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Evidence-based practice and patient-centered care: Doing both well

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Background: Health care organizations increasingly strive to deliver care that is both evidence based and patient centered. Although often complementary, fundamental contradictions may exist between these goals, and the organizational culture and infrastructure necessary to be successful in one domain may inherently diminish performance in the other.

Purpose: We assessed the relationship between evidence-based practice (EBP) and patient-centered care (PCC) by seeking to identify specific behavioral and process mechanisms, along with organizational characteristics that distinguish medical centers that are able to provide inpatient care that is both evidence based and patient centered from those where performance is either mixed or low in both domains.

Methodology/Approach: We analyzed interview data from 142 employees at 12 Veterans Affairs Medical Centers selected based on EBP and PCC performance (high, low, or mixed) using a priori constructs consistent with organizational literature, as well as emergent themes.

Results: We confirmed that tensions may arise when attempting to deliver both EBP and PCC and found unique characteristics of organizations that do both well. High-performing sites exhibited organizational cultures of empowerment where both EBP and PCC expectations were emphasized; provided formal and informal institutional supports and structures with regard to PCC and EBP; and fostered multidisciplinary, multidirectional approaches to care and communication that facilitated delivery of both EBP and PCC.

Conclusions and Practice Implications: Organizations that excel in providing both EBP and PCC exhibit unique characteristics and processes. Recognizing that some characteristics such as culture are difficult to change, these findings nonetheless highlight areas that could be enhanced by medical centers striving to deliver care that is both evidence based and patient centered.

Key words: evidence-based practice, organizational culture, patient-centered care

Two major trends in health care over the past 10 years have been the moves to evidence-based medicine (EBM), often referred to as evidence-based practice (EBP), and patient-centered care (PCC). In *Crossing the Quality Chasm*, the Institute of Medicine (IOM) proposed the Six Aims, a set of performance characteristics that together define how health care can and should be provided (Committee on Quality of Health Care in America, 2001b). The Six Aims, as relevant now as when they were first introduced, set forth the expectation that health care delivery should be safe, effective, patient centered, timely, efficient, and equitable. Often,

these aims are complementary: Improvements in one will enhance performance in others. It might seem that combining effective EBP and PCC could only enhance patient care. However, many argue that there is a fundamental tension between these goals (Hasnain-Wynia, 2006; Kitson, 2002; McLaughlin & Kaluzny, 2000). Even the IOM definitions of effective and patient-centered aims seem to provide potential conflict, as effective care is defined as being "based on scientific knowledge to all who could benefit," whereas PCC is defined as being "respectful of and responsive to individual patient preferences, needs, and values, and ensuring that

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patient values guide all clinical decisions" (Committee on Quality of Health Care in America, 2001b). In addition, the provision of PCC, with its emphasis on being responsive to individual patient and family preferences, needs, and values, can potentially conflict with the delivery of effective and efficient care via standardized processes of EBP (Bensing, 2000; Hasnain-Wynia, 2006; Kitson, 2002; Sidani, Epstein, & Miranda, 2006). This apparent paradox raises significant questions for health care providers, including whether medical care can simultaneously be guided by evidence while achieving patient-centeredness. The current qualitative investigation examines characteristics of medical centers in relation to how well they are able to achieve these dual goals.

Dual Goals: Conflicting or Synergistic?

If EBP and PCC are each effective methods for improving the quality of care, then one would anticipate that doing well on both could lead to multiple benefits. EBP and PCC can also represent opposing tendencies toward standardization on one hand and customization of medical practice around patient preferences on the other (Hasnain-Wynia, 2006; Kitson, 2002). Providers may see a focus on guideline adherence around EBP as limiting professional autonomy and/or feel that the surveys frequently used to assess PCC do not adequately reflect the quality of care they provide. Further adding to this tension is the growing use of public reporting data, through formal sources involving standardized measures such as Hospital Compare and Physician Compare (Centers for Medicare & Medicaid Services, 2018), as well as consumer-oriented websites. In contrast to the patient-level studies previously described, efforts to relate quality and patient ratings at an organization level have generally shown only weak or no meaningful associations (Emmert, Meszmer, & Schlesinger, 2018; Hu et al., 2017). A potential reason for the latter finding may be the conflicts raised in trying to deliver both EBP and PCC.

Other perspectives, however, suggest that EBM and PCC may not be so diametrically opposed. In advocating for EBM to meet the aim of delivering effective patient care, the IOM uses an updated definition of EBM adapted from Sackett, Rosenberg, Haynes, Haynes, & Richardson (2007) that incorporates elements of PCC to include patient preferences into clinical decisions (Committee on Quality of Health Care in America, 2001a). The potential synergy between standardization and customer responsiveness is bolstered by research findings that standardization and guidelines enhanced the experience of customers, for example, by promoting efficiency in the conduct of routine tasks and leaving more time to attend to individuals' needs. Standardized work processes positively moderated the relationship between a creative work climate and customer satisfaction (Gilson, Mathieu, Shalley, & Ruddy, 2005). There is a growing literature suggesting that an organizational model in which EBM and PCC could dovetail would be one in which EBM provided specific tools for delivery of high-quality care, and patients were involved in making decisions about the application of those tools. As observed by Flach et al. (2004) in concluding their study of PCC and the delivery of preventive services in

Veterans Affairs (VA), what is needed now is "further investigation regarding *why* some settings have a more patient-centered culture or *how* they facilitate PCC."

This prior research on the organizational characteristics associated with effective EBP and PCC in isolation leads to our research objective, which is to expand the knowledge and understanding of how health care organizations can deliver both evidence-based care and PCC. To do this, we examine organizational characteristics that can strengthen and/or facilitate an emphasis on PCC while also supporting EBP.

Conceptual Framework

We relied on the organizational transformation model (OTM) to guide our exploration of these issues. The OTM consists of five elements related to transformation of care: impetus to change, leadership commitment to quality, improvement initiatives, alignment between organizational goals and resources, and integration of intraorganizational boundaries (Lukas et al., 2007). The model is derived from a demonstration program involving several high-performing hospitals looking to further "pursue perfection" by providing appropriate, cost-effective, and safe care and services that met patients' unique needs and preferences (Robert Wood Johnson Foundation, 2010). The OTM identifies those characteristics that explain how organizations move from short-term improvement projects to sustainable changes. Although the model was framed around practices leading to successful changes in organizations, it also has value as a framework to understanding the challenges and tensions associated with efforts to achieve both EBP and PCC. The model has been applied in studies examining hospital programs to reduce readmissions (Mitchell et al., 2016), hospital pressure ulcer prevention (Soban, Kim, Yuan, & Miltner, 2017), and supportive housing for the homeless (Kertesz et al., 2014). The OTM provides our framework for identifying the hospital characteristics and practices that are essential to meet both EBM and PCC goals.

Methods

In this article, we focus on the results of the qualitative analysis from a larger mixed-methods study whereby we sought to identify characteristics that distinguish organizations that are able to deliver care that is both evidence based and patient centered.

Setting

For more than 20 years, VA has assessed patients' perceptions of their health care experience by using, at the time of this study's initiation, a measure based on the Picker Institute self-report inpatient survey, one of the flagship instruments of the early PCC movement (Cleary et al., 1991). VA has been conducting mailed satisfaction surveys since 1995 to assess inpatient care experiences as priority components of high-quality medical care. All medical centers participate in the survey since its start. Bed sections contacted include medicine, surgery, neurology, rehabilitation, spinal cord injury, and psychiatry. For our purposes, we used only scores from patients discharged from medicine bed sections from October 2008 to March 2009. In addition, VA has been in the forefront of the movement toward

EBM with a sophisticated performance measurement system based on comprehensive and standardized metrics. Sites were selected using these metrics for EBP and PCC.

Site Selection

Initially, all VA Medical Centers (VAMCs) providing acute inpatient care in 2009 were considered for inclusion. VAMCs with lower levels of complexity were excluded. The complexity of VAMCs is defined by characteristics of the patient population served, clinical services offered, educational and research missions, and administrative complexity. The exclusion of low-complexity VAMCs was motivated by limitations of study resources and the fact that such sites comprised only about 27% of VAMCs and were thus less representative of the larger system. In addition, VAMCs that had no mechanism to approve study-related research activities were excluded.

Sites were selected based on quantitative analysis of facility-level inpatient quality indicator scores (EBP) and inpatient satisfaction scores (PCC) during fiscal year 2009 (October 2008 through September 2009). The inpatient PCC indicators focused on 11 separate domains of patient satisfaction with care received during a hospital stay. We provide details in Supplemental Digital Content 1 (http://links.lww.com/HCMR/A57). Items are scored using top-box approaches. For example, the score on each item is calculated as the percentage of responses that fall in the top two categories (usually, always) compared to *never* or *sometimes* and aggregated to a facility level. Examining the patient satisfaction data, we assigned quintile ranks (0–4) to each of the 11 dimensions and summed quintiles for each dimension. Following this, we computed the total quintile percentage score (site score/44). Facilities with values greater than or equal to 70% (approximately 25%) were selected as members of the high PCC group, and sites below 60% were selected as members of the low PCC group (approximately 60%).

The inpatient quality indicators focused on scores related to the delivery of EBP for patients with community-acquired pneumonia (CAP), heart failure (HF), and acute myocardial infarction (AMI). We used the External Peer Review Program data, which were in use for several years before we obtained data. External Peer Review Program is used to create a database for internal and external comparisons of clinical care. Data used for these analyses are abstracted from a random sample of both paper and electronic medical records and evaluated through contracted review of care. VA provides a targeted goal for each metric (see Supplemental Digital Content 1, http://links.lww.com/HCMR/A58). To create our list of high performers on EBP, if a facility achieved 100% value on the metric, they were assigned a score of 1; metric scores equal to or greater than the target goal and less than 100% received a score of 0. Metrics below the target goal received a value of −1. We had a total of 23 metrics: 9 for CAP, 4 for HF, and 10 for AMI. After summing scores, we created a total rank score for each site (site score/23). Facilities with a score of 70 or greater (35% of sites) were considered as high performers, and facilities with a score of 60 or lower were considered as low performers (55% of sites).

Based on these PCC and EBP metrics, 12 VAMCs were recruited, three from each of the four performance quadrants:

VAMCs that scored highly in both EBP and PCC; VAMCs that scored high in one, but not the other; and VAMCs that were low on both.

Qualitative Data Collection

Two-person teams visited each of the selected VAMCs between October 2011 and September 2012. Teams were assigned so that every person on the qualitative project team visited at least one site in each of the quadrants, with the goal of providing all team members with firsthand exposure to the full range of sites to better inform their contributions to the coding and analysis.

Teams conducted interviews with three broad categories of staff: (a) individual members of the medical center senior leadership team; (b) physician and nurse managers from medical/surgical patient care units that serve patients with CAP, HF, and AMI; and (3) frontline physicians and nurses from medical/surgical units caring for patients with CAP, HF, and AMI. A total of 142 participants were interviewed, which ranged from 1 to 4 senior leaders per site and from 5 to 12 clinical employees per site. Interviewers followed a semistructured protocol consisting of three main sections: (a) examples of barriers to and facilitators of practicing EBP, (b) examples of barriers to and facilitators of practicing PCC, and (c) examples of the ways in which EBP and PCC interact in the organization. Table 1 provides additional information on the sites and participants.

Analysis

Interviews were coded using Nvivo 8 Software (2008) for qualitative analysis. The coding structure was developed in an iterative fashion using a priori constructs consistent with the OTM (Lukas et al., 2007) as well as additional coding categories that were identified to capture emergent themes, a process known as the constant comparative method (M. B. Miles & Huberman, 1994). As interviews focused on current EBP and PCC practices, we did not have consistent information across all sites about organizational impetus to change (an OTM driver), and therefore, information on impetus is not included in this analysis. Emergent themes included information on training, recognition, staff interactions/communications, tension, and complementarity between EBP and PCC. Interrater reliability was established using the "check-coding" process (M. B. Miles & Huberman, 1994). Reliability was assessed in this manner both at the outset and again at about the half-way point in the qualitative coding. A directed content analysis of all coded data was conducted by a team of six, consisting of a subset of those who participated in the site visits. All research activities were reviewed and approved by the VA Central Institutional Review Board (CIRB).

Results

Systematic analysis of the qualitative data identified several similarities and differences between VAMCs in the four performance categories. In the following sections, we touch on the similarities in all sites and expand on the differences between high- and low-performing sites when delivering EBP and PCC. Also presented are the tensions that emerge between

TABLE 1: Site and participant characteristics				
Site performance category	Region[a]	Fiscal Year 2012 operating beds	Senior leaders interviewed	Staff interviewed
A-HEBP/HPCC	Northeast	300–400	3	8
B-HEBP/HPCC	Midwest	<100	3	12
C-HEBP/HPCC	Northeast	200–300	2	8
D-HEBP/LPCC	South	100–200	3	10
E-HEBP/LPCC	Midwest	200–300	3	11
F-HEBP/LPCC	South	100–200	3	11
G-LEBP/HPCC	Northeast	<100	3	8
H-LEBP/HPCC	Midwest	100–200	3	5
I-LEBP/HPCC	Midwest	<100	4	8
J-LEBP/LPCC	South	200–300	3	9
K-LEBP/LPCC	South	100–200	1	10
L-LEBP/LPCC	Northeast	<100	2	9

Note. HEBP = high evidenced-based practice; LEBP = low evidence-based practice; HPCC = high patient-centered care; LPCC = low patient-centered care.

[a]U.S. Census geographic regions.

EBP and PCC and the characteristics of organizations that were able to deliver both well.

Delivering Evidence-Based Care

We found several similarities across all sites regardless of performance. All sites utilized similar structures and processes (e.g., committees, standardized reporting structures for performance related to evidence-based measures), evidence-based guidelines, and mentioned trainings specific to EBP. However, there were significant differences between high- and low-performing sites in how training was delivered, levels of emphasis on EBP, guidelines and support, tools, and academic influences. Representative quotes for contrasting EBP characteristics can be found in Table 2.

EBP training approaches: Regular vs. as-needed (OTM driver: Alignment).

Although training and education on new practices were mentioned at both high- and low-performing sites, respondents from high-performing sites tended to have a stronger education and training component as part of regular practice. In high-performing sites, staff frequently reported reading, citing, and reviewing journal articles as key activities during designated meetings. Lower performing sites conveyed that training was conducted during orientation or on an as-needed basis if scores were low.

EBP emphasis: Organizational vs. individual (OTM driver: Integration).

High-performing sites had a consistent and strong emphasis on EBP throughout the organization. (e.g., careful review and discussion of evidence via peer review process). At low-performing sites, it was up to individual providers to know or learn about EBP with little systematic institutional support (e.g., journal clubs). Staff at low-performing sites often reported that best practices would "rub off" by virtue of academic relationships and that it was everyone's responsibility to keep up with developments in their area of specialization.

EBP guidelines and support: Bottom-up vs. top-down (OTM drivers: Improvement initiatives and leadership commitment).

High-performing sites had a strong bottom-up involvement in guideline development and implementation. For example, clinical meeting time was set aside for discussion of the latest evidence and its applicability to practice. The group process helped address areas where there might not be agreement about aspects of the guidelines, so that once finalized, everyone could be expected to accept and use them. In addition, guidelines were implemented so that they were easy for staff to access and use. Staff at high-performing sites also reported the presence of evidence-based teams in the hospital focused around specific diagnoses (e.g., all patients with HF would be cared for by teams with specialized knowledge of HF care protocols). High-performing sites also reported that leadership provided an environment supportive of EBP, including resource support.

In contrast, low-performing sites pushed care guidelines down through the organization with little implementation support. Low-performing sites reported more variation in leadership support and the scope of changes they would support. For example, some leaders were seen as verbally supportive of basic EBPs but provided little tangible support in terms of implementing EBP.

TABLE 2: Representative quotes for high- and low-performing sites on evidence-based practice (EBP)		
Theme	High-performing characteristics and quotes	Low-performing characteristics and quotes
Training approach	**Regular Practice:** "We had annual [EBP] workshops and that is where the nurses were taught and became a champion for their unit…[Nurses] meet [in EBP committee] to inform us about what they are doing and also provide guidance to each other…Nursing Grand rounds monthly…a lot of e-mails about courses and education offered to all staff." Site E-HEBP/LPCC	**As Needed:** "Upon orientation to the facility they do [EBP training] up front. It's also done annually and then as needed if you are falling down on scores…On the as needed basis, they will be coming and say, 'Hey, I need 15 minutes of your time for this training.'" Site J-LEBP/LPCC
EBP emphasis	**Organizational:** "We try to identify all patients in hospital who have heart failure that we can consult appropriately. Also, more careful review of patients being reviewed by the peer review process." Site A-HEBP/HPCC	**Individual:** "[EBP is] medical education, that's my training as a resident and fellow. My responsibility to keep up; that's why I go to conferences and read journals." Site I-LEBP/HPCC
Guidelines & support	**Bottom-up:** "Depending on how sophisticated…I'll ask [residents] to do a more involved QI project. For interns, ask them to just look at their panel, 45–60 patients, see who has cholesterol or high blood pressure out of bounds, and have them write up a plan for me for 15–20 patients with specific criteria that need to be addressed." Site B-HEBP/HPCC	**Top Down:** "Generally a top-down activity. The [regional network] usually has some requirement that we have to implement certain bundles, and then we pretty much just educate people and monitor." Site I-LEBP/HPCC
Tools for EBP	**Development:** "Pretty good evidence that you need to ask people to be [HIV tested]…put in place an HIV clinical reminder…Wasn't mandated from above; it was done locally based on the evidence that these reminders had worked on other things, so why don't we do that." Site D-HEBP/LPCC	**Distribution:** "Now that we've learned [guidelines] are automatic and besides the computer system reminds us, so we don't need checklists…If not doing what's on the list then there must be a reason…." Site L-LEBP/LPCC
Academic influences	**Positive:** "The fact that this is a closely-affiliated teaching hospital vastly improves the penetration of evidence into medical practice because…And especially the residents and students, who are not only being taught, but they're being tested, and they're being plied with literature, and they're always challenging the senior staff as to why they're doing or not doing what the evidence says…." Site B-HEBP/HPCC	**Negative:** "It's hard, also because this is a teaching hospital, new residents every year, different culture set. People work well on teams when trust is established… hard to build [trust] so we must be as transparent as we can." Site L-LEBP/LPCC

Note. QI = quality improvement; HIV = human immunodeficiency virus; HEBP = high evidenced-based practice; LEBP = low evidence-based practice; HPCC = high patient-centered care; LPCC = low patient-centered care.

EBP tools for EBP: Development vs. distribution (OTM driver: Improvement initiatives). In high-performing sites, tools (e.g. clinical reminders) were developed and used in more sophisticated ways. Examples included using evidence-based care bundles to improve care processes for central lines or protocols for high blood pressure control and addressing complications post coronary artery bypass. In addition, high-performing sites reported a greater volume of quality improvement activities, specifically targeted at improving EBP-related performance. Performance improvement projects were often led or initiated by frontline staff who took the lead on projects, such as identifying frequent visitors to the emergency department or improving adherence to tobacco cessation, blood pressure, or cholesterol control protocols. Some sites used miniretreats as mechanisms for developing flow maps for care and brainstorming ways to fill gaps. Other sites revised existing policies and procedures to standardize how nurses across the organization

would respond to cardiac rhythm problems, which led to developing a new hospital policy on telemetry.

Low-performing sites used similar EBP tools, relying on the tools as they were provided. Alternatively, high sites took opportunities to assess the usefulness of the tool and to take steps to improve or redesign the tool if necessary.

EBP academic influences: Positive vs. negative (OTM drivers: Alignment and integration). High-performing sites reported that their academic affiliations enhanced their ability to incorporate the latest science into practice. They also described mechanisms where teaching and clinical practice were complementary. For example, staff and trainees were expected to attend journal club and discuss and present interpretations of the academic literature.

In contrast, when asked about the influences of academic affiliation, low-performing sites often reported negative impacts,

TABLE 3: Representative quotes for high- and low-performing sites on patient-centered care (PCC)

Theme	High-performing characteristics and quotes	Low-performing characteristics and quotes
Interactions	**Relational:** "Through conversation, it was clear he really didn't want any of that. So, we were able to arrange for him to go home with Hospice without any further kind of medical diagnosis, intervention, which on the other hand, you can imagine he would have been in the hospital for weeks, very well may have died in the hospital. He actually died 2 weeks later at home with his family, which from my perspective is great. We were able to make and reach those goals for that patient, which may not have been my goals or a physician's goals." Site B-HEBP/HPCC	**Transactional:** "We are very much a culture of process instead of service…we're transactional versus transformational. Putting on the armband for a new inpatient, we put it on them and that's it. And that's a transaction. Versus, '…We put this on you for safety reasons, so we can always identify that you are who you're supposed to be and that any test you take is associated with you…it's an important part of us keeping you safe.' A lot different type of interaction than put this on you and then move to the next area." Site J-LEBP/LPCC
PCC implementation	**Integrated:** "Our mission to honor Veterans with health is all over the building. Reinforce that at every opportunity. In inpatient units, [nursing home] area, outpatient clinics have been largely redesigned to be more accessible…We embrace caregivers as partners in the care for Veterans…We involve veterans and families in almost everything we do…I have a veteran who is a voting member on the governing board for our health system…at every meeting he has a standing agenda item…to remind all of us, in particular our providers, why we show up for work in the morning." Site H-LEBP/HPCC	**Individual:** "I'm an intensive care physician, so when I'm in ICU, I try to model that for residents and fellows and work collaboratively with our Palliative Care partners. Oftentimes patients are identified for Palliative Care when come into the ICU. So, I try to do that personally there, facilitate those things I can that would allow PCC to develop." Site D-HEBP/LPCC
Perspective	**Opportunity:** "I really do believe we have a culture in Nursing directed at PCC and patient safety. So, when they see an issue that relates to safety and patient satisfaction, they'll put a team together, develop a process." Site B-HEBP/HPCC	**Barrier:** "They've been so task oriented, 'I have to do this, don't think outside the box.' Doesn't afford them the opportunity to say, 'Hey maybe we should get the patient out of the bed because of his COPD.' They don't have the opportunity to do that." Site F-HEBP/LPCC

Note. ICU = intensive care unit; COPD = chronic obstructive pulmonary disease; HEBP = high evidenced-based practice; LEBP = low evidence-based practice; HPCC = high patient-centered care; LPCC = low patient-centered care.

citing the constant rotation of students through the organization as a barrier to providing consistent evidence-based care. Resident turnover in particular was thought to be related to variations in EBP performance.

Delivering PCC

When looking specifically at PCC, we found several similarities across all sites regardless of performance. Both high- and low-performing sites dedicated resources to the design and staffing of both care processes and physical care locations in ways that would maximize the continuity and integration of clinical care and thereby improve patient satisfaction. All sites had formal organizational structures and/or staff roles dedicated to the concept of patient-centeredness (e.g. use of multidisciplinary rounds). In addition, all sites held trainings specific to the delivery of PCC. High- and low-performing sites differed, however, in their approaches to PCC with respect to interactions, implementation, and perspectives. Representative quotes for contrasting PCC characteristics can be found in Table 3.

PCC interactions: Relational vs. transactional (OTM drivers: Alignment and integration). High-performing sites strove to build relationships with patients by placing

them at the center of the organization. These interactions were often described as advocating on behalf of, collaborating, or engaging patients in the decision-making process.

Low-performing sites had more transactional interactions with patients, where providers delivered information or care to patients but did not allow for feedback. This also manifested when attempting to include patients in organizational committees as low-performing sites often reported difficulty in keeping patients involved and engaged. In addition, in low-performing sites, there was often a lack of regard to the individual patient involved and the committee topic, which often resulted in a drop in patient engagement and participation on the committees.

PCC implementation: Integrated vs. individual (OTM drivers: Alignment and integration). High-performing sites had formal structural mechanisms to support a patient-centered approach to care. These mechanisms included having patients and staff from all disciplines involved in both care planning and broader organizational committees (e.g., Mental Health, Women's Health, Ethics). Although the presence of committees was not unique to high sites, the integration of patients as members of those committees was unique and set

the high sites apart in terms of implementing PCC. The structure also allowed for identification of opportunities for improved PCC approaches.

Alternately, low-performing sites reported individual instances of staff going "above and beyond" to deliver PCC instead of consistent organizational messages that PCC is an expected part of how the organization operates.

PCC perspective: Opportunity vs. barrier (OTM driver: Improvement initiatives).
Another area where high and low sites differed widely was around redesigning current processes to be more patient centered. High-performing sites were more likely to use formal process improvement to address barriers to PCC. These sites used pilot projects, rapid process improvement, root cause analysis, and other Lean methodologies to address inefficiencies and waste in the organization that in turn improved the care patients received. For example, a nurse manager in the Emergency Department queried staff to identify inefficiencies in triage and registration. Using Lean improvement methodologies, they were able to reduce the amount of time patients spend waiting to receive care, addressing a patient-centered issue and increasing patient satisfaction.

Alternatively, in low-performing sites, the barriers to delivering PCC were seen as insurmountable instead of opportunities for improvement. In addition, organizational culture was often considered as a barrier to changing processes. For example, in one low-performing site, the culture was described as transactional instead of being transformational. Because of these cultural challenges, low-performing sites had difficulty initiating and/or completing process improvement work.

Recognizing Tension Between EBP and PCC
The framework for our interviews also explored whether staff believed there was tension between excellence in practicing EBM, with its emphasis on standardization of care based on best practices, and excellence in delivering PCC, with its emphasis on flexibility based on patient and family preferences. In high-performing sites, staff said that EBP and PCC are congruent. One high-performing site interviewee expressed it as follows: "I see them as complementary because the patient [is presented with the evidence] and is able to make a decision on its face or based on it."

In spite of this optimism, we heard about ample opportunities for tension between EBP and PCC delivery in both high- and low-performing sites. Common examples of EBP and PCC in conflict included patients who refused to accept clinical recommendations, such as smoking cessation, even when hospitalized, or not taking prescribed medications because of side effects. Staff also cited situations where recommended treatments were at odds with the patient's or family's beliefs, their lifestyles, or importantly their preferences for how aggressively they wished to approach care. For example, we heard that patient and family member preferences were often at odds with clinical recommendations for whether and how aggressively to treat advanced or terminal illnesses. In Table 4, we provide examples of these tensions, which were present in all performance levels.

EBP and PCC: Doing Both Well
When looking at sites that were able to achieve high performance on both EBP and PCC, we found the following distinguishing characteristics. Table 5 provides quotes for each of the distinguishing characteristics in high-performing sites and outlines recommendations from the Practice Implications.

Organizational culture (influenced by all OTM drivers).
Study sites that were able to balance the demands of both EBP and PCC had cultures of empowerment. From both an evidence-based and patient-centeredness perspective, staff talked about "living those core values every day." The culture and mission of "veterans come first" is embedded in how they operate.

Sites where the culture emphasized both EBP and PCC set expectations that staff throughout the organization will deliver care based on the best scientific evidence, shaped by the unique requirements and circumstances of each patient. Staff in these sites conveyed shared stories that reinforced and celebrated such expectations. Staff discussed the actions their senior leaders take to set the tone and reinforce their vision and expectations for patient care. In one site, the mission statement explicitly describes partnering with Veterans— meaning helping Veterans make decisions for themselves about the care they receive.

In contrast, low-performing sites had a passive or punitive culture in which lack of individual accountability, a culture of blame, resistance to change, and institutional burnout are perceived as unchangeable. For example, staff described their "very regimented ways of viewing how things need to get done" as a major impediment to PCC.

Institutional support and structures (influenced by all OTM drivers).
Beyond culture, high-performing sites placed both formal and informal emphasis on guidelines for patient care (both EBP and PCC). For example, in one site, physicians, nurses, and other staff had a formal rounding structure to improve interdisciplinary communication. In another site, senior leaders placed strong emphasis on education and training, bringing in experts, for example, to train on specific procedures.

Given these structures, there was also endorsement of EBP and PCC through formal roles and activities. In one site, every process measure had a champion who was a subject matter expert on aspects of EBP. In another site, there was a veteran on the Executive Board. In another site, the medical center director gave consistent attention to ongoing staffing in the units and to nursing and medical center policies with a view to strengthening performance. The medical center director made sure that formal guidelines and specific protocols were developed and encouraged using resources from their academic affiliate, such as lectures and conferences, to strengthen EBP and the organizational culture.

Multidisciplinary, multidirectional approaches to care and communication (OTM driver: Integration).
Although we found that all sites utilized multidisciplinary rounds, sites that were able to deliver care that is both high

TABLE 4: Representative quotes for tension between evidence-based practice and patient-centered care	
Site	**Quotes**
A-HEBP/HPCC	"Always a tension between standardization of care based on evidence and allowing patient preferences to be respected. There are patients that for a variety of reasons don't want certain elements of care that are medically necessary, but a fundamental element is the autonomy of patient decisions. Sometimes they decline care we think is best for them. Patient-centered care is somewhat a somewhat trendy term, even 20 years ago. What has changed in a last decades is the organization of services around needs of patient rather than staff."
E-HEBP/LPCC	"I was involved in a situation, where a patient needed bypass surgery and a patient might have needed blood during the surgery, but the patient's religious beliefs wouldn't allow him to have it. So, we talked with him and got our team very involved, and ultimately it ended with the patient going to a different institution where they do bloodless surgery. We didn't have capability to do a bloodless surgery here, so the patient transferred to an institution that could do the surgery and the VA paid."
G-LEBP/HPCC	"We have an argument going on right now, we have a case of osteomyelitis and patient doesn't want another 6 weeks of antibiotics through the IV and that's for reasons that I understand because it's this whole thing with his wife and everything. So, he doesn't want it, he said he'd rather have his foot cut off. So now my team should be hopefully calling the vascular surgeon to have an amputation performed, which they probably won't want to do but the patient really doesn't want antibiotics again."
K-LEBP/LPCC	"I would say it happens all the time when we, it's for a specific condition, when we start blood thinning with patients with heart conditions. Talk about coumadin, warfarin for atrial fib. Tons of evidence to tell what is the best to prevent stroke I don't think that that gets applied in consistent way and definitely not patient centered way. Use coumadin and difficult for patients to take and manage. I think that patients' part in this gets lost. I think in our enthusiasm to provide EBC…Often times the discussion with the patient and what this means for your life is lacking. That has a major impact on compliance with the med. And down the road to readmission and complications about taking the med."
Note. HEBP = high evidenced-based practice; LEBP = low evidence-based practice; HPCC = high patient-centered care; LPCC = low patient-centered care; VA = Veterans Affairs; IV = intravenous therapy; EBC = evidence-based care; atrial fib. = atrial fibrillation.	

in EBP and PCC excelled in building multidisciplinary, multidirectional approaches to care and communication. Staff at high-performing sites reported that a multidisciplinary approach facilitated their ability to provide care that was both evidence-based and patient-centered with different disciplines (e.g., nurses, social workers, chaplains, physicians) bringing different training and strengths.

In cases where tension between EBP and PCC was present, we found that patient communication and education were key factors in reconciling differences between what is being recommended clinically, EBP, and the care preferences of the patients. This allows patients/families to fully understand clinical recommendations and to articulate their preferences, PCC, in the context of the options available.

Low-performing sites often cited inadequate time, resources, and funding to support the extra effort required to balance EBP and PCC. Sites that emphasized these stressors tended to see policies and rules as impediments to being more flexible and to supporting the teamwork, training and education, cooperation, and communication among disciplines that would help them to be more patient centered.

Discussion

This study identified key characteristics of acute inpatient medical centers that were able to provide medical care that is both evidence based and patient centered. High-performing sites had active, innovative improvement-oriented cultures in which accountability and staff engagement in problem solving were cited. Providers in high-performing sites also had the institutional support and autonomy to provide clinical care that was both evidence based and emphasized patient and family preferences. In addition, high-performing sites took multidisciplinary approaches to care in which members of the team shared responsibility for patient care and communication was open and multidirectional among all levels of the organization, including communication with patients. Sites that excelled in only one area, either EBP or PCC, did not exhibit the characteristics found in sites that were high performing on both.

In contrast to high-performing sites, low-performing sites exhibited a passive or sometimes punitive culture in which there was a lack of accountability, blaming, and resistance to change. Clinicians in low-performing sites often aspired to improve clinical performance and patient-centeredness but felt bound by institutional structures and systems that were bureaucratic and constrained their ability to deliver their preferred type of care. Low-performing sites also had more formalized approaches to providing multidisciplinary care, and communication between various levels of the organization was structured (chain of command) or even strained.

These findings reflect themes consistent with constructs of the OTM, with alignment, integration, and improvement initiatives as drivers in high-performing EBP and PCC sites. The leadership commitment to quality driver was commonly discussed by high-performing sites as contributing to EBP, but less often mentioned for PCC. Components of an organization, such as culture and institutional supports and structures, are influenced by all OTM drivers and over time reflect

TABLE 5: Evidence-based practice (EBP) and patient-centered care (PCC): High-performing themes, representative quotes, and recommendations for doing both well

Theme *OTM driver*	High-performing quotes	Recommendations for doing both well
Organizational culture *Leader commitment* *improvement initiatives* *alignment* *integration*	"For me, it's actually pretty easy, and that's the Quality Improvement rotation we do for the residents. All third-year residents…They self-identify a quality improvement project they want to look at. 95% of projects have nothing to do with core measures, just an area that resident has identified as possibly needing to be improved upon." Site B-HEBP/HPCC	• Assess current organizational culture to ensure a supportive environment that includes accountability and recognition • Leaders set expectations for EBP/PCC and reinforce expectations with their own actions. • Engage all levels of staff in provision of and discussions about delivering both EBP and PCC. • Empower providers to deliver EBP while considering PCC.
Institutional support and structures *Leader commitment* *improvement initiatives* *alignment* *integration*	"To me, PCC should be individualized, but then, on the other hand, you need policies that you can fall back on. So, taking policies and procedures for what they're intended to be, but then going that extra step to individualize it, to still be safe in what you're doing, but be sensitive to what that patient is experiencing." Site C-HEBP/HPCC	• Ensure dedicated support/resources for provision of care that is both EBP and PCC. • Create/foster organizational structures and processes that are dedicated to providing EBP/PCC
Multidisciplinary, multidirectional approaches to care and communication *Integration*	"Multidisciplinary team approach allows more patient-centered care because you hear issues that might not come out in a single MD/patient interaction. For example, a pharmacist may find out that the patient may not be taking all his drugs. Having a dietician would uncover a problem with the patients' use of salt. If every clinic had a dietician, nurse practitioner, and pharmacy support, it would be ideal." Site A-HEBP/HPCC	• Create mechanisms/pathways that allow for multidirectional communication at all levels of the organization to exchange information pertinent to both EBP and PCC. • Create communication mechanisms/processes that allow for multidirectional information flow between providers and patients and their families.

Note. OTM = organizational transformation model; MD = medicine doctor; HEBP = high evidenced-based practice; LEBP = low evidence-based practice; HPCC = high patient-centered care; LPCC = low patient-centered care.

change and ultimately organizational transformation (Lukas et al., 2007). This overall organizational transformation component was a unique factor in high-performing EBP and PCC sites. We interpret this result as highlighting the importance of taking into consideration how each model driver operates dynamically, yet is interconnected with other elements, suggesting system-level thinking may be especially helpful in transforming a medical center into one that delivers high-quality EBP and PCC.

Several viewpoints have been presented in the literature that support the importance of understanding how patient preference and involvement in decision-making interacts with and influences the evidence-based care that is provided in health care organizations (Hoffmann, Montori, & Del Mar, 2014; Montori, Brito, & Murad, 2013). In addition, reviews have alluded to the fact that EBP and PCC are incomplete when considered separately and must be looked at together (A. Miles & Mezzich, 2011). Previous work has examined how well clinical practice guidelines incorporate patient preferences (Chong, Chen, Naglie, & Krahn, 2009) and identified factors critical to the adoption of practices like shared decision-making (Légaré & Witteman, 2013). Our findings synthesize and build on this prior work by presenting characteristics of organizations where EBP and PCC coexist and providing practical recommendations for organizations striving to deliver care that is both evidence based and patient centered.

Practice Implications

Although the culture of an organization may be difficult to change, senior leaders should consider the current organizational culture to determine whether it is supportive or punitive. Leaders and managers can then introduce policies and procedures to deliver strong, consistent expectations that all staff are responsible for delivering care that is both evidence based and patient centered and reinforce those expectations with their personal actions, involvement, and support. This includes holding staff accountable (both informally and through formal performance evaluations) and recognizing staff members who provide an effective balance of EBP and PCC. These suggestions are consistent with literature pertaining to leadership and/or middle manager impact on implementation of EBP (Birken et al., 2018; Stetler, Ritchie, Rycroft-Malone, & Charns, 2014) and PCC (Bokhour et al., 2018).

Establishing an organizational culture that encompasses the principles of EBP and PCC also involves engaging staff in the vision of providing the very best care, as well as providing structural and process-based supports to make it possible. Providers should feel empowered and have the autonomy to flexibly deliver clinical care that considers patient preferences (i.e., granting them permission to act without fear of repercussions). This support may come in the form of dedicated resources for redesign of current spaces, systems, and processes (e.g. providing dedicated forums for discussing EBP and PCC practices in the organization or dedicated space for patients and their families to discuss treatment). Managers may also want to ensure that structures and processes (e.g., committees or patient order sets) are in place to aid staff in delivering care that is both evidence based and patient centered. Our findings that these types of structures and processes support concurrent high performance on EBP and PCC are consistent with prior work that focused on implementation of EBP and PCC separately (Aarons, Ehrhart, Farahnak, & Sklar, 2014; Santana et al., 2018), as well as work that explores innovative ways to reconcile the tension between EBP and PCC (Weaver, 2015).

Finally, fostering open communication on both an organizational and patient level may aid in high performance on EBP and PCC and the easing of tensions between the two. At the organization level, open multidisciplinary, multidirectional communication may aid in delivering care that is both evidence based and patient centered. At the patient level, open communication is key to being able to provide patients with the evidence and options regarding their care, as well as understanding their concerns and preferences. This type of communication also allows providers to consider potential patient-centered supports that may enhance the acceptability of evidence-based care (e.g., a patient may be more willing to undergo an evidence-based procedure if visiting hours are more flexible and therefore a spouse or family member is able to stay with them while in the hospital). Our recommendations on communication align with recent efforts to resolve the paradox present between patient-centeredness and practice guidelines present in the Medical Care Triangle, which recommends balancing institutional routines with shared decision making (Issel, 2018).

Additional research is needed to better understand how specific dimensions of PCC and EBP coexist, including moderating and mediating variables of this relationship (Rathert, Wyrwich, & Boren, 2013). In general, the demand for PCC is growing, driven in part by changing expectations regarding patient and family participation in decision-making. Organizations seeking to become more patient centered, however, should acknowledge that such transformation is difficult as it typically involves major changes in culture and approaches to clinical care.

Limitations

Our study is not without limitations. All sites included in the study were affiliated with academic medical centers and were also required to have a memorandum of understanding with the VA CIRB, which indicates they were involved in research at their medical center in some capacity. In addition, all sites were acute care VAMCs of medium to high complexity. Although this may limit generalizability to health care organizations that are providing more complex levels of care, the sites in the study represented a wide range of geographic variability. Although site selection data are from 2008 to 2009 and qualitative data collection occurred in 2011–2012 after a lengthy VA CIRB process, the findings of this study are independent of the time period of data collection, as patient experience and quality metrics are still ongoing concerns in health care today.

Building on work that examines the implementation of a patient-centered approach in the primary care setting through evidence-based quality improvement (Rubenstein et al., 2014; Stockdale et al., 2018), one area for future research may include studying the delivery of EBP and PCC in additional outpatient or long-term care settings to discern if similar organizational characteristics are found. In addition, replicating our work to EBP and PCC in health care systems outside of the VA would support the generalizability of our findings. One final area where future research is needed is the assessment of what effect, if any, the Veterans Access, Choice, and Accountability Act of 2014, which allows eligible Veterans to seek care outside the VA, has on the delivery of EBP and PCC.

Conclusions

Providing care that is both evidence based and patient centered requires organizations to reflect on their current practices. Recognizing that some characteristics such as culture are difficult to change, these findings nonetheless highlight areas that should be considered when striving to deliver care that is both evidence based and patient centered. By ensuring organizational structures and supports are in place to aid in care delivery and by emphasizing multidisciplinary care practices that value multidirectional communication, organizations may start to create a culture that is supportive of evidence-based PCC.

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