The Application of High-Reliability Theory to Promote Pain Management

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Evidence-based pain management, a high-volume hospital service, impacts resource utilization and quality indicators. Despite extensive efforts to improve care, outcomes remain poor, and barriers seem insurmountable. Change management strategies that embrace organizational and individual accountabilities are warranted. Conceptualizing evidence-based pain management within the context of high-reliability theory may help redesign systems and processes to better meet needs of patients. The author discusses using a high-reliability framework as a change management strategy.

Pain is pervasive, severe, and undertreated in the acute care setting. Pain management is a high-volume service practiced in essentially every hospital unit. The effective delivery of evidence-based pain management (EBPM) decreases resource utilization, complications, and length of stay; improves key outcome measures including patient satisfaction; and ensures patient rights. Conceptualizing pain management services within the context of high-reliability theory may help reconfigure systems and processes to better meet patient needs.

Although pain and its management have been aggressively studied, individual care providers inconsistently adopt evidence-based recommendations. The publication of the Agency for Healthcare Research and Quality (formerly the Agency for Health Care Policy and Research) standards in 1992, followed by pain management guidelines for healthcare facilities in 1995, acknowledged the critical nature of organizational systems in pain relief. Official accountability for pain management changed when the Joint Commission required pain management standards using documentation as a compliance measure. Pain management standards now cued pain assessment, intervention, and reassessment, additionally dictating requirements for human resource management, patient education, quality improvement, and patient rights.

Organizations responded with an explosion of new policies and procedures, staff education, quality improvement projects, and documentation forms. The Joint Commission standards coupled with quality improvement initiatives and context-driven philosophies embraced system accountability for defects in the treatment of patients’ pain. Systems were accountable for practice, whereas care providers hopefully performed as expected.

Despite extensive organizational interventions and improvements, deficits still exist. Evidence-based pain management is highly complex and not easily implemented into systems and processes. Unlike the simple addition of a new piece of equipment or procedure, EBPM requires the integration of multiple and varied pain management treatment modalities, an age-and-condition-appropriate array of pain assessment instruments, combinations of highly regulated pharmacological treatments, and nonpharmacological interventions that may be provided by nurses or complimentary care providers. Evidence-based pain management also delves into physician and nursing practice, many times exposing knowledge deficits and long time, recalcitrant practice patterns that are difficult to change.

Individual practice variations and methods of organizational learning in pain management were historically addressed with a range of pain-specific record forms, standardized order sets, staff education, and documentation reviews. Despite well-constructed quality improvement efforts, well-intentioned educational programs, and thoughtfully constructed pain

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The question arises about whether the current change management strategies fully embrace all accountable organizational levels. O’Rourke professed that an improvement in the standard of care requires a concomitant improvement in the standard of practice. To meet the role obligations of a profession, practitioners must have the capacity for self-directed role authority and accountability, use theory and evidence to guide practice, and integrate new learning in the best interest of patient and public. Unfortunately, poor nursing pain management practices are well documented. Patient assessment by nurses can be incomplete, inconsistent, or absent altogether. Nurses continue to underuse or inconsistently manage pharmacological interventions and achieve unacceptable scores on standardized pain examinations. Pain reassessment, a critical component of individualizing care, is inconsistently performed and documented. Additionally, nurses show deference toward treating certain populations of patient as opposed to others and use terminology identifying patients as “drug seekers” without complete case analyses. Despite a significant body of evidence and multiple system and educational interventions, pain management practices remain substandard. Two qualitative studies highlight the nursing challenges in implementing EBPM, exemplifying individual issues.

Blondal and Halldorsdottir, using phenomenology, found that nurses, although highly motivated to manage pain, faced assessment, physician, and organizational challenges that could prevent positive outcomes. The results of Richards and Hubbert study reiterated nurses’ difficulty with accepting the patient’s stated pain score. Directed by moral imperative and professional obligations to treat pain, nurses seem to struggle to comply with standards.

Despite increasing the understanding of nurses’ experience managing pain, the qualitative narratives expose erroneous practices. For example, a nurse participant discussed using opioid analgesics as “her last choice,” neglecting well-established evidence of pain prevention. Another participant discussed how her biases impacted her decision to withhold aggressive pain treatment. Other participants report inconsistent use and difficulties using pain scales, some deciding not to use them despite evidence and policies to the contrary.

Inner conflicts and moral dilemmas emerge as a component of caring for patients nurses believe are drug seeking. Instead of embracing the subjectivity of the patient’s experience, nurses choose to adopt the role of decision maker and determine whether the patient had pain. These decisions solicited a myriad of undesirable patient behaviors of fear and verbal abuse. Nurses labeled these patients as “difficult, demanding, and frustrating.” potentially deficient in the knowledge that many of these patients may, in fact, be undertreated or require specialized care.

The difficulties nurses face with physicians as gatekeepers to appropriate pain management therapy have long been documented in the literature. Nurses consistently report the need to “exert influence” or “argue” when they believe the patient is not receiving appropriate care. Nurse participants reported their need to know the physician to obtain appropriate pain medication orders, leaving an obvious question of what happens to patients’ pain when physician coverage or staff changes occur. Many pain management specialists have echoed the need to address physician pain management deficits yet calls for progress have been largely unanswered or managed with blanket organizational strategies and little individual accountability.

In light of nursing practice deficiencies, it is hard to ignore findings highlighting that the integration of knowledge into nursing practice patterns has remained static. Knowledge transfer is thought to be a cognitive, yet is, more importantly, a social process. Nurses seek information for practice when confronted by a specific and immediate problem or interest and rely heavily on experience often discounting new evidence from clinical specialists, clinical leaders, or staff development providers. Nurses most frequently access practice knowledge from peers that may explain the unit culture influence of pain management practice. Change management strategies that pervade all organizational levels seem warranted.

**Change Management Considerations**

Apparent in pain management practice is the integration and interconnectedness of individual, organizational, and social factors necessary for successful implementation of evidence. Change strategies focus heavily on organizational modalities promoting individual behavior change with decision support and feedback to nurses. Few interventions consistently reduce patients’ reported pain severity. Recently, Titler and colleagues were able to show an improvement in the implementation of EBPM and subsequent reduction in pain severity, but were unable to determine which interventions contributed to success. Change interventions were largely organizational, yet social, focusing on the
collaboration of caregivers. More interventions need to focus on organizational philosophies that pervade the social and interpersonal aspects of pain management practice.

**High Reliability as a Change Management Strategy**

High-reliability theory is based on the belief that accidents can be prevented through thoughtful organizational design that integrates accountability among organizational levels. Analysis and application of high-reliability organizational concepts and processes may provide beneficial insights for pain management quality improvement.

High-reliability organizations (HROs) are those where accidents and errors can prove fatal. As a result, HROs need to function consistently despite varying inputs and working conditions. High-reliability organizations incorporate an organizational commitment to safety with numerous system checks and balances and strong organizational cultures for learning. Because mistakes can cause certain failure and death, HROs are not afforded the opportunity of trial-and-error learning and rely on processes that depend on the thinking of the end users. Although the primary application of high-reliability theory in healthcare is focused on safety, many of the principles can be applied to pain management.

Dimensions of high-reliability theory integrate principles of organizational complexity and coupling, principles that are also apparent in pain management practice. Complexity assumes that one organizational component is acting with one or many others in sometimes unforeseen or covert ways. Coupling refers to the amount of slack between 2 components of a process. Components are coupled tightly when their interrelationships are intertwined enough to potentially cancel each other's work. From a safety perspective, high complexity and tight coupling generate errors. Noted reliability theorists Weick and colleagues contend that collective organizational mindfulness helps to decrease coupling while increasing an essential awareness of complexity. Organizational mindfulness focuses attention on inputs that may need to be adjusted at the discretion of the end user to maintain reliable outcomes. Continuing alertness allows organizations to readily detect and respond appropriately to aberrations.

Pain management practice at the bedside exemplifies the need for reliability. Care providers need to attain the same results using different inputs such as pharmacological interventions, individual patient preferences, access to organizational resources, self-attitudes and beliefs, unit culture, and past experiences. Reliability exists as a cognitive process staying true to the priority of managing the pain, mindful of bias, while assessing, titrating interventions, and reassessing to attain patient comfort while minimizing adverse effects. Pain management is highly complex and tightly coupled, therefore fraught with potential for error.

According to Weick et al, organizational mindfulness consists of 5 distinct processes: (1) preoccupation with failure, (2) reluctant to simplify interpretations, (3) sensitivity to organizations, (4) commitment to resilience, and (5) underspecification of structures. A closer look at these processes provides insight into the reconceptualization of pain management services and improvement.

**Preoccupation With Failure**

High-reliability organizations are preoccupied with failure and continually simulate the “what-ifs” to learn about how component parts of the organization integrate under varied conditions. Process or outcome failures and near-misses are considered measures and can be computed into a reliability score. Failure of pain management is typically defined in terms of documentation deficiencies, a process indicator, as opposed to pain severity as an outcome. A more appropriate preoccupation with pain management failure could occur if severity exemplified the outcome measure of interest. Unraveling the complexity to analyze failure of cases with patients reporting pain scores of greater than 7, for example, could help identify system defects not previously identified. Instruments such as the one used in a nationwide pain management quality improvement project are available to measure patients’ reported pain severity and satisfaction levels.

Analyzing pain severity as an outcome measure has the potential of uncoupling medical and nursing practice enabling assessment of each of the component parts. Identified severity scores managed as defects could provide insights to facilitate targeting pain improvements.

Because the unit level presents as the critical level of intervention to improve pain management, nurse managers become instrumental in identifying and remediating individual staff nurse performance. Severity outcomes would lay the groundwork for nurse managers’ uncoupling of nursing attitudes from other members of the team, helping to deconstruct the detrimental social cognition. Recruiting assistance from staff development nurses, well positioned to create the social learning environment to develop cognitive processes, would promote
uncoupling. Integrating newly skilled workers into the team to continually challenge well-established norms can be beneficial.\textsuperscript{15} Hiring new graduates into the team can dilute detrimental behaviors. Novice nurses may possess newer pain knowledge and management skills than their more experienced counterparts,\textsuperscript{38} possibly enlightened to challenge the status quo.

**Reluctance to Simplify Interpretations**

Oversimplification ultimately reduces the decision-making capacity of the individual at the bedside.\textsuperscript{36} Although simplification reduces variation, thus streamlining complex processes, an overuse of simplification as a strategy is detrimental in pain management. Oversimplification discounts the individuality of pain experience for patients. Attempts to promote EBPM have resulted in the implementation of a multitude of various diseases, surgical procedures, or technology-based order sets. Templates do not account for preexisting pain conditions such as cancer or arthritis and do not individualize pharmacological interventions. Accordingly, simplifying procedures artificially creates the perception that good pain management is easily performed and restricts collaborative dialogue. Simplification prevents individuals from gaining essential skills and pain management expertise that fosters a low level of judgment, an entity identified as “conceptual slack.”\textsuperscript{39} Clinical judgment in pain management needs to be fostered, not diminished. Nurse consultation services may provide needed support as long as the role expectation targets judgment development and not the provision of patient care.

**Sensitivity to Operations**

Sensitivity to operations refers to situational awareness.\textsuperscript{36} In pain management, situational awareness involves understanding patients’ pain within the context of their needs and overall goals. Routine, practitioner-centered order sets detract from the ability to appropriately respond to patient needs. Order sets preempt the required cognitive energy that prescribers require in individualizing treatments. Nurses are unable to intervene based on a pain assessment without first contacting gatekeepers. Reported pain severity or adverse effects are quickly answered with medication changes rather than thoughtfully titrating dosage levels.

Sensitivity to operations can be endangered by production or pressure overload.\textsuperscript{36} Pain management requires ongoing communication and relationship building for appropriate assessment, intervention, and reassessment. Allowing the needed time for practitioners to truly develop quality relationships and complete documentation is essential. Administrators are continually struggling with the need to capture reassessments in documentation. The struggle lays the groundwork to rethink production overload in terms of the job that nurses are accountable to perform. The hectic hospital environment can create barriers to developing sensitivity to operations.

**Commitment to Resilience**

Resilience is the ability of an organization to use change.\textsuperscript{36} The commitment to resilience is identified in an organization’s ability to quickly coalesce around an issue and then disseminate change as the new normal. There is formal support for improvisation coupled with an organization’s ability to believe and doubt old practice.\textsuperscript{36} Past practices prevail in pain management, with hospitals’ limited ability to adapt to change. High-tech interventions and routine assessment practices are built in today’s programming, yet the attitudes and behaviors inside the organization seem to perpetuate past practice.\textsuperscript{14} Organizational learning is stopped short when change becomes too intrusive, especially in physician practice. Accountability systems seem weakened because of the failure to have difficult conversations and broach long-standing sacred cows and individual preferences. Expanding existing quality systems to incorporate pain severity outcomes can symbolize the organizational commitment for EBPM. Data generated as a result of quality monitoring could be used to identify areas of improvement and promote new learning.

**Underspecification of Structures**

High-reliability organizations, in times of duress, can disregard hierarchy in deference to expertise and experience.\textsuperscript{36} Whistle-blowing is embraced, not feared. Although realistically constrained by practice laws, hospitals need to legitimize expertise in pain management and address gatekeeper practice deficits. Outcome measures as a result of deficient practices cannot be held in the balance, left solely on the shoulders of nurses who alone cannot change overall pain management practice.\textsuperscript{10,32} Failure to address physician issues in pain management promises to prevent pain management practice from attaining required outcomes.

**Conclusion**

Nursing administrators are key players in ensuring pain management programming effectiveness. Embracing the high-reliability paradigm may help redesign systems to blend individual, organizational,
and social change management strategies and increase the individual accountability of the practitioner for pain management outcomes. Redefining pain management success, developing staff capable in the art of managing complexity, considering the environment of a realistic practice, and developing systems where expertise, as opposed to hierarchy, prevails can only help to move pain management forward in a way that is meaningful and worthwhile for patients.

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References


