necessary factors to deliver high-quality preventive care.^{6,12,15} What differentiates the better performing outliers from the rest is not well understood.

Specifically regarding PrU prevention, there is an important gap in the knowledge of how to implement successful programs, namely, understanding how local conditions or context impacts their success or failure.³ Pressure ulcer prevalence, for example, has been shown to be associated with staff cohesion and the presence of self-managed teams,¹⁶ but healthcare professionals know little about the specific mechanisms. A recent small study of interviews with registered nurses (RNs), licensed vocational nurses, and nursing assistants at 2 facilities began to address current knowledge gaps by identifying individual and organizational factors potentially impacting PrU prevention care.¹⁷ The broader perspective of indirect care staff, who influence the adoption and implementation of quality improvement initiatives,¹⁸⁻²⁰ was included in that study, and it is a perspective demanding more in-depth understanding. Although direct care staff provide the majority of hands-on care in nursing homes, indirect care staff, such as RNs and directors of nursing, provide the majority of leadership that influences the day-to-day provision of the care.²¹

The study reported here thus expands current knowledge by comparing a larger sample of indirect care staff impressions of PrU prevention at nursing homes selected to represent a range of PrU care performance. Sites were selected from a large longitudinal sample within the Veterans Health Administration (VHA). The VHA is one of the largest integrated healthcare systems in the United States and includes 134 nursing homes (known as

community living centers [CLCs]) that are part of the greater VHA medical center system.

CONCEPTUAL FRAMEWORK

Pressure ulcer prevention in nursing homes is complex, involving coordinated practices and systems of care. It requires individualizing care to the unique needs of each resident and appropriately addressing each factor that places the resident at increased risk. Yet care must also follow systematic routines, ensuring that all at-risk individuals are repositioned at regular intervals day after day. And this all must be coordinated through ongoing communication among the many disciplines involved in prevention, within a complex organizational context.

The implementation of PrU prevention is thus dependent not only on the behavior of individuals but also on their roles within the nursing home system of care and may be affected by many factors in the larger organization. The authors used a model of organizational change as their conceptual framework, the Organizational Transformation Model (OTM).^{22,23} The OTM guided the data collection, as well as the analysis of organization context and its associations with quality of care as indexed by PrU development rates. The model was developed in the context of large-scale organizational transformation. It identifies 5 interactive elements as critical to successful change: (1) impetus to transform, (2) leadership commitment to quality, (3) improvement initiatives that actively engage staff in meaningful problem solving, (4) alignment to achieve consistency of organizational goals with resource allocation and action at all levels of the organization, and (5) integration to bridge traditional intraorganizational boundaries within individual components.²² The model has also been tested in more focused efforts to improve evidence-based practices and implement innovative programs.^{23,24}

The OTM elements drive change by affecting components of the complex organization in which change efforts take place. If CLCs are strong in 1 or more of these elements, they may provide a receptive environment and may therefore be more successful in developing and sustaining effective PrU prevention initiatives. The OTM provides common categories needed for comparative case studies but is also designed to capture local variation.

DESIGN AND METHODS

This article focuses on the qualitative portion of a mixed-methods study. The design and methods of the study's quantitative arm that investigated CLCs' PrU development rates over time using a secondary analysis of Minimum Data Set (MDS) data are reported elsewhere.²⁵ Prior approval for this study was obtained from the relevant institutional review boards, which granted waivers of written informed consent. The CLC served as the unit of analysis for this study.

Site Selection

In line with established qualitative methodology, a purposive sampling strategy was used to provide informative comparisons between the experiences of CLCs performing well and those performing not as well on PrU prevention. For sampling purposes, the 109 CLCs for which data were available in the quantitative arm of the study were ranked on smoothed risk-adjusted PrU development rates using MDS data from the end of 2007 to the beginning of 2012; specifics are detailed elsewhere.²⁵ Briefly, the authors developed a risk adjustment model using data from 105,274 MDS observations (ie, data from assessments of residents' PrUs) to predict the likelihood of PrUs and used a Bayesian hierarchical model to calculate smoothed risk-adjusted rates of PrU for each CLC. This model adjusted for differences in the accuracy of PrU development rates of different size facilities. All 109 CLCs were ranked.

The CLCs for the *qualitative* arm were purposively selected from the rankings to represent a range of performance according to the cross-sectional and longitudinal trends as measured by model coefficient per year, as well as slope (positive or negative) and r^2 (>0.7) across 4 years. Sample size was dictated by study resources. Six CLCs were selected to match 1 of 6 predetermined performance criteria (Table 1). Facility size was also considered when choosing possible sites—sites with fewer than 200 assessments across the 4 years were excluded as potential outliers because a small number of assessments could bias the ranking results (ie, the selection criteria). Site representatives were contacted via e-mail. All initially contacted sites agreed to participate. At each of the 6 sites, 2 units were selected for participation in the interviews. Table 1 presents the characteristics of the CLCs in the final sample.

Staff Interviews

Using available VHA e-mail lists, researchers e-mailed potential CLC indirect care staff participants, that is, staff in managerial positions, at the CLCs in the final sample. The specific job categories targeted were leadership (ie, CLC medical director/director of nursing), wound care nurse, nurse manager, and RN, acknowledging that individuals in any of these positions might also provide direct care. These job categories were chosen because of their relevance to PrU prevention efforts.^{6,12} Multiple job categories were selected to aid in data triangulation. A telephone interview was scheduled with those who responded. Interviewers were blinded to site performance. Interviews lasted approximately 30 minutes. Verbal informed consent was obtained prior to each interview. Data collection took place from March to August 2014.

Questions in the semistructured interview guide explored (a) development of local PrU policies, (b) leadership commitment and support, (c) consistency of goals, and (d) organizational

Table 1.
PARTICIPATING COMMUNITY LIVING CENTER (CLC) CHARACTERISTICS

CLC	Selection Criterion	Performance Group	Region of Country	Average Daily Census	No. of Units	Services Provided in Each Participating Unit	No. of Wound Care Specialists Working in the CLC	CLC Leadership Turnover in Past 3 y
A	A site near the middle whose performance steadily improved	Improving	Midwest	75	3	Unit A: long stay Unit B: long stay and short stay (including hospice)	2	None
C	A relatively steadily high-performing site across the 4 y	Improving	Midwest	145	9	Units A and B: long stay	1	Medical director 1× Director of nursing 1×
F	A site with a good performance in the beginning of the 4-y period that steadily improved	Improving	South	120	2	Unit A: long stay (including hospice) Unit B: long stay and short stay	1	None
B	A relatively steadily low-performing site across the 4 y	Declining	Midwest	125	5	Units A and B: long stay and short stay	1	Medical director 1× Director of nursing 1×
D	A site with a poor performance in the beginning of the 4-y period that steadily declined	Declining	South	80	8	Unit A: long stay Unit B: short stay	1	Director of nursing 1×
E	A site near the middle whose performance steadily declined	Declining	Northeast	87	2	Unit A: long stay (including hospice) Unit B: long stay and short stay	2	Director of nursing 2×

priorities. Questions also addressed the 5 previously described elements of the OTM framework. The authors tailored interview guides to the specific roles and responses of participants to ensure the authors captured the most salient content. Notes were taken during the interviews. Interviews were also recorded. Recordings were reviewed and relevant sections transcribed to augment the notes. One interviewee declined to be recorded, so only detailed notes were taken. Characteristics of the 23 nursing staff members who participated in the interviews are summarized in Table 2.

Analysis

The authors' qualitative analytic method combined development of a structured narrative to facilitate cross-site comparisons with a later-stage unblinding of original, quantitative selection criteria. It thus combined rigorous (open-ended, in-depth) qualitative interpretation using an analytic framework with a quantitative assessment.^{24,26}

Table 2.
PARTICIPANT CHARACTERISTICS

	No. of Participants (Total n = 23)
Job Type	
Registered nurse ^a	12
Wound care nurse	7
Restorative care nurse	1
Director of nursing	3
Tenure in Position^b	
0–3 y	11
4–6y	3
7–9 y	7
≥10 y	1

^aIncludes registered nurses and nurse managers.
^bMissing data for 1 participant.

Interviewers created a detailed summary of each interview, including direct quotes, using the notes and transcriptions.²⁷ Next, they completed an interview-specific analytic matrix based on the summary. The matrix contained a priori analytic constructs based on the OTM and included additional sections that allowed for new constructs to emerge and enabled summarization of overall impressions. The main OTM analytic constructs were (1) impetus to change, (2) processes used to make changes in PrU prevention practices, (3) prevention practices used on the unit, and (4) CLC and/or medical center organizational context. Each of these contained numerous subcategories. After each site's interviews were completed, the entire research team met weekly to review the individual interview matrices to develop a single matrix of site-specific evidence consisting of summaries and direct quotes. Audio recordings were reviewed when questions arose from meeting discussions.

When consensus for all site-level matrices was achieved among investigators, matrices were finalized, and research team members were unblinded regarding site performance. Team members used multiple meetings to review the completed site-level matrices to identify differences and similarities between sites with improving or declining PrU development rates. They referred to the interview-level matrices, interview recordings, and the quantitative site selection data as necessary to improve understanding of the qualitative findings. Key concepts that differentiated sites emerged from this iterative comparison and were discussed. The OTM analytic constructs provided an initial framing for these discussions, but the process was grounded in the data. Descriptions of the key concepts were developed to accurately portray the supporting data.

RESULTS

The Figure gives a graphic depiction of the quantitative data on which site selection was based. It highlights the performance of the sites, which was the basis for the 2 groupings used in the qualitative data analysis process. It specifically indicates the 6 sites' improving or declining PrU development rates based on their smoothed risk adjusted rates over the 4-year period. Specifically, sites A, F, and C had significantly improving PrU performance over the period (ie, rates that decreased over time and a negative model coefficient [β]), whereas sites D and E had statistically significantly declining PrU performance (ie, rates that increased over time and a positive model coefficient [β]); site E, while also declining, did not do so significantly.

Six key concepts differentiated sites with improving and declining PrU performance. These concepts also identified potential facilitators of and barriers to successful PrU prevention. They were (1) structures through which the change effort is initiated; (2) organizational prioritization, alignment, and support;

(3) improvement culture; (4) clarity of roles and responsibilities; (5) communication strategies; and (6) staffing and clinical practices. In practice, these are interrelated and overlapping concepts. The authors provide descriptive summaries of the main features of each key concept below. Table 3 shows selected quotes describing each concept.

Structures Through Which the Change Effort Is Initiated

The formal structures (eg, committees, teams) through which a nursing home acts to facilitate change can support PrU prevention. Both improving and declining sites mentioned initiating various PrU prevention practices. What differentiated the 2 groups of sites was the extent to which these originated within formal organizational structures designed to support change efforts and the extent to which the efforts extended beyond a single CLC unit. At the improving sites, efforts tended to begin within an organized structure. Participants frequently cited the interdisciplinary CLC PrU committee, the CLC quality improvement team, and the CLC director of nursing as providing the impetus for change.

Activities and relevant data collection were often orchestrated and monitored through these formal channels and tended to span multiple units in the CLC. For example, participants at 1 site indicated that a number of CLC-wide initiatives originated from the interdisciplinary PrU committee within the past 2 years, including a trial of breathable briefs, switching residents from cloth to disposable briefs, and a protocol for incontinence management. Initiatives based on ideas originating from direct care staff were also mentioned by participants at improving sites. These ideas were indicated as having aligned with and therefore having been quickly incorporated into the existing organizational structures. When implemented, they were either systematically piloted on a small scale or implemented across all units at once.

The most significant difference between the site groups was that at the 3 sites with declining performance, participants rarely mentioned initiatives originating within the organization's formal structures. Instead of being described as main and powerful drivers of change, formal structures were often mentioned in a secondary fashion. Transformation efforts at these sites were instead often driven by a wound care nurse or other nursing staff member. Individually conceived ideas were also sometimes brought to a committee or leadership, which then led to an approach based on the idea. At 1 site, for example, the wound care nurses brought the idea of establishing a new bundle of skin orders to the hospital-wide PrU committee, which then led the initiative. Two wound care nurses at another site spearheaded a project to train all nurses in PrU documentation and worked with the skin

Table 3.
INTERVIEW ANALYSIS DOMAINS, EXAMPLE INTERVIEW QUESTIONS, MAIN DIFFERENTIATING SITE CHARACTERISTICS,
AND REPRESENTATIVE QUOTES

Domain	Example Interview Questions	Main Characteristic(s) Differentiating Sites with Improving and Declining Performance	Representative Quotes	
			Improving Site	Declining Site
Structures through which the change effort is initiated	<ul style="list-style-type: none"> • Who led any changes in pressure ulcer (PrU) prevention practices or routines in the past 1 to 2 y? • Was there/is there a PrU improvement team in the unit/community living center (CLC)? How has the team operated thus far? • What roles and responsibilities do teams and individuals have in PrU prevention? 	<ul style="list-style-type: none"> • Extent to which PrU prevention practices originated within formal organizational structures • Extent to which PrU prevention efforts extended beyond a single CLC unit 	<p>“Our PrU rates had been climbing, and we, the PrU team, met and discussed what we could do to make them go the other way.... We decided on the interventions we wanted to put in place.... But when we started to look, they [the interventions] weren’t always being implemented on the floor.... So we decided we’d make rounds once a month. We never told them [all the CLC units] when we were coming. We’d just show up on the floor, and we’d walk the floor. And we’d review the charts before we came.” (Site A, registered nurse [RN])</p>	<p>“The wound care nurse [led the effort to trial the use of wedge pillows on my unit].... I think [that trial happened] just because people were complaining that the pillows were too flat.... I don’t really know how to monitor it other than when I make rounds I notice that it’s there and it’s being used.” (site D, RN)</p>
Organizational prioritization, alignment, and support	<ul style="list-style-type: none"> • How important do you think PrU prevention is here? Is it a priority in the CLC? Is it a priority in the medical center? Why do you think that? • What priority does leadership (ie, CLC, hospital) give PrU prevention? What do they do that makes you think that? How consistent is leadership’s support/lack of support? • What does your medical center do to support PrU prevention as an organizational goal? What does your facility do to make staff members accountable for PrU prevention? What resources are provided to support PrU prevention throughout the organization? 	<ul style="list-style-type: none"> • Quantity and quality of organizational prioritization, alignment, and support regarding PrU prevention 	<p>“I have had no problems with [CLC and medical center] leadership at all. They have been just completely supportive when I go to them with any type of suggestion. They say go ahead and just do it.... One of us [the 2 wound care nurses] goes to morning report every day for a report on PrUs for the whole facility... and at that meeting, there are all the managers, so there’s a daily communication.” (Site C, wound care nurse)</p>	<p>“Honestly, I think medical center and CLC leadership say it’s important but don’t want to put the appropriate resources behind it. I think they don’t know exactly what they want or need, and they don’t necessarily listen.... Nursing administration in particular has been a roadblock to some of the prevention activities. It’s getting behind this and saying it’s important [that’s missing].” (Site B, wound care nurse)</p>

(continues)

Table 3.

INTERVIEW ANALYSIS DOMAINS, EXAMPLE INTERVIEW QUESTIONS, MAIN DIFFERENTIATING SITE CHARACTERISTICS, AND REPRESENTATIVE QUOTES, CONTINUED

Domain	Example Interview Questions	Main Characteristic(s) Differentiating Sites with Improving and Declining Performance	Representative Quotes	
			Improving Site	Declining Site
Improvement culture	<ul style="list-style-type: none"> To what extent are unit/CLC staff receptive to learning new practices? Are most staff comfortable with quality improvement? How are new practices around PrU prevention integrated into unit/CLC routines? How are they maintained consistently? To what extent does your facility coordinate PrU prevention across CLC units or other services? How is that coordination accomplished? 	<ul style="list-style-type: none"> Number and specificity of participant examples regarding quality improvement activities and culture 	<p>“One other thing that has come out of that big hospital-acquired PrU collaborative is that [my colleague] and I did pressure mapping of all of our bed surfaces. And this is kind of exciting, to understand the surfaces that are in our CLC.... What’s also going to come out of it [the collaborative] is that we want to put together a support surfaces committee. And I want that to be an interdisciplinary team, so we can be looking at when these mattresses’ lifetimes expire... We learned a lot when we did this pressure mapping. We went around and laid on these surfaces with the pressure mapping tool, and it really taught us a lot about the pressure that the patients receive from these mattresses.” (Site C, wound care nurse)</p>	<p>“I think they’re [staff are] pretty comfortable [with quality improvement initiatives. I don’t ever see anyone saying, ‘This is a bad idea.’” (Site E, RN) “Another problem is the punitive culture. It should be: ‘Why didn’t we get that up there?’ ‘Are you having a problem to turn people?’ It’s looking at systems problems. We try to do that but we’re inundated with other things going on.” (Site B, wound care nurse)</p>
Clarity of roles and responsibilities	<ul style="list-style-type: none"> How are roles and responsibilities [regarding PrU prevention] assigned? Are backup people available, and does everyone know who the backup is? How are temporary staff oriented to their roles and responsibilities? Does everyone generally have a clear idea of what they are responsible for? Is there a clear “go to” person, or people if you have questions about PrU care or prevention? 	<ul style="list-style-type: none"> Formality of nursing assistant role definition in relation to PrU prevention 	<p>“Any time they [nursing assistants] find a new wound, a new open area, a new scrape, a bruise, any change in the skin, they have to mark it in CareTracker, and they walk to the desk and tell the charge nurse, ‘We have found a change and we put it in CareTracker.’ ... We invite them [nursing assistants] into treatment team, and they give a report on every patient.... If they’re not there, we go out and get them.” (Site A, RN)</p>	<p>“Generally what happens is they [nursing assistants] usually will notify the RN and then—if need be—the RN notifies me. Or aides have stopped me and said, ‘Hey, Mr X needs this or that or the other thing.’ Or ‘I noticed this.’ Or, I washed him up today and I noticed this.” (Site B, wound care nurse)</p>
Communication strategies	<ul style="list-style-type: none"> How do members of the PrU prevention team communicate about PrU prevention? In what venues? 	<ul style="list-style-type: none"> Indication that communication practices can always improve 	<p>“My opinion about communication is that it’s never perfect. There are always going to be breakdowns.... We’ve tried various ways to improve</p>	<p>[No mention of communication improvement.]</p>

(continues)

Table 3.

INTERVIEW ANALYSIS DOMAINS, EXAMPLE INTERVIEW QUESTIONS, MAIN DIFFERENTIATING SITE CHARACTERISTICS, AND REPRESENTATIVE QUOTES, CONTINUED

Domain	Example Interview Questions	Main Characteristic(s) Differentiating Sites with Improving and Declining Performance	Representative Quotes	
			Improving Site	Declining Site
	<ul style="list-style-type: none"> • What helps staff communicate effectively about PrU prevention? What problems do you see that prevent effective communication? • How is information about PrU risk or changes in PrUs shared with the resident and his/her family? 		and communicate, and we're always making changes. Because I think communication is an ongoing thing. We have ideas, to improve it, and we try to institute some of those things." (Site A, RN)	
Staff and clinical practices	<ul style="list-style-type: none"> • Could you please walk me through your regular routine for PrU prevention? What would I see? What would you be doing? Who, if anyone, would you be working with? • Can you give me some examples of (1) interdisciplinary "skin rounds" or other multidisciplinary groups that work to prevent PrUs; (2) nonnursing staff being involved in PrU prevention? • Are there areas for improvement in PrU prevention? What do you see those as being? 	<ul style="list-style-type: none"> • Valence (positive or negative) given to PrU prevention staffing and clinical practices • Consistent assignment of the same nursing staff to the same residents 	<p>"It's easier with 2 [wound care nurses]. It's easier to respond promptly.... We are able to do more projects because there are more wound care nurses in the environment." (Site C, wound care nurse)</p> <p>"Most of the nursing assistants have the same residents all the time." (Site F, RN)</p>	<p>"One of our issues has to do with documentation. The documentation is poor.... And if they think they're going to get it [PrU prevention] done with 2 of us, just 2 of us [wound care nurses], I don't know how we can do it." (Site B, wound care nurse)</p> <p>[No mention of consistent assignment of staff to residents.]</p>

care committee to establish the release of an order set. These, however, were the exceptions. Staff-initiated projects were, in general, mentioned more frequently and were more likely to stay outside a formal structure and to focus on only 1 unit.

Organizational Prioritization, Alignment, and Support

Another key concept was how and whether PrU prevention fit into the priorities of the larger organization. Improving and declining sites differed on the extent to which PrU prevention was prioritized, aligned with other concerns, and received support. Overall, improving sites reported stronger and more uniform (1) CLC and medical center support for and prioritization of PrU prevention and (2) alignment of PrU prevention with CLC and

medical center goals, as indicated by the existence of resources, help overcoming barriers, and cross-unit coordination of activities. Participants at 2 of the improving sites, for example, gave many specific illustrations of CLC leadership and medical center support for PrU prevention, including adding new staff to help with prevention efforts and leadership participation in committees. Evidence at the third site was strong regarding CLC leadership support and resources as well; however, staff members were somewhat less specific regarding medical center support. Regarding prioritization, PrU prevention was noted as being prioritized at the CLC level at all 3 sites, yet evidence regarding medical center-level prioritization at all 3 was less frequent.

Evidence at the sites with declining performance was mixed. Participants at 1 declining site identified the CLC as having been

provided funds to buy new PrU prevention equipment, but said the site needed more PrU prevention supplies. Respondents at this site also indicated PrU prevention was not perceived to be an organizational priority. The CLC and hospital leadership at a second site were described as not providing the support needed or desired. Staff here also said they felt overburdened because of the loss of positions. Participants at the third site described CLC and medical center leadership as supportive and indicated PrU prevention was a priority, but respondents gave sharply conflicting evidence regarding how involved nurse managers were in PrU prevention and regarding the ease of obtaining PrU prevention supplies.

Improvement Culture

The existence and extent of a culture of improvement may help foster and support successful PrU prevention activities. The extent of cooperation and coordination among clinical staff around the goal of PrU quality improvement was relatively similar between sites with improving and declining performance. What differentiated the 2 site groupings was the number and specificity of examples participants gave regarding quality improvement activities and culture. Participants at 2 improving sites were very specific about the role of quality improvement culture in PrU prevention. Multiple interviewees described staff at these sites as receptive to change, learning, and quality improvement, giving detailed examples. Interviews at the third improving site did not generate much information about this component, although participants described nursing staff as being focused on quality improvement, for example, “at first it was difficult to get everyone on board with PrU prevention, but now more than 90% of staff are compliant.”

Participants at one of the sites with declining performance gave examples of PrU performance reporting and accountability methods. But participants at this site said nothing specific about quality improvement methods or culture, except for 1 respondent indicating that staff were “comfortable with it [quality improvement].” One of the other declining sites reported no quality improvement activities at the unit or CLC level. When asked about staff comfort with new initiatives, 1 respondent at this site said staff members were “fairly receptive” to learning new practices, and another said, “I don’t see people saying it’s a bad idea.” The third site described having a punitive culture where the wound care nurses were “inundated” by other things happening.

Clarity of Roles and Responsibilities

Successful PrU care requires staff members to understand their individual roles. Participants at all sites were clear about nursing responsibilities regarding PrU prevention. Specific roles for nurse managers, wound care nurses, RNs, licensed practical nurses, and nursing assistants were mentioned across all sites, with go-to persons clearly identified and PrU prevention processes described. Across the 2 performance groupings, there was a

mixture of evidence for RNs taking on PrU prevention roles. And in general, with the exception of 1 site with improving performance where nurse managers performed rounds, nurse managers also had less direct involvement in PrU prevention than did other nursing staff.

One factor, however, reliably differentiated the site groupings. At sites with improving performance, nursing assistants were described as having more formal and explicit roles in relation to PrU prevention than at the ones with declining performance. Nursing assistants at the improving sites were thus more likely to be described as actively involved in and taking the lead on PrU prevention.

Communication Strategies

Communication between and among staff about PrU prevention is a key component for successful prevention. Strategies for communication about PrU prevention exhibited some similarities across sites, such as providing verbal feedback and using paper or electronic methods to document information and share it between shifts. The most consistent difference between the 2 site groupings was that participants at sites with improving performance all mentioned that communication at their site was good but could always improve. Interviewees at these sites gave detailed descriptions of communication methods and simultaneously pointed out the room for improvement. Interviewees at the sites with declining performance focused only on the details of communication mechanisms and processes, sometimes pointing out a lack of or inaccurate communication about PrU prevention, but not mentioning that communication methods could in any way improve.

Staff and Clinical Practices

Staff practices and clinical practices can affect PrU prevention. Participants at all sites spoke about practices that had positive effects. Positive staff practices included good prevention teamwork, involvement of nursing staff in resident care planning, implementation of the same documentation processes across all units, having the same wound care nurse for all units, and regular staff education about PrU prevention. Positive clinical practices mentioned across sites were use of turning reminders, good pain management, not having residents in bed, and good prevention equipment.

Two factors reliably differentiated sites with improving and declining performance: (1) Participants at all improving sites mentioned that they followed consistent assignment principles, where the same nursing staff members are responsible for the same residents. They mentioned this as a beneficial PrU prevention practice, because it enabled nursing assistants to be “often the first to notice skin changes because they do activities of daily living and are changing the patients and see them on a daily basis.” This staffing principle was not mentioned at any of the declining sites. (2) Respondents at declining sites spoke more

about practices with a negative impact relative to those with a positive impact. Interviewees at these sites spent more time talking about staff not being proactive enough about prevention or feeling accountable for it. They also discussed poor documentation of ulcers.

DISCUSSION

Prior research in VHA nursing homes has shown generally low adherence to PrU prevention guidelines and significant performance variation among homes.²⁸ In the authors' analyses for this study's sample selection, they found that the performance variation continued. Taking advantage of this natural variation, the authors conducted semistructured interviews with staff from 6 CLCs representing a range of PrU prevention performance to identify contextual factors important in prevention. The authors found that "basic" PrU care was indicated as taking place across all 6 sites, whether they historically had improving or declining PrU rates. That is, participants from all sites were aware of the importance of PrU prevention, used a number of methods to educate staff about prevention, and implemented various PrU prevention techniques. This is consistent with Rapp et al's finding that reported adherence to recommended guidelines exceeded 60% at both high- and low-performing facilities.⁹ But the authors' analysis also revealed several contextual features that distinguished sites with improving performance and could be useful in designing future interventions.

What served to distinguish sites with improving performance was the magnitude and quality of the evidence for an element from this study's conceptual framework (OTM). In general, the strong presence of the OTM's 5 interactive elements signals an organization that values, supports, and is capable of aligned organizational change and improvement in a complex multifaceted setting. In the authors' study, evidence from improving sites indicated that staff at these sites, despite their improving performance on PrU prevention, also believed that performance was never perfect and that room for progress always exists, an awareness that was not indicated at the sites with declining performance. Improving sites also evidenced a greater impetus to transform, with a larger number of projects overall and more CLC-wide projects. More respondents at these sites indicated that leadership, particularly, but not limited to, the director of nursing, contributed to PrU initiatives by working together with other staff on committees and in teams. Staff at improving sites also gave more evidence regarding improvement initiatives that engaged staff in data-driven improvement. In addition, participants at these sites pointed to greater alignment of PrU prevention initiatives with resource allocation and action at all levels of the organization and to integration to bridge traditional boundaries, particularly by formally including nursing assistants in PrU

prevention. The authors do note that indications of the OTM elements at sites with declining performance were evidenced as well, as has been the case in previous studies using this framework.²²⁻²⁴ Support for these elements, however, was comparatively less frequent and less strong.

Recent VHA research by Dellefield and Magnabosco¹⁷ also identified potential contextual factors affecting sustainment of PrU prevention practices. Facilitating factors identified in Dellefield and Magnabosco's nursing study are consistent with parts of this study's findings, including the importance of supportive structures, teamwork and communication, and effective staff and clinical practices. The current study's in-depth investigation across a larger sample of sites and with a specific focus on indirect care staff, with the added dimension of distinguishing sites with historically improving and declining performance, expands upon prior findings and identifies potential contextual facilitators that could be incorporated in other settings.

The authors found a number of factors particularly salient to sites with improving performance: (a) formal structures that initiated change activities, (b) alignment to achieve consistency of organizational goals with resource allocation and action at all levels of the organization, and (c) integration to bridge traditional intraorganizational boundaries in a hierarchical organization. Several successful strategies used at these sites operationalized leadership's commitment to quality and are consistent with prior literature on nursing home leadership management style with quality of care.²⁹ Examples included leadership's active involvement in influential committees and teams that led PrU prevention and monitoring activities, the influence of these committees and teams, and the active role of nursing leadership in identifying and following up on initiatives.

At the sites with improving performance, participants also felt supported by leadership, through the addition of staff members and the procurement of supplies and equipment. Participants took this as evidence of the consistency of organizational goals. Initiatives at these sites were more likely to be focused on the CLC as a whole instead of on individual units. Quality improvement, with incorporation of input from all staff levels, including nursing assistants, was also more prevalent, indicating integration to bridge professional boundaries.

Consistent assignment of nursing staff to care for the same residents, although an intuitively appealing concept that is endorsed by various organizations,³⁰⁻³² still lacks conclusive evidence of its relationship to outcomes.^{33,34} The current study, although small, provides some support for the potential benefits of consistent assignment in helping prevent PrUs. Participants at all improving sites highlighted the benefits of this staffing practice. They emphasized the importance of having nursing assistants see the same residents' skin every day because this

enabled them to be the first to notice and report small changes in the skin before they became large problems.

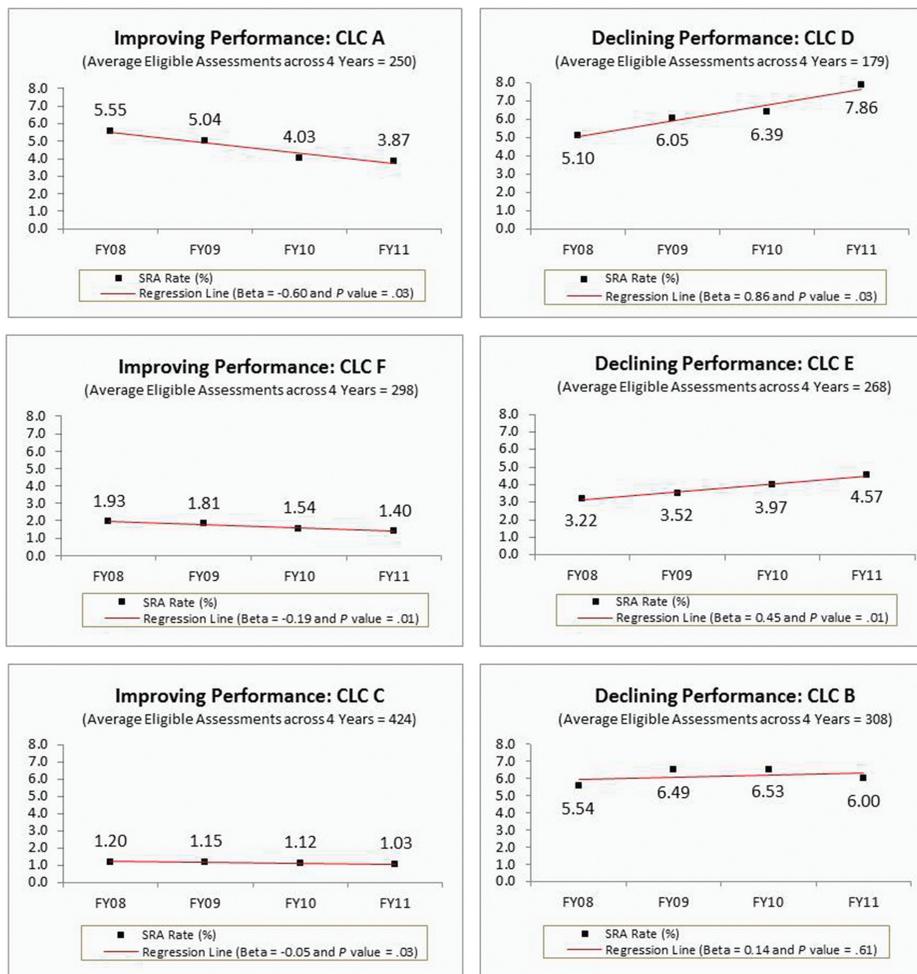
The Figure, based on the quantitative data from which the current study's sample was selected, shows participating sites' PrU prevention performance over the selection period and indicates median performance across all CLCs over that same period. One question that arose during the qualitative analysis discussions was whether the site in each grouping whose quantitative performance began closer to the median and then increased or decreased from there (ie, sites A and E) would differ in its qualitative results from the sites that began and remained distinctly higher or lower performing across the entire

time period. In the case of site E, the authors found no systematic differences in the qualitative data between it and the other sites with declining performance. Thus, the site's relatively good performance at the beginning of the study selection period did not "protect" it. Its participants' impressions aligned with those of participants from sites with PrU development rates above the median for the entire selection period.

Qualitative data for site A painted a slightly more nuanced picture. This site differed slightly from the 2 other sites with improving performance in the domains of organizational prioritization, alignment, and support and improvement culture. Site A also had a greater role for nurse managers in PrU

Figure.

SITES' SMOOTHED RISK-ADJUSTED PRESSURE ULCER DEVELOPMENT RATES DURING THE SELECTION PERIOD^a



^aModel used Minimum Data Set data from the last 3 months of 2007 through the first 3 months of 2012 to calculate rates during the 4 fiscal years; 25 median smoothed risk-adjusted (SRA) rates across all community living centers for the 4 time points were 4.1%, 4.3%, 4.1%, and 4.4%, respectively.

prevention than did other improving sites, as identified in the clarity of roles and responsibilities domain. Site A is identified earlier in this article as “the third site.” Specifically, staff at site A provided slightly less evidence about medical center support beyond the CLC for PrU prevention than did the other 2 improving sites, although staff at the site were very clear and positive about CLC leadership support for PrU prevention. And although staff at site A also did not give specific examples to illustrate quality improvement activities and culture, they noted that their site’s current focus on quality improvement had not always been the case. Numerous staff members spoke about the site having had poor PrU rates and “pretty scathing” inspection reports in the past. Therefore, the differences at site A possibly point to the site’s relatively new trajectory and an organization that in the past has not had a strong improvement culture aligned around its system priorities.

LIMITATIONS

Sites were selected based on administrative data from the end of 2007 to the beginning of 2012, and interviews started at the beginning of 2014. This was necessitated because VHA changed from MDS 2.0 to 3.0 in July 2012; as a result, no comparable PrU data were available after 2012. It represents a limitation, because there is a slight chance that a site’s performance may have worsened or improved in the intervening period, such that the site no longer met the criteria for which it had been selected. The authors specifically asked participants to speak about changes in PrU prevention care that had taken place in the past 1 to 2 years. This strategy elicited comments that aligned with the sites’ historical performance, although it may not have captured the full spectrum of changes.

The number of study participants varied by site. The sites with declining performance had fewer participants overall than did those with improving performance (9 vs 14), despite rigorous and similar recruiting methods. This discrepancy resulted in a potentially less rich picture of PrU prevention at the declining sites and may have obscured some successful prevention methods and facilitators. But every site’s wound care nurse was interviewed, to achieve parity across the interviews for this key job function, so large misrepresentations of sites’ activities are unlikely. Direct care workers (ie, nursing assistants), who are key in implementing much PrU care, were not, however, interviewed. This study’s focus on indirect care workers may thus present a better indication of PrU prevention practices than interviews with direct care workers would have done. Studies regarding nursing home staff impressions of safety climate, for example, show this to be the case.^{35,36} But this bias, if extant, would likely apply equally across all participating facilities and not greatly affect the distinctions between groupings

that emerged. Finally, as with all cross-sectional work, causal inferences cannot be drawn from these data. But results do point to associations that should be further explored.

CONCLUSIONS

This study highlights findings from a comparison of indirect care staff impressions of contextual factors affecting PrU care at facilities purposively selected to represent a range of PrU prevention performance. Results highlight numerous potential facilitators of and barriers to successful PrU prevention that have implications for nursing home quality improvement initiatives and more broadly for improving understanding of the dynamics of organizational change needed for high performance. The additional impact of leadership’s visible prioritization of and support for PrU prevention and the initiation of PrU prevention activities through formal structures were the most striking components represented at sites with improving, but not at those with declining, performance. Sites with improving performance were also more likely to evidence alignment of goals for PrU prevention.

PRACTICE PEARLS

- Pressure ulcer rates in U.S. nursing homes are high¹ despite existing guidelines and prevention approaches.
- Changing PrU practices may involve improving staff training and empowerment, access, to resources, and implementing quality improvement processes.¹¹
- Several factors may lead to greater PrU prevention implementation success, including a high level of nursing leadership and management involvement, high participation of quality improvement personnel, having internal champions, and the responsible team being open to redesign.¹²
- Improvement in PrU development rates may be influenced by these contextual factors that go beyond “basic” PrU prevention care.
- Pressure ulcer prevention may be improved by implementing continuous, data-driven quality improvement, supporting multiple PrU improvement activities, and enabling leadership (including but not limited to the Director of Nursing) to work with staff in committees and teams on the issue.
- It may also benefit from aligning PrU prevention initiatives with resource allocation and action at all levels of the organization and from bridging traditional boundaries, particularly through formal inclusion of nursing assistants in PrU prevention.

REFERENCES

1. Centers for Medicare and Medicaid Services. Nursing Home Data Compendium. 2013 edition. Washington, DC: Department of Health and Human Services; 2013.

2. Sullivan N, Schoelles KM. Preventing in-facility pressure ulcers as a patient safety strategy. A systematic review. *Ann Intern Med* 2013;158(5_Part_2):410-6.
3. Soban LM, Hempel S, Munjas BA, Miles J, Rubenstein LV. Preventing pressure ulcers in hospitals: a systematic review of nurse-focused quality improvement interventions. *Jt Comm J Qual Patient Saf* 2011;37:245-52.
4. Niederhauser A, VanDeusen Lukas C, Parker V, Ayello EA, Zulkowski K, Berlowitz D. Comprehensive programs for preventing pressure ulcers: a review of the literature. *Adv Skin Wound Care* 2012;25:167-88.
5. Shannon RJ, Brown L, Chakravarthy D. Pressure Ulcer Prevention Program Study: a randomized, controlled prospective comparative value evaluation of 2 pressure ulcer prevention strategies in nursing and rehabilitation centers. *Adv Skin Wound Care* 2012;25:450-64.
6. Horn SD, Sharkey SS, Hudak S, Gassaway J, James R, Spector W. Pressure ulcer prevention in long-term-care facilities: a pilot study implementing standardized nurse aide documentation and feedback reports. *Adv Skin Wound Care* 2010;23:120-31.
7. Olsho LE, Spector WD, Williams CS, et al. Evaluation of AHRQ's on-time pressure ulcer prevention program: a facilitator-assisted clinical decision support intervention for nursing homes. *Med Care* 2014;52:258-66.
8. Wagner C, van der Wal G, Groenewegen PP, de Bakker DH. The effectiveness of quality systems in nursing homes: a review. *Qual Health Care* 2001;10:211-7.
9. Rapp MP, Nelson F, Slomka J, Persson D, Cron SG, Bergstrom N. Practices and outcomes: pressure ulcer management in nursing facilities. *Nurs Adm Q* 2010;34(2):E1-11.
10. Samuriwo R, Dowding D. Nurses' pressure ulcer related judgements and decisions in clinical practice: a systematic review. *Int J Nurs Stud* 2014;51:1667-85.
11. Wunderlich GS, Kohler PO, eds. Institute of Medicine. Improving the quality of long-term care. Washington, DC: National Academy Press; 2001.
12. Sharkey S, Hudak S, Horn SD, Barrett R, Spector W, Limcangco R. Exploratory study of nursing home factors associated with successful implementation of clinical decision support tools for pressure ulcer prevention. *Adv Skin Wound Care* 2013;26:83-92.
13. Zimmerman S, Sloane PD, Cohen LW, Barrick AL. Changing the culture of mouth care: mouth care without a battle. *Gerontologist* 2014;54 Suppl 1:S25-34.
14. McAiney CA, Stolee P, Hillier LM, et al. Evaluation of the sustained implementation of a mental health learning initiative in long-term care. *Int Psychogeriatr* 2007;19:842-58.
15. Abel RL, Warren K, Bean G, et al. Quality improvement in nursing homes in Texas: results from a pressure ulcer prevention project. *J Am Med Dir Assoc* 2005;6:181-8.
16. Temkin-Greener H, Cai S, Zheng NT, Zhao H, Mukamel DB. Nursing home work environment and the risk of pressure ulcers and incontinence. *Health Serv Res* 2012;47(3 Pt 1):1179-200.
17. Dellefield ME, Magnabosco JL. Pressure ulcer prevention in nursing homes: nurse descriptions of individual and organization level factors. *Geriatr Nurs* 2014;35:97-104.
18. Kennerly SM, Yap T, Miller E. A nurse-led interdisciplinary leadership approach targeting pressure ulcer prevention in long-term care. *Health Care Manag (Frederick)* 2012;31:268-75.
19. Scott-Cawiezell J, Schenkman M, Moore L, et al. Exploring nursing home staff's perceptions of communication and leadership to facilitate quality improvement. *J Nurs Care Qual* 2004;19:242-52.
20. Siegel EO, Mueller C, Anderson KL, Dellefield ME. The pivotal role of the director of nursing in nursing homes. *Nurs Adm Q* 2010;34:110-21.
21. Siegel EO, Young HM, Leo MC, Santillan V. Managing up, down, and across the nursing home: roles and responsibilities of directors of nursing. *Policy Polit Nurs Pract* 2012;13:214-23.
22. Lukas CV, Holmes SK, Cohen AB, et al. Transformational change in health care systems: an organizational model. *Health Care Manage Rev* 2007;32:309-20.
23. VanDeusen Lukas C, Engle RL, Holmes SK, et al. Strengthening organizations to implement evidence-based clinical practices. *Health Care Manage Rev* 2010;35:235-45.
24. Kertesz SG, Austin EL, Holmes SK, et al. Making housing first happen: organizational leadership in VA's expansion of permanent supportive housing. *J Gen Intern Med* 2014; 29 Suppl 4:835-44.
25. Hartmann CW, Shwartz M, Zhao S, Palmer JA, Berlowitz DR. Longitudinal pressure ulcer rates after adoption of culture change in veterans health administration nursing homes. *J Am Geriatr Soc* 2016;64:151-5.
26. Bond GR, McHugo GJ, Becker DR, Rapp CA, Whitley R. Fidelity of supported employment: lessons learned from the National Evidence-Based Practice Project. *Psychiatr Rehabil J* 2008;31:300-5.
27. Miles MB, Huberman AM. *Qualitative Data Analysis: An Expanded Sourcebook*. 2nd ed. Thousand Oaks, CA: Sage; 1994.
28. Saliba D, Rubenstein LV, Simon B, et al. Adherence to pressure ulcer prevention guidelines: implications for nursing home quality. *J Am Geriatr Soc* 2003;51:56-62.
29. Castle NG, Decker FH. Top management leadership style and quality of care in nursing homes. *Gerontologist* 2011;51:630-42.
30. Advancing Excellence. Consistent assignment. <https://www.nhqualitycampaign.org/goalDetail.aspx?g=ca>. Last accessed March 8, 2016.
31. American Health Care Association. Consistent assignment documents. <http://www.ahcancal.org/searchcenter/Pages/Results.aspx?k=consistent%20assignment>. Last accessed March 8, 2016.
32. Pioneer Network. Consistent Assignment. <http://www.pioneernetwork.net/Providers/StarterToolkit/Step1/ConsistentAssignment>. Last accessed March 8, 2016.
33. Roberts T, Nolet K, Bowers B. Consistent assignment of nursing staff to residents in nursing homes: a critical review of conceptual and methodological issues. *Gerontologist* 2015;55:434-47.
34. Rahman A, Straker JK, Manning L. Staff assignment practices in nursing homes: review of the literature. *J Am Med Dir Assoc* 2009;10:4-10.
35. Singer S, Kitch BT, Rao SR, et al. An exploration of safety climate in nursing homes. *J Patient Saf* 2012;8:104-24.
36. Castle NG, Wagner LM, Perera S, Ferguson JC, Handler SM. Assessing resident safety culture in nursing homes: using the nursing home survey on resident safety. *J Patient Saf* 2010;6:59-67.

CE CONNECTION

CONTINUING MEDICAL EDUCATION INFORMATION FOR PHYSICIANS

Lippincott Continuing Medical Education Institute, Inc. is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Lippincott Continuing Medical Education Institute, Inc. designates this journal-based CME activity for a maximum of 1 *AMA PRA Category 1 Credit™*. Physicians should only claim credit commensurate with the extent of their participation in the activity.

PROVIDER ACCREDITATION INFORMATION FOR NURSES

Lippincott Williams & Wilkins, publisher of the *Advances in Skin & Wound Care* journal, will award 2.5 contact hours for this continuing nursing education activity.

LWW is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

This activity is also provider approved by the California Board of Registered Nursing, Provider Number CEP 11749 for 2.5 contact hours. LWW is also an approved provider by the District of Columbia, Georgia, and Florida CE Broker #50-1223. Your certificate is valid in all states.

OTHER HEALTH PROFESSIONALS

This activity provides ANCC credit for nurses and *AMA PRA Category 1 Credit™* for MDs and

DOs only. All other healthcare professionals participating in this activity will receive a certificate of participation that may be useful to your individual profession's CE requirements.

CONTINUING EDUCATION INSTRUCTIONS

- Read the article beginning on page 226. For nurses who wish to take the test for CE contact hours, visit www.nursingcenter.com. For physicians, who wish to take the test for CME credit, visit <http://cme.lww.com>.
- You will need to register your personal CE Planner account before taking online tests. Your planner will keep track of all your Lippincott Williams & Wilkins online CE activities for you.
- There is only one correct answer for each question. A passing score for this test is 13 correct answers. If you pass, you can print your certificate of earned contact hours or credit and access the answer key. Nurses who fail have the option of taking the test again at no additional cost. Only the first entry sent by physicians will be accepted for credit.

Registration Deadline: May 31, 2018 (nurses); May 31, 2017 (physicians).

PAYMENT AND DISCOUNTS

- The registration fee for this test is \$24.95 for nurses; \$22 for physicians.