CHAPTER 3

Assessing Your Innovation and Evidence Capacity: Essentials for Organizational Infrastructures

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> *Life is not about waiting for the storms to pass . . . it is about learning how to dance in the rain.*
>
> —Unknown

CHAPTER OBJECTIVES

Upon completion of this chapter, the reader will be able to:

1. Examine the challenges and driving forces pushing organizational structure changes.
2. Assess a creative evidentiary approach for organizations transforming their organizations to accountable, evidence-driven systems.
3. Describe key competencies of leaders, managers, and caregivers in an evidentiary model.

INTRODUCTION

The passage of time necessarily brings new ideas, new people, and new expectations for all of us and, in particular, for the work we do in health care. Figuring out what to do to be relevant within a context that moves rapidly and with a mix of digital and manual processes can be overwhelming. What is important in this figuring out process is for each of us to reflect on where we are and where we can now move to as leaders

in creating the conditions for the ultimate integration of high levels of evidence and innovative processes.

In this chapter, we discuss the current state of leadership, an overview of the driving forces for changing to higher levels of innovation, the impact of the Internet, new approaches that integrate the evidence-innovation dynamic, and behaviors to transform to the desired organizational infrastructure, with an emphasis on professional accountability. In particular, emphasis is laid on the importance of a dynamic organizational infrastructure that includes defined processes and authority designations, and this is also aligned with desired behaviors to optimize value.

HISTORICAL STATE OF ORGANIZATIONAL LEADERSHIP: SANS EVIDENCE

Historically, there has been a lack of evidentiary thinking and working in organizations. In the past decade, however, much has been made of the high level of judgment and assumptions-based clinical practices that characterize all of the healthcare disciplines (Freshwater & Rolfe, 2004). The attempt to build evidence-based practice has raised a number of significant concerns regarding the foundations of judgment of clinical practitioners (McNamara, 2002). The evidence indicates that much weight has been applied to past practices, individual experiences, and traditional foundations of learning used in the formation of the body of knowledge upon which most practitioners base their own clinical judgments and actions (Smith, 2004). Of course, this foundation for behavior is quite unstable and unreliable—the inadequacies inherent in the dependence on past practice and individual assumptions cannot be understated (McSherry, Simmons, & Abbott, 2002). Even so, for most practitioners, in contemporary clinical situations the past remains the foundation of the vast majority of practice decisions and actions in the present.

This reality of uninformed and evidence-lacking decision making and action, which is readily apparent in clinical practice, is only extended and broadened when we consider leadership and management practices in health care. Indeed, much of management practice is based on an unbounded and wide variation of myth, whim, fancy, fad, and fashion (Malloch & Porter-O'Grady, 1999; Tourish & Hargie, 2004). In no area of human endeavor are there as many nonvalidated assumptions of practice and the management of human behavior as in the arena of management and leadership (Albrecht, 2003). Almost weekly, self-proclaimed management gurus announce new insights regarding leadership and management practice based solely on the expression of their own thinking and fantasy regarding what works and does not work in the leadership of people and organizations. Management and leadership are most bereft of any

continuous aggregated and related body of knowledge that would in any way validate the foundations upon which many of the practices of leadership and management are based (Drucker, 2001; Drucker & Stone, 1998; Mintzberg, 1990).

Contemporary notions of accountability would require the resolution of such a difficulty. Yet, new tomes appear weekly on the bookshelves attesting to emerging personal insights with regard to judgments of what makes effective leaders and what produces sustainable outcomes in business and service. At the same time, broad-based evidence of the lack of accountability and ownership with regard to personal decisions and actions in almost every arena is rife both in the United States and on the global stage, demonstrating the paucity of real and effective leadership. This lack of accountability and the corresponding lack of understanding regarding what accountability means underpins much of the problem associated with building an evidentiary foundation to leadership decisions and practices (McDaniel, 2004; Oliver, 2004; Price, 2006).

DRIVING FORCES THAT ARE SHIFTING ORGANIZATIONAL STRUCTURE

The rules of organizational engagement are changing significantly on the basis of the emergence of an informational and technological foundation for human experiences and practices (Trompenaars & Hampden-Turner, 2002). These emerging realities are calling organizations and leaders into a different contextual framework for leadership and the management of work (Wolper, 2004). Goals of improved process times, lower production costs, decreased costs, improved coordination and management of functional interdependencies, and time reductions continue to push organizations forward (Davenport, 2006).

Further, the information age is changing all the rules affecting structure and the processes associated with doing work, achieving outcomes, or producing products (Watkins, 2004). According to Scharmer and Kaufer (2000) and Castells (1998), the changes occurring because of the information age are significant, most notably the Internet. There are now social structures based on networks, an economy tightly linked to information, and cultures steeped in virtual reality. These changes call for rethinking of just about everything a leader does, from visioning to planning to collaborating to implementing to evaluating and on and on.

The new world taking shape before us necessarily impacts the very nature of health care and the ways in which healthcare services are organized, packaged, delivered, and evaluated. Specifically, the availability and sharing of information, the media used for knowledge transfer, the range and types of relationships among providers and patients,

and the time required to transfer and share information now require new structures, principles for communication, and outcome expectations for leaders. In particular, the information infrastructure is now able to aggregate huge volumes of data, correlate that information, integrate it, and report it clearly and efficiently.

The changes in how information is communicated, who can access information, real-time availability of information on the Internet, and the availability of digitized media for nearly every bit of information have uniquely impacted traditional organizational structure. These structures serve to define levels of authority, communication pathways, and span of control. The organizational chart at one time defined clear lines of accountability and role relationships believed appropriate for organizational effectiveness and efficiency. Now with the widespread use of the Internet, digital device real-time communication, and self-organizing networks, these boundaries have become blurred at best and nearly invisible in most organizations.

Three areas have significantly changed the nature of work: media communication, location of stakeholders, and time. **Table 3-1** summarizes the description and impact in these areas.

Table 3-1 Comparison of Traditional and Information Age Dimensions

	Traditional	Information Age	Advantages	Disadvantages
Structure for communication and authority designation Who is involved?	Organizational chart Vertical communication	Internet Social networks Open communication	Eliminates silos Increases integration of work products	Uncertainty with open communication Perceived loss of control and power
Media How is knowledge transferred?	Paper, books, video, audio	Digital	Consistency, quality of information	Lack of resources to implement
Space Where does it happen?	Physical buildings/offices Local	Virtual Nonlocal	Space available for open collaboration	Perceived loss of privacy
Time When does it occur?	Business hours	No limits 24 hours/day	Decreases lag time across time zones and between individuals	Blurs the boundaries between work and personal time

Media Communication

The manner of communication among healthcare stakeholders has changed significantly with the availability of transportable and real-time Internet-available information. Communication media have evolved from physical to electronic and from isolated to interactive. The assumptions related to the media or vehicle for transfer of information, including written, oral, and video modalities as the primary vehicles, are challenged in nearly every venue. The availability of text messaging, instant messaging, and social networks has contributed greatly to the new model for organizational structure. Communication with anyone now reflects increasing complexity; communication occurs at any time and in any place. Power relationships are now dramatically reconfigured. Communications between executives, managers, and staff are now horizontal, vertical, and diagonal, rather than up-and-down historical lines of authority and chains of command. According to Bennis, Goleman, and Biederman (2008), the effectiveness of an organization depends on the flow of information. Further, the organization's capacity to compete, solve problems, innovate, meet challenges, and achieve goals requires all the organization's intelligence—and this is directly related to the healthy flow of information. Attempts to formally control and limit communication are no longer effective.

No matter how well text is written, it is not an interactive medium. Paper was once the most reliable form for communication; now digital files are becoming the norm. Audiovisual media have also dramatically decreased the need for travel and physical presence. Physical presence has long been exchanged with a multiuser conference line. As global communication occurs quickly and efficiently with access to the Internet and a video camera, connections with multiple individuals in many locations are commonplace. With the introduction of affordable video conferencing, physical presence is less important. Heavy desktop computers have been replaced with flat-screen monitors and handheld devices. Data storage capacity is significant because sophisticated users have unlimited access to information on the Internet. Leadership roles have evolved to include roles of accessing, filtering, and interpreting information for others. With this rapid and prolific ability to instantly communicate comes further disruption of the organization requiring leaders to embrace the network of communications or attempt to maintain linear order. Both have advantages and disadvantages.

The changes in media availability will alter current work flows in the organization and require new ways to manage the decreased length of processing time, data storage, hardware, and software. Further, although media have been more readily available to others, it is nearly impossible for workers to access, interpret, and manage the information as quickly as it is now available. The limitations are now human personnel availability rather than the timely movement of media. Another interesting phenomenon is the challenges of privacy regulations and how to be compliant with them. In some cases, leaders are restricting access to text, web, and video media and are thus

restricting information flow into the organization, reinforcing a linear model of communication rather than the complex reality.

Another example of evolving communication is the creation of social media accounts by most senior leaders, inviting members of the organization to share ideas and feedback continuously. Rather than the traditional, formal face-to-face meeting, leaders are now accessible to employees with Internet access 24 hours a day, 7 days a week. Based on these changes, new assumptions about the structure of organizations are needed. The new infrastructure is now based on openness and minimal lines of authority or divisions of work units. Behaviors and structures that support unconstrained communication and open relationships are redefining the roles and accountabilities of both leaders and staff.

Stakeholder Location

The location of both providers and users of the healthcare system changed dramatically with the introduction of the Internet. Providers are now often remote while providing assessment, observations, and robotic interventions. As a result, the role of physical space and location is changing. The functionality and utility of physical space in many settings has shifted from accommodating both providers and users of the healthcare system to accommodation for the user of the system and the technology to support virtual services. Further, both the provider and user may remain in their own settings while the technology equipment is stored in central locations. Gathering together at common sites is becoming the exception rather than the rule.

In the current context of large and complex facilities, the physical space among individuals, offices, and geographical locations that once resulted in a delay in communication between individuals, as well as a delay in the transmittance of paper documents, is now minimized and in some cases eliminated. The need for individual office space is now questioned regularly. The utility and purpose of individual private office space and the affordability of spaces used that are used less than 10% of the time provide an opportunity for new configurations. Space for teamwork rather than individual work space is preferred. What is not clear is the appropriate mix of face time on-site and off-site in which communication occurs using audiovisual technologies. Even with the best technologies, physical gatherings remain an essential part of the work processes. To be sure, there is nothing better than a welcome hug from a longtime colleague or a welcoming hand extended to a new member of the team. As the organization moves forward, efforts will continue to determine how best to optimize human gatherings and available technology. New consideration about the use of physical space will focus on value, flexibility, and multipurpose use for both individuals and teams. Current examples include the repurposing of waiting areas to healing spaces, multiuser access to examination rooms based on need rather than specific ownership

of a room, and multipurpose telemedicine rooms supporting multiple providers. These changes require new approaches in managing virtual workforces and off-site clinicians to assure engagement in the organizational vision and mission while supporting a work–life balance.

Discussion: Media, Space, and Time

The changes from the Internet impact different generations in different ways. Convene a group that includes representatives from as many generations as possible and explore the following topics:

- Ask each person how he or she has been impacted (or not) by the changes in media, space, and time.
- What practice changes have been necessary to accommodate the ready access to individuals and data?
- Are there innovations or changes that could assist all generations with these advances?

Time

Traditionally, work was accomplished at the workplace during specified hours. With the Internet, the time parameters for availability and access to data are forever blurred. Shared files and social networks now make connections possible at any time in any location across the globe. Waiting time for global dialogue is nearly nonexistent and often dependent only on the work and sleep schedules of individuals around the world. No longer is the individual waiting for the mail to arrive—an e-mail is waiting!

Further, traditional shift times and lengths may be even more flexible as virtual care is integrated with physical, on-site care. Research on fatigue of caregivers identified issues of compromised competence near 12.5 hours in a 24-hour period or 40 hours in 1 week (Geiger-Brown et al., 2012; Martin, 2014; Rogers, 2002; Stimpfel, Lake, Barton, Gorman, & Aiken, 2013). Different shift lengths or rest period intervals may be required with increased screen monitoring work.

MORE THOUGHTS ON THE IMPACT OF THE INTERNET

To be sure, the unceremonious dismantling of traditional organizational structures and processes increases the chaos in healthcare organizations. Necessarily, the evolving organizational infrastructure is dynamic rather than static and stable. The available digital world requires leaders to continually challenge the expectations of turnaround

time and access to individuals related to organizational communication, interdisciplinary collaboration, the location of providers and patients, and the time frames in which this work can occur.

While these advances are exciting to many individuals, some individuals are resistant to the shifts to the digital world. The resistance is part of the transformation to a new paradigm and necessarily increases chaos and complexity for the leader. The resistance to advancement of an evidentiary paradigm may in fact be driven by the historical absence of focus on evidentiary thinking and processes.

It is important to remember that the role of leaders in an evidence–innovation dynamic is relatively new but critical to organizational effectiveness. Creating evidence to support the evolving organizational structure dynamic is an imperative for successful organizational performance.

If your actions inspire others to dream more, learn more, do more and become more, you are a leader.

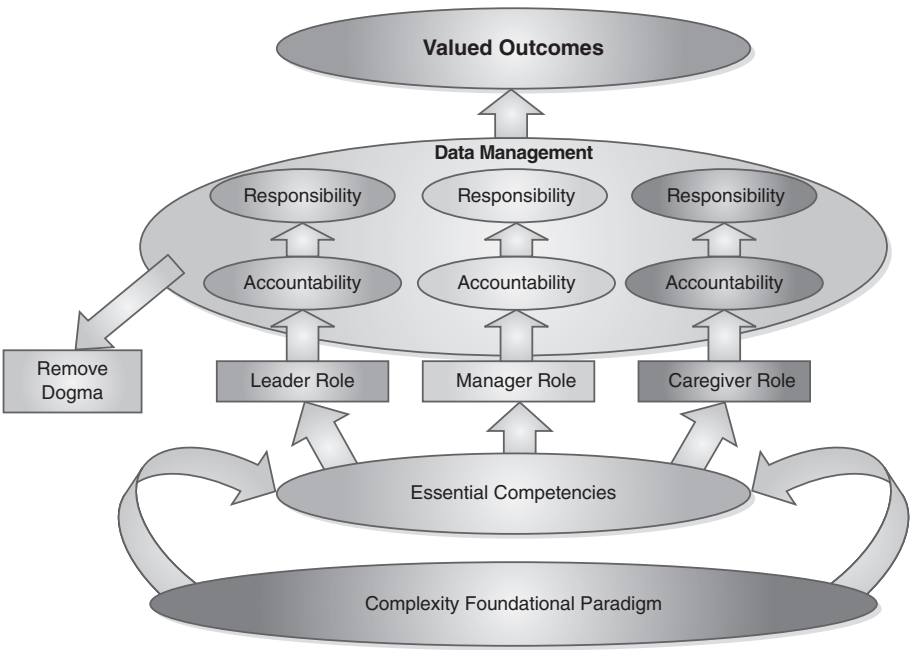
—John Quincy Adams

MOVING FORWARD: RETHINKING ORGANIZATIONAL STRUCTURE AND ROLE ACCOUNTABILITIES

The transformational work for leaders begins with an end in mind; a desired state that is believed to achieve value for the users of the organization. An assessment and gap analysis on the basis of organizational context and professional roles begins the process. In the next section of this chapter, new thoughts on the foundational framework for this work and specific changes in role obligations and behaviors are discussed. Necessarily, this work must be fully sensitive to and carefully integrated into the organizational culture—the underlying assumptions, defining values, and artifacts that embody the organization. The behaviors and norms supportive of new expectations include a vision and infrastructure that continually support and develop the capacity to change, the capacity to evaluate and integrate changes resulting from digital innovations, increased communication access, media management, and expedited work flow. **Figure 3-1** reflects the proposed evidentiary dynamic and the intersecting components.

Stability is no longer the goal for the healthcare leader; the goals now support continual evaluation of new ideas while ensuring that competent and safe patient care is provided. The emphasis on high-reliability organizations is now more actively tempered with the notion of focus and accountability on the work being done with the understanding that procedures necessarily will change. The emphasis must not be on

Figure 3-1 Evidentiary organization: Dynamics and intersection components



completing high-reliability checklists and redundancies; the emphasis, or time out, needs to focus on defining the team's goal: what is the team doing, and is it the right thing? Are we using the most contemporary, evidence-based approach for the work we are doing?

Now, the challenge for the leader is how to facilitate the development of essential roles, accountabilities, competence, and expectations in team members for excellence in patient care services and simultaneously ensure flexibility and openness to new and emerging processes. The desired healthcare culture is no longer able to solely support cultures of rote performance based on standards, practices, and technology developed yesterday and achieve the optimal outcomes of today and tomorrow. The continual evaluation and introduction of new work processes and technology require higher levels of presence and engagement than ever thought possible.

In addition to the expectations for evolving work processes, an increase in diversity competence is expected. Patients are now from a global, virtual world that is increasingly diverse. Caregiver knowledge of multiple cultural traditions, beliefs, and values is foundational. An increasing challenge is for the caregiver to sublimate personal values in deference to the patient's unique values. Providing patient care services from the

perspective of one's social obligation as a provider now assumes more significance in the global world. Preferences for treatment modalities, family involvement, life and death rituals, and so the role of the caregiver vary more widely now, based on the individual patient. Now more than ever the provision of person and family-centered care is essential (Barnsteiner, Disch & Walton, 2014). The best decisions for the patient based on his or her beliefs and values must now be supported by structures and processes in the healthcare system as the norm rather than the exception.

As such, leadership staff is called to skillfully and persistently work to transform the organizational culture to be less reliant on traditional static authority-based communication structures to a more dynamic infrastructure that recognizes interrelated and intersecting roles and communication across complex networks. These changes are only now possible because of our increasing capacity to apprehend organizational complexity brought about by the Internet. Necessarily, the traditional box and line organizational diagrams need to go by the wayside because there is no information to be gained from them. The Internet, as previously noted, has eliminated hierarchies and standard lines of communication, thus the historical diagrams do not provide direction or information for members of the organization.

This endeavor requires a series of steps that begin with personal and organizational reflection and a call to the table of the most senior leaders to generate both a framework and a set of expectations with regard to evidence-based decision making and action taking (Giacco, 2003; Wager, Wickham, & Glaser, 2005). Reflection at the highest levels of the organization and the construction of evidentiary foundations upon which strategy, tactics, performance, and outcome measures can be based, create a foundation from which data that builds evidence-driven practices can emerge. Further, their relationship to positive impacts and outcomes can be established. These steps include transformation to a complexity-driven foundation, creation of clear accountability expectations for role performance, and development of a sophisticated data management infrastructure.

COMPLEXITY: MOVING FROM STATIC TO DYNAMIC PARADIGM

Recognition of the nature of the complexity in organizations is an important step in beginning the transformation. In quantum thinking and within complexity-defined systems, change is a constant, a fundamental dynamic of existence. In this circumstance, change is an existential condition, uncontrolled, beyond human manipulation; it is also a fundamental characteristic and operation of the universe (Blum, 2006). Complexity and complex systems thinking and research have provided a strong contemporary foundation for rethinking and reconfiguring the leadership and management and

caregiver roles in complex organizations (Murphy, Ruch, Pepicello, & Murphy, 1997; Shan & Ang, 2008; Suh, 2005; Zimmerman, Lindberg, & Plsek, 1998). Thus, the organizational structure must now be influenced by these complexity attributes.

Accomplishment will prove to be a journey, not a destination.

—Dwight D. Eisenhower

The most important element to shift to an evidentiary framework for the leader is the recognition that past leadership practices have been guided by linear, cognitive, and rational processes that reflect rather predictable changes in processes and outputs. In the new environment, decision making and action must reflect more nonlinear and quantum influences in human dynamics and behavior. The evidence-based leader understands that human (and, therefore, health) behavior, is such that change is better conceptualized, understood, and addressed through the lens of complex adaptive/responsive processes (Ang & Yin, 2008).

The attributes of nonlinearity, self-organization, uncertainty, emergence, interaction, intersection, and limited span of control describe the nature of complex organizations. The complex systems literature has demonstrated the power and influence of self-organization and emergence within organizations (Miller & Scott, 2007). This new research is revising the foundations for understanding leadership practices and behavior and even reconceptualizing the role and application of leadership in organization decision making and actions (Morrison, 2007).

Much of the work on complex systems sciences emerged from the biological, social, and physical sciences. The convergence of those data revealed patterns of behavior that emerged from examples of interacting and intersecting human societies, e-systems, ecosystems, the human brain, and bee colonies, among others (Rouse, 2007). These various exemplars of systems now serve to inform our understanding of the role of the leader and the interactions of leaders with and within the systems of which they are a part (Stacey, 2007).

A larger question related to complex systems is how much control should be exercised by the agent of control (the manager) within systems—in this case, within the healthcare system. We know that varying levels of agency control are evident in a variety of systems. For example, on the Internet, almost no central control is exerted. In contrast, in the military and the solar system, high levels of control are exhibited. In the human body, intermediate interacting levels of control are evidenced.

Degrees of criticalness also influence level of agent control. In highly critical circumstances, where the life of an organism or system is directly and dramatically

threatened, high levels of control are necessary to stabilize the system and bring it back into balance. By comparison, in systems with a high level of equilibrium and good responsive interface between external environmental challenges and demands, and internal mechanisms of response, low levels of critical condition exist and, therefore, there is a reduced need for levels of agent control (Solow & Szmerekovsky, 2006).

Within the frame of complexity, there is the understanding that complex adaptive systems represent a highly complex dynamic of interacting and intersecting forces operating externally and internally, constantly affecting the life of the system (Yin & Ang, 2008). For example, the management of a patient in a critical care unit requires much more agent intervention surveillance and intensity than does the management of a patient in a long-term care facility or hospice setting. In many day-to-day nursing activities and work flows, increased control by management can actually inhibit the ability for the frontline care provider to use the best evidence, exercise clinical judgment, or practice at the top of his or her license. Excessive control and micromanagement removes adaptability from the system.

The degree of agent control and manipulation of circumstance and relational variables leads to different agent roles and relationships with respect to the amount of control needed or desired. Evidence-based management perceives this relationship in terms of the complex network of intersections and interactions and the degree of internally generated locus of control or the degree of external management of control. In broad terms, the incidence of emergent leadership and its influence on decision making and action may be directly related to the level of agent control, ranging from highly critical (greatest agent control) to highly self-managed (least agent control). For example, the greatest agent control would be for a leader to assign a project and the project plan to the team complete the work; in the least control situation, the leader would assign problem resolution (outcome) to the team to determine what the process and approach should be to address the problem. The next area of assessment for the leader is assuring the presence of an evidentiary dynamic—a dynamic that fully integrates operations and innovation as well as the transformation between them.

Integrating Operations and Innovation

In current organizations, increasing efforts to address complexity are seen in the establishment of innovation centers or departments to support and assess new products and processes—processes that are congruent with a complexity paradigm in which uncertainty is the norm, and emergence, and highly interacting and intersecting relationships are present. **Box 3-1** includes common strategies currently used by organizations to generate new ideas and processes. The contemporary organization requires an infrastructure that effectively supports both the linear, predictable, evidence-based processes in routine operations alongside the integration of innovations to replace

Box 3-1 Tools to Advance Change and Innovation

- Deep dive: A particular area is selected for observation in multiple ways. Work flows, photos, interviews, and observations are gathered by a team to analyze current processes and brainstorm new ways of doing the current work processes (Kelly, 2005).
- Directed creativity: A situation is proposed to encourage and advance new ideas. For example, individuals are presented with the following scenario and directed to respond: A new unit is being designed for medical–surgical patients. If there were no limits on space, technology, resources, staff, or financial resources, how would you design the unit for the future in a way to dramatically improve the cost and quality of the healthcare experience (Plsek, 1997).
- Mind mapping: Mind mapping is a software tool for collecting, organizing, and synthesizing large amounts of data in layers, with complex relationships. It is a very useful tool for documents connectivity, interdependencies, and emerging phenomena in health care.
- Innovation space: An innovation space is a place or laboratory where inquiring minds collaborate to create a more livable and sustainable world focused on developing products that create market value while serving real societal needs—products that are progressive, possible, and profitable (Boradkar, 2010).
- Brainstorming: A collective exercise process to generate ideas. A good exercise generates 100 ideas. This is different from directed creativity in that brainstorming focuses on suspending judgment and criticism, encourages freewheel thinking and quantity of ideas, and builds on the ideas of others (Endsley, 2010).

outdated operations at the appropriate time as well as an openness to testing and implementing new ideas. Oftentimes, this seems contradictory; however, in an evidentiary dynamic model, both the evidence-based work and the creation of new evidence from innovation must be supported in an ongoing process. Traditional organizational models have segmented innovation from routine operations and limited the flexibility and responsiveness of the organization.

The accelerated velocity of the introduction of new ideas further supports the need for an integrated approach to an advancement of innovation and an emphasis on the transition from innovation to operation. More importantly, there is a need to integrate the work of innovation with the work of each particular role. New ideas should be generated and developed in ways that take into account the perspectives of point-of-care knowledge workers. In a complexity-driven organizational model, the lines among operations, innovations, and transformation become blurred as responsibility and accountability behaviors are elevated and particularized for each role in the organization.

In an evidence-based framework, engagement and involvement inside the innovation process reflect the least intensity of agent control, allowing the greatest freedom in an environment that fosters successful innovation. Ready access to all of the supports, resources, tools, and processes that facilitate the energetic and free-flowing activities of creativity would be essential to innovation. The manager in this case would create conditions and circumstances that permit this more open dynamic to thrive. By contrast, emergence of this type of control would be less likely in a situation where the variables need to be tightly manipulated and managed with narrowly defined but clearly applied manager (agent) control, such as in situations involving employee discipline, critical interventions, system control (such as in a prison), or terrorism. The next section presents a discussion of the transformation of three essential professional roles.

LEADERS, MANAGERS, AND DIRECT CARE PROVIDER ROLES IN AN EVIDENTIARY DYNAMIC

Three major roles are required in an evidentiary organization: leader, manager, and caregiver. Each of these roles has distinct descriptions. **Table 3-2** provides an overview of the essential elements of each role and the supportive accountability, responsibility, and value for each role. Note that each of these roles is considered a knowledge worker's because his or her work is based on knowledge capital and includes nonroutine problem solving and creative thinking (Reinhardt, Schmidt, Sloep & Drachsler, 2011).

First, the leader role is accountable to create the organizational context for value creation—a context that provides the support necessary to ensure that appropriate decisions and actions are undertaken along with adequate resources for the work and desired outcomes. Like all roles, the leader bases decisions on evidence and the importance of creating new evidence where none is available. The leader is aware of the confluence and consonance of interactions among external environmental forces and internal relational, operational, and behavioral responses to an ever-changing set of circumstances (Frandkov, 1999). Members of an evidentiary community reflect attitudes, competencies, and specific role behaviors to support the transformed organization.

The role of leadership in this movement is self-evident. Because leaders have the predominant role in creating the context and providing the supports necessary to ensure that appropriate decisions and actions are undertaken, resourcing and applying structure to these new models are obligations of the leader role. Performing this role effectively requires clarity of the conceptual role, personal knowledge, leadership principles, collaboration, synthesis, knowledge management, and mentoring. Aware and informed healthcare leaders stay abreast of the changing conditions and context for the application of clinical service. Through deliberation and dialogue at the strategic and tactical

Table 3-2 Evidentiary Organization: Key Roles and Accountabilities

	Knowledge Workers[a]		
	Leader Role	**Manager Role**	**Direct Care Provider role**
Accountable for: • **Doing the right work** • **Focusing on the product and results of work; the actual difference the work makes**	• Creates the context for accountability, responsibility, and value creation • Recognizes the action of complexity and the value of establishing new roles responding to current circumstances • Recognizes the confluence and consonance of interaction between external environmental forces and internal relational, operational, and behavioral response to an ever-changing set of circumstances • Assures there is support necessary for appropriate decisions and actions, resourcing • Integrates an evidence-based value set • Creates the data infrastructure	• Facilitates the planning and construction of designs for creating infrastructure and processes that support point of service, evidence-based data integration and translation of its utility into clinical practice • Applies contemporary research and theory of complex systems, and translation and use of this information in the workplace • Develops the infrastructure for evidence-based processes through the analysis of patterns within the system • Applies clinical research and theory of complex systems and translation, and use of this information in the workplace • Manages data relationships – establish the attachment between data and clinical decision making at the point of service; data are available and integrated for effective decisions	• Accountability for performance and achievement of clinical outcomes rests exclusively and solely with the competent practitioner • Seeks out and uses all available evidence/data to make decisions and provide care

(*Continued*)

Table 3-2 Evidentiary Organization: Key Roles and Accountabilities (*Continued*)

	Knowledge Workers[a]		
	Leader Role	**Manager Role**	**Direct Care Provider role**
Responsible for: • **Doing the work well**	• Provides effective systems, structures, and resources for the work to be done	• Provides effective infrastructures for patient care recognizing complexity, interrelationships, and current evidence within patient care dynamics	• Provides evidence-based, state-of-the-art patient care that results in the desired value to the patient and family
Valued Outcomes	• Increased health of populations served • Increases evidentiary resources • Goodness of fit between desired outcomes (value) and effective processes associated with obtaining them • Sustainable		

[a] Knowledge worker: An individual whose main capital is knowledge and has an emphasis on nonroutine problem solving that requires a combination of convergent, divergent, and creative thinking.
Data from Reinhardt, W., Schmidt, B., Sloep, P., & Drachsler, H. (2011). Knowledge worker roles and actions: Results of two empirical studies. *Knowledge and Process Management, 18*(3), 150–174. doi:10.1002/kpm.378

levels of the organization, these managers facilitate the planning and construction of designs for creating infrastructure and processes that would support point-of-service, evidence-based data integration and translation of its utility into clinical practice.

The manager represents the contemporary application of the theory and research of the action of complex systems and the translation and use of that understanding in decisions and actions in the workplace. For the manager, just as for the clinician, the development of the infrastructure reflects the application of complexity theory and complex adaptive systems to the work relationships, behaviors, and structures constantly

operating to influence clinical practice and outcomes. The manager recognizes the action of complexity and the value of establishing the evolving role factors, including new roles responding to the current circumstances and the activities unfolding within them.

The manager's requisite abilities related to scanning, predictive capacity, and adaptation now come to bear as a critical skill set in the creation of the structures and processes in support of contemporary evidence-based initiatives (Hesselbein, 2002). Indeed, managers represent in their own practice and performance the use of evidentiary strategies and tactics in advising decisions and taking actions related to resource use, demonstrated in their own management of human, fiscal, material, support, and systems accountabilities. The role played by strong, evidence-committed management leaders is enhanced by their willingness to both model and mentor evidentiary dynamics as the appropriate contemporary framework within which all work relationships and clinical performance unfold. Caregivers are accountable for the performance of patient care interventions and the achievement of clinical outcomes using the latest evidence-based interventions. In particular, caregivers are owners of their nontransferable capital and capacity of the application of their work. Their knowledge is mobile and portable; that is, their knowledge goes with them wherever they go.

After the role descriptions are clear for the leader, manager, and direct care giver, the associated accountabilities are identified. These distinctions are necessarily driven from evidence rather than experience and intuition.

ROLE ACCOUNTABILITY, RESPONSIBILITY, AND KNOWLEDGE OWNERSHIP

Each of the described roles have associated behaviors to support a complex system in which evidence and innovation are inexorably interwoven and reflect clear expectations for professional accountability, responsibility, and the management of knowledge.

Accountability

In knowledge work environments such as hospitals and healthcare systems, the notion of accountability takes on special meaning. Knowledge workers own the means of their own capital, and this means is now as significant as any other sources of capital and human-intensive organizations (Reinhart et al., 2011; Sveiby, 1997). Knowledge workers have an individually driven sense of ownership with regard to their knowledge and its demonstration in the applications of work (Hooker & Csikszentmihalvi, 2003). Embedded in this understanding of knowledge work ownership are the mobility and portability of that knowledge because the knowledge worker carries the knowledge wherever he or she operates in the system. This flexibility is another important consideration

with regard to accountability. Knowledge workers do not transfer the locus of control for their accountability to institutions, organizations, or others outside their knowledge work community. Accountability for the performance and achievement of outcomes rests exclusively and solely with each role. Accountability for creation of the context of accountability rests with the leader. Accountability for facilitating and designing the infrastructure for practice rests with the manager.

This notion of ownership in relationship to accountability is critical to the professional knowledge worker; it also informs the management of these workers. As such, ownership for the work of practice does not transfer to the management role, and managers cannot be held accountable for the outcomes of practice owned by the caregivers whose capacity and competence are essential to both achieving and sustaining outcomes (Porter-O'Grady, 2000). Because ownership is invested in each role, if the desired outcomes are to be achieved, the role of management is to create an organization and systems context that facilitates, supports, and encourages the ownership and expression of accountability (Albrecht, 2003).

In short, the accountability of management differs in important ways from the accountability of the direct care provider. The effectiveness of work and the achievement of outcomes belongs to the knowledge worker caregiver; the creation of context that frames and supports the work and accountability of staff is the source of accountability for management (Dotlich & Cairo, 2002). The outcome of the knowledge worker management role is the same as that of the knowledge worker staff: effective patient care that leads to positive clinical outcomes. However, accountability for achieving those ends is significantly different in a management role as compared to the knowledge worker staff role. The activities associated with one are differentiated from the activities associated with the other. Yet, both roles are necessary to create the dynamic—the intersection—necessary to sustain performance outcomes.

Discussion

Accountability is a concept often bandied about and misinterpreted. After there is understanding that accountability requires the licensed person to perform interventions as indicated for the patient, there are often challenges from others to modify practice. Consider the following situation:

You are instructed to discontinue protective isolation by the chief executive officer (CEO) because the patient's family has a high profile and does not want to be bothered. Using the principles of accountability, how would you handle this? Can the clinician take directions about patient care from the CEO?

Management accountability relates to the quality and integrity of the direction, and infrastructure of systems, and the degree of integrity of their relationship with the work and performance outcomes of the knowledge worker stakeholders. In partnership with knowledge workers, the leaders of the organization aggregate the efforts of systems and people in a mosaic of intersection and performance that networks strategy, infrastructure, resources, and knowledge work in the configuration (a dance, if you will) of consonance and contribution that advances both the clinical outcomes for patients and the organizational viability of the system (Pidd, 2004).

Indeed, managers represent in their own practice and performance the use of evidentiary strategies and tactics in advising decisions and taking actions related to resource use, demonstrated in their own management of human, fiscal, material, support, and systems accountabilities. The role played by strong, evidence-committed management leaders is enhanced by their willingness to both model and mentor evidentiary dynamics as the appropriate contemporary framework within which all work relationships and clinical performance unfold. As the new context based on complexity emerges within the three foundational roles and accountability expectations, there are four competencies or attitudes that are also essential behaviors within each of these roles.

Competencies

There are four essential competencies or attitudes for all members of the organization: inquisitive, vulnerable, inclusive, and proactive. **Table 3-3** presents the core content of each competency and role expectation for the leader, manager, and direct caregiver. These are often challenging to identify objectively; however, the results of these competencies are evident in the increasingly successful outcomes of the organization at the individual, organization, and community levels.

Inquisitive

Successful individuals are continually inquisitive about the nature of the work, the factors impacting and the evidence supporting current work, and new ideas that are being introduced. In particular, individuals demonstrate a high regard for and value creativity, have an openness to new ideas, are comfortable in challenging assumptions, and can see conflict as diversity. As agents of change, these individuals are continually enhancing their knowledge of innovation and change content, tools, processes, and challenges. Knowing the science and art of innovation is essential.

There are numerous descriptions and definitions of innovation (**Box 3-2**) that guide the work of innovation leaders. As knowledge in innovation leadership emerges, more descriptions will be presented. The skeptic often dismisses innovation with the belief that nothing new ever really occurs; rather it is only new combinations and iterations of existing products and processes that occur. This approach may indeed be an

Table 3-3 Evidentiary Competencies: Basics for Advancing New Work in Complex Organizations

Competency	Core Content	Role: Leader, Manager, Caregiver
Inquisitive	Innovation knowledge Self-knowledge; personal management; self-care	Knowledge system manager Data manager Role knowledge
Vulnerable/ courageous	Courageous Challenges practice and assumptions for increased understanding and improvement Open to new ideas	Experimenter and tester of new ideas
Inclusive	Relationship builder	Facilitator of individuals and teams to achieve value; coach, mentor, collaborate Diversity facilitator; conflict embracer/engager Technology versus humanness
Proactive	Synthesizer; strategist	Critical strategist and value creator; business case creator

example of a delaying tactic and does little to address the need for the organization to be contemporary in its work. Becoming tangled in the conceptual precision discussion may serve only to delay meaningful discussion and attention to the future.

Individuals are also inquisitive about their own personal skill sets. Self-knowledge and competence with innovation and change further assist individuals. A clear understanding of one's personal strengths and limitations as they relate to the evidentiary dynamic is essential to create the business case for developing new ideas.

Assessments of decision making, communication, and conflict resolution styles are foundational areas of focus in self-knowledge assessment. The Myers & Briggs (http://www.myersbriggs.org) and DiSC (http://www.profiles4u.com/what-is-disc-profile.asp) assessments are examples of helpful assessment tools for individuals. Although individuals often overemphasize self-assessments to learn about styles, strengths, and limitations, the label or category into which the individual falls should never be the primary focal point. Rather, the information about styles is intended to provide insight into an overall set of behaviors and does not reflect all activities. The ability to understand others and collaborate with multiple styles in multidisciplinary teams are essential competencies.

Box 3-2 Change and Innovation: Common Descriptions

- The implementation of new or altered products, services, processes, systems, organizational structures, or business models as a means of improving one or more domains of health care quality (AHRQ Health Care Innovations Exchange)
- Anything that creates new resources, processes, or values or improves a company's existing resources, processes, or values (Christenson, Anthony & Roth, 2004)
- The power to redefine the industry; the effort to create purposeful focused change in an enterprise's economic or social potential (Drucker, 1985)
- The conversation of knowledge and ideas into a benefit that may be for commercial use or for the public good; the benefit may be new or improved products, processes, or values (Christenson et al., 2004)
- The power to redefine the industry; the effort to create purposeful, focused change in an enterprise's economic or social potential (Drucker, 1985)
- A new patterning of our experiences of being together as new meaning emerges from ordinary, everyday work conversations (Fonesca, 2002)
- The first practical, concerted implementation of an idea done in a way that brings broad-based, extrinsic recognition to an individual or organization (Plsek, 1997)
- A historic and irreversible change in the way of doing things; creative destruction (Schumpeter, 1943)
- Emergent continuity and transformation of patterns of human interactions understood as ongoing ordinary complex responsive processes of human relating in local situations in the living present (Stacey, 2007)
- Innovation is something new, or perceived as new by the population experiencing the innovation, that has the potential to drive change and redefine health care's economic and/or social potential (Weberg, 2010)
- Fresh thinking that leads to value creation (Vaitheeswaran, 2007)

Individuals also assess their information processing and thinking systems styles as a means to excel. The relationship between emotions and intellectual content is important in understanding not only one's personal style, but also the abilities of others. Consideration is also given to understanding rational and experiential information processing styles (Cerni, Curtis, & Colmar, 2008). Rational processing is analytical, intentional, logical, and slower, whereas experiential information processing is holistic, automatic, associative, and faster. Necessarily, both modes of processing are required to be effective. Areas of strength and areas of development opportunities guide professional development and growth.

Self-care is another area the individual focuses on as part of the self-knowledge assessment. The individual's sense of self is well developed along with the importance of maintaining high levels of performance and wellness. The work in an evidentiary organization is demanding and unrelenting, requiring individuals to be healthy, energetic, and resilient. Oftentimes there is a need for a little bit of narcissism—self-care is essential for energy renewal for the innovation leader. Taking time to balance work with one's personal life is essential to sustain high levels of performance and productivity.

Vulnerability

The second competency is about vulnerability—being open and comfortable with uncertainty and being comfortable with the limitations of one's knowledge (Whitehurst, 2015). Vulnerable individuals are comfortable with the fact that one can never know everything and that this perpetual incompleteness is a fundamental trait of all individuals. The essential work is connecting and creating meaningful relationships with others who have different areas of expertise.

Courage is an element of vulnerability in that the individual is willing to discuss sacred cows and challenge long-standing practices and dare to eliminate obsolete healthcare dogma and not being afraid of criticism or ridicule that might result. This courage also guides the innovation leader in facilitating effective and difficult dialogue. When things are not going well, the individual examines and evaluates the situation and facilitates appropriate course correction quickly. This course correction emphasizes learning from experience without ascribing blame to anyone.

Inclusive

The third competency is about being inclusive of multiple individuals and points of view. As a collaborator, individuals demonstrate high-level competence in listening, encouraging feedback, and conflict utilization. Differing perspectives and values are not seen as conflicts to be resolved or mediated, but rather as an expression of diversity. Many obstacles are encountered along the innovation continuum. Individuals, equipment, resources, and time can all be the source of conflict among team members. The innovation leader perceives conflicts as opportunities to learn more about the issues and to gain insight into the values and beliefs of others. The leader avoids efforts to neutralize or minimize the differing opinions until more information is gained. Necessarily, the innovation leader is a master change facilitator and is able to use conflict as an opportunity to gain further insight of pertinent issues.

For individuals in this type of organization, effective collaboration is about moving from a group of assembled individuals to a team of highly interactive, participative, goal-oriented individuals. Individuals thrive in multidisciplinary teams—the fundamental unit in the organization. The individual is always considered incomplete because one can never know all there is to know. Working alone or in single-discipline

dialogue is inefficient and ineffective. Transdisciplinary dialogue is the norm to address issues of complexity and innovation. The innovation leader is patient, tolerant, and interested in diverse discussion to facilitate teamwork. In fact, innovation leaders seek out those known for strong opinions, the ability to challenge others, taking risks, and thinking creatively. In addition, the goal of being inclusive is about learning from others to find common ground while avoiding the rubber stamps of prattled conversation. Principles of appreciative inquiry guide interactions.

Teams often include disparate disciplines, such as clinicians, engineers, computer specialists, designers, and representatives from several generations and ethnic cultures. Courageous individuals are role models in the activities of challenging traditional norms and practices, and confronting each other when resistance is evident. As team members, they encourage comments on others' ideas; withholding feedback is considered counterproductive to the entire process. The goal is for sharing feedback to be a core behavior, rather than optional.

Within each role of leader, manager, and caregiver, the attitude of inclusiveness begets facilitation, coaching, and mentoring. Individuals facilitate the development of innovation principles and strategies among colleagues, adult learning, and the importance of system change. Further, individuals work to empower the creative genius in others. Creative genius is that part of each individual that has a possibilities-oriented, can-do attitude and way of being that communicates to everyone that anything is possible; it is about being full of excitement, energy, and ideas (McGlade & Pek, 2008).

These contextual attributes are realized in the dynamic evidentiary organization in which communication is encouraged and permission is not required to collaborate with others across departments and levels in the organization. There is a spirit of candor and a free flow of information without fear of criticism or reprisal. The reality is that some individuals have information at different times, and sharing ideas informally can increase the organization's capacity to solve problems and meet challenges. The goal is to use information to support optimal organizational performance; it is not to gossip or engage in one-upmanship competitions.

The behaviors of all individuals should reflect communication in an unrestricted manner, interest in new ideas, and willingness to challenge long-held assumptions. This open culture requires tolerance for the possibility of error and a climate in which errors can be discussed freely and the underlying causes investigated and corrected quickly (Whittingham, 2003). The successful culture is one in which leaders are competent across organizational operations, transformations, and innovations.

These competencies assume a high level of trust among individuals in the organization. As the culture evolves, greater trust is earned with much effort and consistency of behaviors. The culture is truly brought to life by the leaders of the organization as they role model their competencies. To be sure, this is an iterative process of cultural evolution and development of leader expertise.

Proactive

The fourth competency is about being proactive, about thinking into the future. Individuals want to be actively planning for a better future. The leader moves from reliance on historical knowledge to imagining, intuiting, inspiring, and reflecting the present as the means to the future (Scharmer & Kaufer, 2000).

The proactive individual demonstrates competence as a synthesizer and strategist and thrives with the rapid and continuous introduction of new ideas, processes, technology, and equipment. Managing and gathering large amounts of data to elicit evidentiary adequacy, value, and potential outcomes further exemplifies performance. Information is quickly synthesized from multiple sources to create a comprehensive set of next steps for advancement using the wisdom of all team members and combined into a critical mass of expertise. New ideas are introduced after careful analysis using a business case for innovation. Individuals formulate key data into formal documents to identify the value of new work, the level of current evidence, and its clear relationship to the mission and vision of the organization.

From this proactive, evidence-building approach, creation of the business case becomes powerful. A business case or the rationale for expenditure of resources under certain circumstances is essential to support appropriate resource allocations (Burns, 2005). The elements of a strong business case for innovation include the following:

- A description of the new product or service
- The intended purpose or goal of the innovation
- Projection of costs specific to accomplish the innovation
- Costs excluded from the proposal and rationale for exclusion
- Projected benefits and rationale for valuing of benefits
- A timeline for the project from initiation to benefits realization
- Anticipated profit or loss
- Expected nonfinancial benefits
- Anticipated risks and plans to mediate risks
- Overall summary of both short-term and long-term value to the organization and community (https://www.nibusinessinfo.co.uk/innovationgrowth)

Within these major categories of the innovation business case, information specific to anticipated productivity changes, reductions in cost, market share, patient quality outcomes, new partnerships, and risks for not moving forward, such as losing market share, productivity loss, employee turnover, and profit margin, must be included. Further, information, that identifies how the new work could differentiate the organization from competitors, benefit multiple constituencies in the organization, and extend the life of the organization as a value-producing entity, is an important element of this business case (Merrifield, Calhoun, & Stevens, 2008).

Building the strategic business case for new and untested ideas requires a modified approach from preparing a traditional business plan because of the unknown outcome of the innovation and the inadequacy of operational tools for innovation. Creating a sustainable budget or projection for an innovation requires knowledge about the past, which may be completely irrelevant, and estimations about the future that include cost of materials, technology, and human resources, and expected revenues. Christensen, Kaufman, and Shih (2008) identified the challenges in creating the business case as the lack of good financial tools to understand the market, build brands, find customers, select employees, organize teams, and develop strategies to advance the work. Specifically, when an organization relies on traditional discounted cash flow and net present value to evaluate investment opportunities, the real returns and benefits are often underestimated. Consideration of fixed and sunk costs using traditional models creates an unfair advantage on challengers and inhibits incumbent firms that attempt to respond. Finally, the emphasis on earnings per share as the primary metric for success diverts resources from investments whose payoff occurs at a much later date. According to Christensen and colleagues (2008), although these tools are good for operations, they create a systematic bias against innovation. It is challenging but not impossible to create the case for new work processes and products given the need for improvements in patient safety and quality outcomes. These four competencies are essential areas for growth and development of contemporary healthcare workers as they continue to develop high-level professional accountability. In addition, each role in the evidentiary organization must be able to access and manage the appropriate data for specific role accountabilities.

EVIDENCE-DRIVEN DECISION MAKING AND ANALYSIS: MANAGING DATA AND MORE DATA

In an evidentiary dynamic organization, management of data by all three roles is critical. To be sure, all organizations are awash with data. It is not so much the collection of data that is important, but rather the ability to use those data, analyze them, and make decisions and take action based on what the analysis reveals (Chakravarthy, 2003; Garvin & Roberto, 2001; Porter-O'Grady & Afable, 2003). Without question, in today's information-driven business world, the ability to manage data and use it appropriately is a fundamental management skill set. This love for and attachment to data, including the management of data and the analysis of its impacts, is a central prerequisite and an essential tool in the armamentarium of the good leader (Davenport, 2006). Attachment to data means having competence for gathering, aggregating, translating, interpreting, and applying it in a way that is meaningful and makes a difference in the lives of those who will use the data. It is important to note that knowledge is the lifeblood of

innovative and complex organizations. Leaders then help to translate data into knowledge that will assist members of the organization. Data-driven decision making means more than simply relating to the data. It means establishing an intense relationship with data processes so that the structure of data becomes both a facilitating factor and a seamless integration. The data-driven process supports real-time communication and information, and the application of data entails real-time informing, guiding, and solution seeking at the point of decision and action (Ball, 2000; Oostendorp, 2003). Consider three questions posed by Allworth, Wessel, and Levie (2015):

1. What is the job to be done?
2. In a perfect world, what information would help you complete that job?
3. If you had this information, what inside your organization would need to change?

Of real importance is the ability to make this strong attachment or connection to data and analysis a part of the fundamental work experience for each individual in the organization. Translating data management into a real attachment to the use of data by knowledge workers is a formidable undertaking. Nevertheless, if the connection can be made between the value of work and the extent to which it is informed by data-driven decision making and evaluated by data-clarified measures, then leaders can begin to establish an attachment between the use of data and evidence, and the clinical decisions made and actions taken at the point of service. To accomplish this goal, such processes must be seamlessly integrated into the recording, collection, and assessment of information, and directly connected to the decision processes whose value and accuracy depend on both the veracity and the utility of the knowledge produced in real time by such data processes (Goad, 2002). The fluidity, portability, and mobility of data systems and processes as they are incorporated into knowledge worker activity are the keys to accelerating their viability as tools for both informing decisions and evaluating actions. Competent managers now view this approach not as a new way of doing business, but rather as the *only* way to think and do the work effectively.

To create a meaningful attachment or connection to data and the analytics related to creating relevance from it will require that both practitioners and information systems experts and developers focus on the utility of such systems from the users' perspective (Hildreth & Kimble, 2004). To date, much data have been collected in health care, yet much of those data are neither relevant nor valuable to individuals at the point of service, where the ability to establish the evidence of clinical viability is compromised without this input. The heavy, complex, and overwhelming systems for collecting and managing data simply make them untenable in the work life of the knowledge worker, especially given the myriad clinical pressures constraining his or her time. Continuing emphasis on the development of portability through the use of mobile data devices, remote data access, and handheld devices is essential to creating ease-of-use conditions that satisfy

the point-of-service user who needs ready access to critical and real-time data. It is the obligation of managers, in their role of creating and enabling context for evidentiary practices, to make sure that such data processes are both available and useful. If the point-of-service utility of data management systems does not advance, the currently great distance between truly effective evidence-based processes and clinical practices will be sustained over a long period of time (Geisler, Krabbendam, & Schuring, 2003).

Building effective analytics calls for organizations to recalibrate the way in which they collect and integrate data. In hospitals, for example, financial, flow, patient, and clinical performance data should not be looked at as separable elements. Instead, they should be viewed as representing distinct components of essentially the same data set. Each of these elements of data affects the others, thereby providing multiple sources of related information for guiding decision making and action (Locsin, 2001). From a purely business perspective, clinical requirements generated from patient assessment have a direct and immediate impact on financial considerations; they influence how hospitals will get paid for those activities because they invariably fall both under and outside of the auspices of third-party payers. This, in turn, has a direct impact on both the patient and the organization—one that can be ignored only at the peril of both. Evidence-based management requires knowing the value of these interfaces, recognizing how the implications of the data may affect both the business and the practices of the organization, and subsequently taking the requisite actions necessary to positively problem solve (Jurewicz & Cutler, 2003). Laying the foundation for analytics as a process for linking and integrating the business of care with the practice of care is essential to generate practitioner-centered values that directly relate to the patients they serve, the decisions they make, and the positive outcomes they attempt to achieve. It is especially important in the transformation to a higher level of digital processes and resources that healthcare work remain a human–relational process that enhances health and well-being and not a robotic process that eliminates the need for human contact, understanding of social situations, and the individual persona. Thoughts on the human–technology interface should necessarily be considered in the creation of a data management infrastructure.

TECHNOLOGY AND HUMAN INTEGRATION

The interface between humans and technology is now of great concern and interest to both patients and healthcare workers. There is great interest in new devices and software that is coupled with concern for health care becoming too impersonal or robotic. Algorithms are emerging to support decision making in new and creative ways (Frick, 2015); however, human judgment must still be the cornerstone for patient care. As new technologies are introduced into the marketplace, individuals are

inundated with new devices and software applications believed to enhance the value of healthcare services. Decision making for the addition of software or devices necessarily follows an evidentiary process. Evidence that the additional technology will indeed provide additional value to the organization is often not readily available, in spite of overwhelming enthusiasm about the additional technology from an emotional perspective. The creation of human-centered technologies has assisted many health populations in monitoring diseases such as diabetes, hypertension, patient safety alerts, and stress management sensors. Robots are now entering health care to do many standardized tasks, and some even have artificial intelligence capacity. An essential consideration in choosing technology in a complex organization is how to retain a balance of humanness in a highly technological world. Individuals in highly technological environments must work hard to avoid total reliance on technology and, at the same time, envision a better future.

OVERCOMING DOGMA AND BELIEF

Increasing one's capacity can only be done with the addition of more hours—or with the elimination of nonvalued work. No matter how intensely one wishes to do more with less, that is not possible. It is about doing only work that results in value for the user of the healthcare system. To be sure, the process of eliminating non-value-added work is often blocked by historical dogma and beliefs. Past practice, historical precedent, dogma, belief, and ideology all serve to create a contextual framework that informs action. Professions—most notably, nursing and medicine—have long historical attachments to process in the memories, mythologies, fantasies, and stories that create an idealization of practice and a disconnect from fact and reality (Anderson & Willson, 2008). For example, the traditional attachment to policy and procedure now represents a significant impediment to building evidence-based systems and infrastructure. In fact, policy and procedure are anathema to evidentiary processes representing a mental model and organizational framework that operate with constructs demonstrating a polar difference from the ones that now represent the fluidity of information management and clinical decision making (Birch, 2007; Oostendorp, 2003). Reliance on policy and procedural constructs represents an understanding of practice as being part of a fixed operational and clinical system. Policy and procedural constructs demonstrate a belief that change is external, incremental, and situational—none of which, as we now know, holds true. Individuals now must purposefully give consideration to elimination of existing work that might be duplicative, outmoded, or nonvalue producing. Eliminating duplicative or unnecessary work is one of the more difficult tasks for the team. Too often, emotional attachment or personal interest in tasks becomes the primary rationale for retaining duplicative or ineffective processes. At some point the team needs

Box 3-3 Evidence-Based Motivation: Truth

You cannot motivate anyone to do anything! People are already motivated. However, their motivation may not be aligned with group goals. The role of the leader is to create this alignment, not to motivate people.

to work together to collaboratively abandon those processes. Failing to eliminate dogmatic practices and unnecessary work obstructs or negates the new work as it becomes burdensome and perceived as an add-on.

CAVEAT: BEWARE OF MOTIVATION STRATEGIES

There is one final thought about the work in creating and assessing ones' infrastructure for evidence and innovation. If the forces of motivation were understood and the research related to those forces were incorporated into management capacity, managers might spend more of their resources and energy on creating the conditions of alignment (Barry, Murcko, & Brubaker, 2002; Fottler, Ford, & Heaton, 2002). Aligning individual motivations with organizational goals has a much longer history of well-researched validation than do efforts at employee motivation (Gottlieb, 2003; Lencioni, 2002). Creating both the infrastructure and the expectation of alignment of individual behaviors with organizational goals requires a particular set of skills, including ownership, engagement, investment, and strong linked and integrated efforts at performance evaluation and course correction (Malloch & Porter-O'Grady, 2006). Good evidence suggests that efforts in this arena have a direct payoff in terms of accomplishment and outcomes. No such body of evidence has been uncovered for organizational efforts at employee motivation.

Case Example

John Stanton, RN, MBA, is the critical care director for a small healthcare organization in the Midwest. He has reviewed the national driving forces for healthcare reform and believes he has a good understanding of them. He believes changes are needed in his organization, and he is unsure where to start to determine what needs to be changed and where innovation would be needed. John is also uncertain about the innovation competencies of his team members. He believes all the key stakeholders should be involved in this assessment. He would like to have a list of questions to begin the discussion. He formulated the following list to present to the team to begin the process.

Using the valued outcomes diagram as a focal point, John planned to ask individuals to share their perceptions of the level of understanding for each of these concepts:

- Personal knowledge:
  - What does complexity mean to you as a caregiver?
  - Share an innovation experience that you believe was successful.
  - How is your role unique as a member of this unit?
  - What interventions that you do are directly linked to patient improvement?
  - What measures do you think are important to evaluate the quality of your care?
- System perceptions:
  - How ready do you believe the organization is for the full implementation of the Patient Protection and Affordable Care Act?
  - What would our unit need to do to provide 100% fully integrated continuum care?
  - Which care processes or interventions that are provided in our unit result in value to the patient?
  - Which care processes do not result in value and could be considered for elimination?

John is hopeful that if he can understand the current level of team member understanding about the drivers for change, their unique role contributions and the nature of value-based health care, he will be able to develop a plan to make evidence-driven improvements and identify opportunities for innovation in his unit.

Questions

1. Do you think John is on the right track?
2. What will be the obstacles to this process?
3. What suggestions would you make to John?

Case Example

Leaders are continually steeped in complexity and change. Several competencies are essential for survival in the contemporary healthcare organization. After reading this chapter, Melissa Rogers, chief nursing executive of a large Southwest healthcare system, believed a leadership development program focusing on complexity was needed for her leaders. Melissa also reviewed additional leadership literature and believed most leaders were transactional in nature. She engaged the shared governance council to share her ideas.

The goals of this process included the following:

1. Gain an increased understanding of the basic attributes of complexity science to create a common foundation for all leaders.
2. Develop scenarios that reflect the reality of complexity attributes in routing practice to demonstrate the pragmatic value of learning about complexity and the potential impact of outcomes.
3. Describe the differences between complexity leadership and transactional leadership to further illustrate how leadership behaviors could be more facilitative and less directive as a means to increase team engagement.

The council then created and implemented a year-long formal plan to engage leaders in learning new behaviors. The plan included didactic online sessions for each leader and monthly team sessions in which complexity leadership scenarios were discussed.

To evaluate the impact of this work, Melissa believed there would be changes in nurse satisfaction and patient engagement. Using your facility satisfaction surveys for both nurses and patients, what specific items do you believe should improve? Can you link the improvement to a specific complexity principle? For example, is an improvement in staff perception of involvement related to a better understanding of the attribute of interrelatedness?

SUMMARY

Changes in communication modalities, new work flow processes, multivariate evaluation measurement variables, innovative outcome expectations, and the quest for clear and visible value are undeniable for organizations. These evolutions reflect the new realities of space, time, structure, and substance. Effective organizational cultures must now support a more pronounced evidentiary work dynamic that fully integrates the contents and interrelationships of the innovation to evidence continuum. This will necessarily result in more effective operations and the continual creation, evaluation, and introduction of new and better ideas.

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