CHAPTER ONE

A New Vessel for Leadership: Changing the Health Landscape in an Age of Reform

The hardest thing is not to get people to accept new ideas; it is to get them to forget old ones.

—*John Maynard Keynes*

Chapter Objectives

At the completion of this chapter, the reader will be able to

- Compare the characteristics of the Industrial Age with those of the twenty-first century.
- Enumerate the elements of quantum thinking and explain how quantum thinking has influenced the journey into the Age of Technology and the Age of Health Reform.
- Assess the impact of quantum science and recent advances in technology on health care and clinical practice.
- Describe the implications of Age of Technology thinking on the exercise of leadership in a time of reformatting health care.
- Identify the different skill sets for leaders in contemporary complex organizations.

Transformation continues to be the centerpiece of the future of health care. Ours is an ever-evolving transformative age, filled with a host of inspiring and challenging opportunities that, just a decade ago, were the stuff of science fiction. Who would have thought that this generation would see the advent of fiber optics, satellite-based universities, cloning, customized DNA-based treatment modalities, genomics, lasers, and a myriad of technological innovations that boggle the mind and enthrall the imagination? And who could have imagined that, after an intense, decades-long political and social debate, we would be confronting the vagaries and challenges of implementing significant national health reform?

Along with these many innovations come the challenging adjustments we must make to live in this increasingly digital universe. Instant communication, boundary-less

relationships, the globalization of economics and politics, Internet interaction, virtual communication, knowledge that exceeds our capacity to assimilate it—all have a dramatic impact on our ability to thrive in the twenty-first century. For most of us, the changes have come so fast that we don't fully comprehend how they will affect us, and we are hard pressed to cope with their implications.

> **Key Point**
>
> Communication technology has created a world without boundaries. We now must create our own boundaries in a way that produces a balance among the conflicting demands of our lives.

The pace of change alone—a pace simply unheard of in the last century—is enough to overwhelm even the most energized. As soon as we have the time to consider the particulars of the most recent changes, new changes are upon us and insinuating themselves into our culture. We do not even have the luxury of identifying their advantages and disadvantages and of considering their potential influence on our lives.

Our society, for instance, is just beginning to understand the impact the Web has had and will continue to have on communication, business, and politics. Further, new elements of the Internet already alter how we live our lives and change the questions we ask about what is passing before our very eyes. Yesterday's questions will not be answered because tomorrow has become today sooner than we ever could have imagined.

Leading in a Fluid World

Fluidity has become a characteristic of doing business and managing life in every human arena. Because of the prevalence of accommodating change initiatives, the ability to adjust course has become a necessity. In this context, leadership cannot be the same. Just as the underpinnings of our society, including how we deliver health care, are being radically transformed, so must the leadership necessary to guide people through life. The old models of leadership are no longer adequate to meet the demands of the times. When the world was slower paced and systems theory, complexity theory, and quantum theory were not as well formed or as influential, the nature and role of leadership were different. Even the operational realities of the workplace have changed to the point that work itself requires different skills and a different ethos (**Exhibit 1-1**).

Exhibit 1-1   New Versus Old Skill Sets

Knowledge Worker	Employee (Former Type)
• Conceptual synthesis	• Functional analysis
• Competent care	• Manual dexterity
• Multiple "intelligences"	• Fixed skill set
• Mobile skill set	• Process value
• Outcome practice	• Process practice
• Team performance	• Unilateral performance

The stable institutions of the twentieth century have been supplanted as we more deeply understand the framework for the twenty-first century. The brick-and-mortar empires of the past are breaking up, replaced by a growing digital architecture as work moves away from institutions altogether. The infrastructure of society is becoming less institutional and more information based, and the architecture of our places of work, service, and business is changing dramatically. Information structures are primarily relational and function collaterally and in multimodal ways, whereas most of our business structures have historically functioned vertically. Leading in a complex multimodal work culture is radically different from leading in a predominantly vertical or linear work culture.

In the Industrial Age, organizations were primarily fixed, finite, and functional. Work in the Industrial Age was based on Newtonian principles, and from the beginning of the twentieth century, when Frederick Taylor laid down the foundations of scientific management, to the late 1960s, business organizations were structured mechanistically and hierarchically. Even the management theorists of the 1930s, 1940s, and 1950s did not radically alter basic organizational design. Historically, the worker has mostly been considered a subset of the work. Most training was gained on the job, and the apprenticeship model used for training was essentially hierarchical as well. The organization owned the work and set the rules. Communication and decision making traveled up and down the corporate ladder: The higher up the ladder, the greater a person's authority and autonomy. At the bottom were the workers who performed most of the functions—under the control of those who had moved "upward." Although attention was paid to both the work and the worker, this attention was barely reflected in the management structure and the application of leadership in organizations.

> **Point to Ponder**
>
> The worker is increasingly in control. The knowledge necessary to get work done is now mostly in the hands of those who do the work. Because the workplace is becoming more dependent on knowledgeable workers, a major shift in power and control has occurred, and the old structures are now in conflict with this new type of worker.

But this is no longer the case in contemporary work systems. In the current world of work, it is not the organization but the worker who owns the work. The character of work changed substantially at the end of the twentieth century—it became increasingly technical and complex, often called "knowledge work"—and now individuals usually need to be trained for jobs before they become eligible for them. Indeed, they are expected to arrive "on the run" and start contributing from the outset. Further, organizations' increased dependence on knowledge workers has created a new power equation, shifting the locus of control from the organization to the worker.

In the Industrial Age, leadership (Murphy & Riggio, 2003) meant being a good manager, guiding one's subordinates like a good parent, and directing their activities in the interests of the organization. The critical skills were those required for planning, organizing, leading, implementing, controlling, and evaluating (note the acronym constructed from these six words: POLICE). The ability to function well and undertake well-defined processes was the basis of every role. Good performance and a sense of responsibility were highly valued, strongly encouraged, and heavily rewarded.

Exhibit 1-2   Work Life Reality Shift

Old Reality	New Reality
• Scripted lives	• Own your script
• Unlimited resources	• Finite resources
• Fixed functions	• Tightness of fit
• Employee	• Stakeholder/member
• Fixed jobs	• Fluid roles
• Promotion	• Mobility

So was compliance with the expectations of the workplace. Organizational leaders used vertical communication and command strategies exclusively to ensure that the workplace stayed focused and orderly and that the work was performed efficiently. They also refined hierarchical mechanisms and fostered congruence of workplace behavior in whatever way they could.

In this industrial context the first contemporary notions of leadership developed. A whole host of approaches to understanding leadership and acting as a leader emerged during the past century, and each one reflected prevailing notions of work and workplace organization (**Exhibit 1-2**). These various approaches helped to create the current framework for leadership, both in the realms of action and decision making.

Newton and Organizational Design

Newtonian mechanics had a tremendous influence on twentieth-century science and business. In particular, Newton's model of the physical universe influenced social theorists to view social relationships, roles, and work as highly mechanistic. The reason that this mechanistic framework was so pervasive was its clarity and simplicity, linear structure and coherence, and its generalized agreement with people's notions of common sense. Especially appealing was its dependence on reductionism, the tenet that any complex phenomenon could be understood simply by reducing it to its smallest components and analyzing it compartmentally. This linear simplicity was especially appealing to business and organizational leaders and was embraced by them with great veracity in ways that would define the structure of work to this very day. As a result, entrepreneurs and organizational gurus constructed models of work in which work activities were highly compartmentalized, and they succeeded in spreading the use of these models throughout the world. Subsequently, work was generally designed with efficiency and effectiveness in mind, and special attention was paid to individual performance as a means of ensuring that the work was done as planned.

Also, twentieth-century organizations focused on the assumption that by constructing work processes properly, they would produce products and services of consistently good quality. Here again, the organizational literature of

> **Key Point**
>
> In the twentieth century the focus of work was on performing the right processes. In the twenty-first century the focus is on obtaining the right outcomes.

Decision Tree   **Hierarchy**   **Heterarchy**

Process Design
(horizontal direction)

Control Design
(vertical direction)

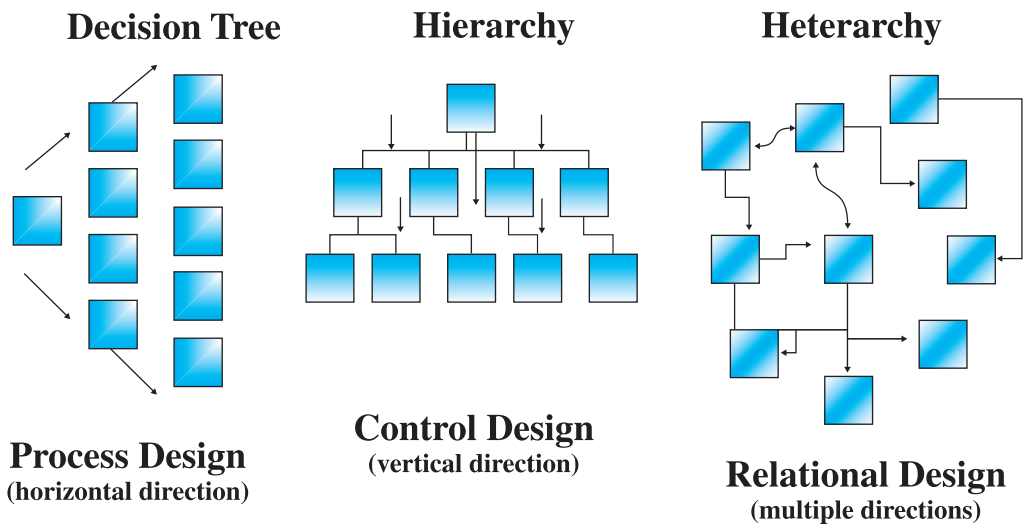**Relational Design**
(multiple directions)

Figure 1-1 Changing Organizational Models.

the time reflected a reductionist model. The organizational gurus viewed organizations as being essentially the same as always, although differing in structure in minor ways and characterized by an increased degree of control over employees. As Peter Drucker pointed out, the cornerstone of most twentieth-century organizations was control, as indicated by the "line and box" approach to configuring the workplace (Edersheim & Drucker, 2007) (see **Figure 1-1**).

Group Discussion

We are living on the cusp of the transition between two health systems, and life in the Age of Health Reform will differ substantially from life in the traditional tertiary care system. The changes that will occur include changes in clinical work and leadership. Brainstorm at least 10 changes that will occur in health reform (under the Patient Protection and Affordable Care Act [PPACA]) over this next decade and discuss their implications for leaders.

Eclipsing the Industrial Age

For the past 30 years or so, the standard models of work and the underpinnings of society have been shifting radically. The impact of our burgeoning technology has brought about a new construct for social structures and relationships across the whole human landscape. Quantum theory, refined and applied since the middle of the twentieth century, has helped to create newer technologies that affect life from the molecular to the global levels (Sreekantan & National Institute of Advanced Studies, 2009).

Exhibit 1-3   Conceptual Foundations

Newtonian	**Quantum**
• Mass production	• Envision the whole
• Compartmentalism	• Integration
• Reductionism	• Synthesis
• Analysis	• Relatedness
• Discrete action	• Team action

For example, consider the computer chip, which has single-handedly altered human experience forever. Among other things, it brought about a whole new understanding of quantum principles and changed the very foundations of social life by connecting people in a new way. Further, we now live with the knowledge that everything is linked and that events in one part of the universe have some kind of impact on events in other parts. Our understanding of the linkages among all experiences is the basis for complexity science and has led to changes in the conceptual foundations of the sciences and their social application (**Exhibit 1-3**).

In turn, these changes have raised the level of conflict surrounding basic issues, ranging from the existence and nature of God to ethical and social norms. Claims that once seemed beyond question are now open to investigation and continuous challenge. New scientific discoveries have substantial religious, philosophical, and ethical implications and have caused social discomfort among those holding more traditional beliefs (Volti, 2010).

It is into this equation that organizational leaders are now thrust. The problem is that they too are experiencing the conflict endemic to the times. Most leaders have spent the majority of their lives leading in Industrial Age models, just as everyone else has. They too are confronting newer realities with beliefs and practices acquired in the past. They too are struggling to make sense of the changes occurring globally. As an additional challenge to adapting to these changes, they must also lead others to adapt successfully to a whole new model guiding human organization, relationship, and behavior. Furthermore, the related discoveries and innovations are occurring faster than the rate of adaptation. As soon as one change is accommodated, another occurs, requiring a different response (Nickerson, 2010).

Group Discussion

Healthcare providers at the beginning of the Age of Health Reform (PPACA) must be willing to leave some things behind (because they will cease to have value) and to take on some new things. List some of the practices, habits, rituals, or routines that need to be left behind, and discuss symbolic acts or events that could be used to help let go of these formally. What replaces some of these "old" practices?

Change Is

Quantum theory has taught us that change is not a thing or an event but rather a dynamic that is constitutive of the universe. Change cannot be avoided because it is everywhere, but we can influence its circumstances and consequences. In short, we can give it direction. This notion of constant change reflects foundations in quantum mechanics that suggest that matter is constantly moving in the universe and can even be in more than one place at one time while taking different forms. Quantumness is almost counterintuitive and reflects characteristics and dynamics of matter and energy that don't fit any logical, ordered, structured understanding of them.

Schrödinger, a mid-twentieth-century physicist, used his famous "Schrödinger's Box" thought experiment to show two prevailing realities operating at any given time, actual reality and potential reality. Actual reality is that which currently occupies our immediate attention. Potential reality, on the other hand, although current and present, is not yet experienced. Being still potential, it is waiting for the right moment to become expressed and thus actual.

Potential reality is the realm in which leadership takes form. The leader's role is to engage with the unfolding reality, perceive it, even predict it, note its demands and implications, translate it for others, and finally guide others into actions to meet the demands of a reality not quite present. This leader must be comfortable with the ambiguity of the "in between," that is, living in two realities, that which is ending and that which is emerging. Demonstrating this comfort with the journey provides a frame for leading others through the chaos and uncertainty of constant change.

> **Point to Ponder**
>
> A stop sign can be used to illustrate potential reality. When first seen, it notifies a driver to stop—but not immediately. The sign is a real object, a reality, and it does require a real response. The driver's preparation to stop is the first in the chain of actions, and it is this action that links the actual to the potential.

In this transformational time between two paradigms, the leader's primary role is to live fully in the realm of potential reality. The leader is not so much an operational expert and problem solver as a good "signpost reader." To be effective, the leader must anticipate the path of change and then spell it out for those who are moving their own activities, knowingly or unknowingly, in the same direction as the change is taking form (Yang & Shan, 2008).

The Transition Between Ages

Age changes do not occur quickly. Such changes generally occur over two or three decades. The challenge is not to become "stuck" in the no-man's-land between an extinguishing life script and an emerging one. The dynamics of a substantive change are moving in concert to create the underpinnings for a comprehensive transition (Bridges, 2002) from one way of living to another. This has occurred several times in human history. From the Middle Ages through the Age of Enlightenment and the Industrial Age
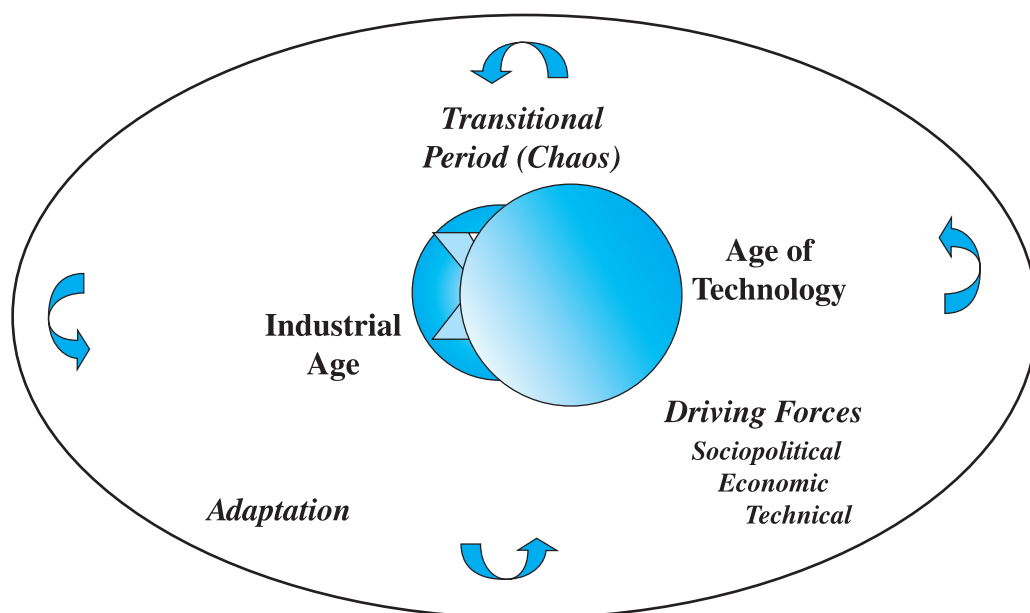
Figure 1-2 The Universal Cycle of Transformation.

and up to the current era, which we might dub the Digital Age (or the Information Age), historic indicators have presaged major shifts in human experience (**Figure 1-2**).

There is an important difference, though, between previous shifts and the one that is now occurring. In hindsight, the significance of previous shifts quickly became clear, even if it was rarely apparent during the critical transition points. Today, on the other hand, the period between predicting future changes and confronting their unfolding is too brief to allow plans to be made to accommodate them. Indeed, today's leaders act as agents of change, but, like everyone else, they must also undergo the changes themselves virtually at the same time as they perceive them. Wholly new leadership skills are required to manage in this kind of a world.

Think for a moment about some of the ways in which the script of life is being rewritten for all of us:

- The Web is now a primary business tool, and it is fundamentally altering how business gets done.
- Fiber optics, in conjunction with satellite technology, has connected the world into a seamless communications network in which information can be transmitted instantly from any place on the globe to any other place.
- Information has thus become highly portable, and, given the developments in shipping, everyone has access to almost anything they want or need from anywhere in the world.
- Technology has enabled communication and interaction to become increasingly more portable as chips have become smaller and digital devices have become packed with technology and applications in lighter, smaller, more portable hardware.

- Each person has control over any relationship, personal or business, and can personalize any interaction within any context at any time and in any way he or she desires.
- Miniaturization has made it possible for people to be mobile and still remain connected to everything and everyone. Furthermore, it has made innovations in service, communication, information, and health care faster, easier, and less expensive to implement than ever before.
- Globalization has created a world community and removed traditional boundaries between people, be they political, social, or physical. The recognition of the mobility of human experience and of work has created a new virtual and global landscape for human action.

These are just a very small sample of the transformations that are occurring. And these transformations are only the beginning. Even so, they have a major impact on our understanding, on the way we live and relate, and, of course, on the way we work.

Imagine the lives of our great-grandparents or even our grandparents and how different our lives are from theirs as a result of these technologies (keep in mind, for example, there were no cell phones before 1986). Then, consider the possibility that the children of current teenagers might never write or read as we have, interact and play as we have, relate to each other or travel as we have. And remember, this generation is currently ushering in a new way of living and working as the baby boom generation begins to retire.

In short, our generation is a transitional generation—the last generation of the Industrial Age and the generation on the cusp of the Digital Age. We are in essence the bridge between two ways of experiencing the world (compare digital immigrants to digital natives). What we do now lays the groundwork for a future that will look nothing like the world most of us have known.

Group Discussion

List dramatic discoveries and inventions that occurred during the past century and compare the way life changed as a consequence with the way life changed during the preceding millennium. Then, discuss the technological changes occurring in the first decades of the twenty-first century that affect the future of health reform and care delivery.

Leading Change

It is important that leaders be aware of the transformative work that defines their role. The Digital Age now calls for leaders to perceive their role differently and to express it in ways that best fit the characteristics of emerging sociotechnical culture (**Figure 1-3**).

The role of today's leaders is to encourage this transformation. Indeed, they must make a commitment to the journey and work hard to incorporate the changes in their lives in a very personal way. In other words, rather than simply suggesting that everyone and
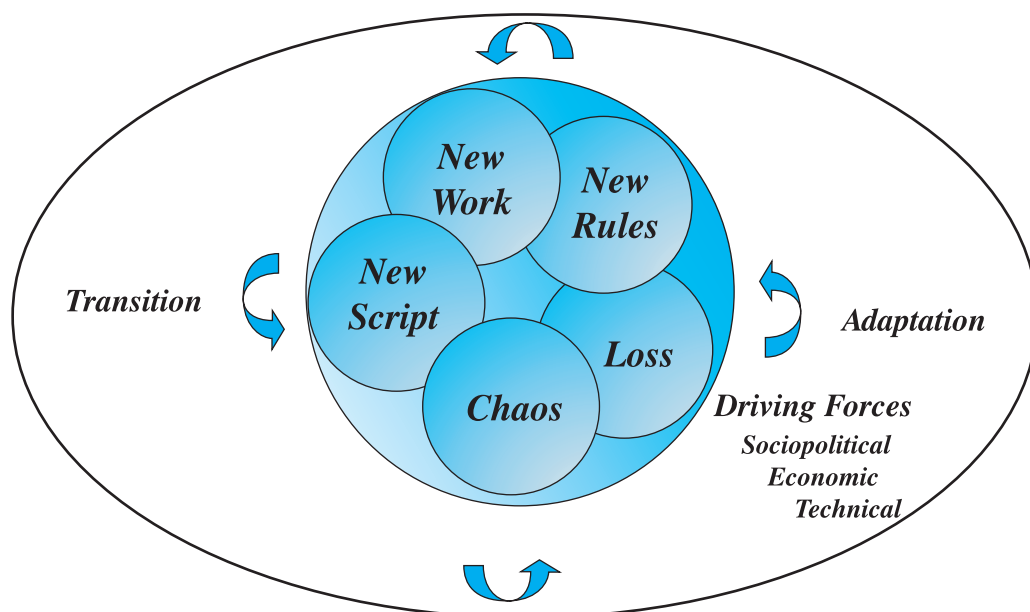
Figure 1-3 Universal Dynamics of Transformation.

Point to Ponder

The behavior of leaders must exemplify their commitment to sustain their own journey and to coordinate and facilitate the efforts of others to build a desired future.

everything must change, they must lead by example. They must serve as witnesses to the changes and show others how to adapt to the changes in their own lives.

In the initial stage of this transformation, leaders must be able to show that the coming changes represent a critical shift and must, through their passion for movement, inspire responses from others. This is not the time for complacency but for truth telling and confrontation. In short, it is a time to inform people how the changes make a substantial difference in their lives and in their work. Advancing people's awareness of this requires a level of honesty and directness once thought to be confrontational.

In the case of health care, the major reforms under way will lead to the end of the hospital-based sickness-oriented model of service delivery. Our technologies enable us to treat illnesses at an earlier stage and reduce the need for costly surgical interventions. As a consequence, not only physicians but also nurses and other health professionals must make substantial changes in the way they practice their professions and provide services. The introduction of value-driven approaches that focus on early engagement, attaining the highest level of personal health, prevention rather than treatment, and designing the system to provide a continuum of health services represents an effective model of health service (Birk, 2013).

Leaders in health care must help people sever their attachment to the kind of health-care system with which they have become comfortable. Health reform calls us all to focus on accountability, early engagement, prevention, cost-effectiveness, and a higher level

of aggregate health for all citizens. So many health professionals are mourning the loss of what is passing away or has passed away. In some cases, their sense of loss is understandable, but most of what they mourn for *should not* be retained or brought back. That was then; this is now. Some of the factors that attracted many of us to health care have vanished for good. The question is not whether they will return, but how to adapt to the new circumstances and new models of health service.

Healthcare leaders must try to engage others in the process of making their own changes. They must take whatever action is necessary to impress upon health professionals that this is a time of great mobility and of shifting foundations. In particular, they must call all stakeholders to the table to work out what must be altered and what must be introduced to fashion a new healthcare delivery system. A great tragedy will occur if healthcare leaders are unsuccessful in this task and allow stakeholders simply to react to changes long since past. Complacency guarantees failure.

Leaders may be victims of their own insights and past successes, which can cause them to use an outdated recipe for success as well as misleading measures of success. They must see the approaching challenges within the context of their becoming, not through the eyes of past triumphs.

Not only must leaders close the door on the old models of health delivery and clinical work, but they must turn around and face the future, viewing the entire landscape to develop a workable vision. Often, healthcare leaders are too shortsighted, and their vision too tenuous. The conditions that determine the future of health care are vastly different from anything that we have experienced to date, and thus leaders must construct a radical vision of how services will be provided in the new healthcare landscape. The impact of micronization, genomics, biotherapeutics, chemotherapeutics, and new economic and service delivery models is forever altering Western medicine (**Exhibit 1-4**), and so the structures that support the provision of Western medicine also need to change. The brick-and-mortar infrastructure and the current administrative and operational

> **Key Point**
>
> Moving into a reformed health system does not mean leaving everything behind. It does mean thinking about what needs to be left behind and reflecting on what should go with us as we move into an age with a different set of parameters.

Exhibit 1-4   Changing Medical Therapies

Old Therapies
- Surgery
- Salves and creams, drugs
- Accommodation
- Nothing can be done
- Treatments
- Enemas
- Bloodletting
- General supplements

New Therapies
- Lasers
- Microsurgery
- Genomics
- Pharmaceuticals
- Chemotherapy
- Radiotherapy
- Synthetic products
- Specified supplements

11

frameworks are no longer entirely relevant, and they must be adjusted in response to financial, political, and technological pressures of a changing healthcare system. Imagine how painful that message is for the serious and talented men and women who have devoted their lives to building their image of the healthcare system. The requirement to tear it apart and begin anew is overwhelming to them, but they are called to this task by the changes that have already occurred and those anticipated as we refine and unfold health reform over the next two decades.

> **Key Point**
>
> The greatest impediment to future success is past success.

Healthcare leaders must be able to communicate to others their vision of the future and bring as much energy and commitment to the reformation of the healthcare system as possible. They need to capture the hearts and minds of all health professionals and other stakeholders in the healthcare system by being relentless communicators and forever challenging current ways of thinking and doing. They must push against the walls of thought and work to ensure that stakeholders are fully engaged in critiquing what they do, building sustainable service partnerships, assessing the product of their work, and questioning whether what they are doing is congruent with the changing demands placed on them. Every stakeholder must continually examine the appropriateness of current work rituals and routines and determine what should be retained and what should be left behind as no longer relevant. The job of the leaders is to raise questions about the efficacy and effectiveness of current work processes and whether they are meeting new and emerging expectations for value-driven health care.

The most important task of healthcare leaders is to communicate their vision, not so much by their words but by their behavior. If the leaders cannot respond appropriately to the demand for change, others will not be able to either.

> **Key Point**
>
> The leader is an agent of change, responsible for providing others with a vision of change and ensuring that their response to the demand for change is appropriate.

Their next most important task is to anticipate the blocks in the way of substantive change. Implementing any planned modification requires the integration of numerous activities and people, and thus faces many embedded obstacles. The most notable are elements of the organizational structure, which itself acts as insulation from the demand for reform. One of the first jobs of a leader acting as a change agent is to diffuse the power of these elements and thus remove a large barrier to concerted and dramatic action on the part of the stakeholders.

Leaders must be aware that people have devoted their lives to avoiding the prospect of change and that one person dedicated to blocking change can bring the entire change process to a grinding halt. Change avoiders or resisters must be identified, challenged, worked with, empowered, and placed in the midst of the change process so that they do not impede the ability of the organization to thrive. The entrenchment of behavior and structures that reward these behaviors provide the greatest barriers to meaningful change in health care and contribute to the decline in the system. There is nothing more

tragic for society than the desperate stranglehold on a system in need of great change by leaders who benefit by delaying or avoiding the necessary shifts. These leaders cease to be relevant or viable and actively contribute to the overwhelming onset of great decline and ultimate failure.

Because the transition from one age to another is a long-term process, leaders must continually set short-term goals to give stakeholders a sense of movement and accomplishment. The attainment of short-term goals enables stakeholders to mark their journey forward and visualize and celebrate the process of change. It also gives them a moment of respite and reflection and helps them gather the energy necessary for the next stage.

Leaders must look at change not as an event but as a journey—a never-ending journey. Every point of arrival, in other words, is also a point of departure. Therefore, leaders must carefully balance periods of effort and action with periods of rest and celebration so that stakeholders will be regularly refreshed and reenergized to meet future challenges.

Finally, change is experienced on a personal level and on a cultural level. And culture always rules. This truism must be solidly rooted in the mind of every leader engaged in transforming an organization. The task is to prove to workers that the modifications will improve their work or the workplace. Today's workers are faithful, not to the workplace, but to their work. They know they can take their skills elsewhere and be welcomed. Leaders must thus be aware of the demands regarding work that exist within the prevailing culture. Incorporating symbolic and cultural norms in the language and process of change helps cast it into a form that workers can understand and value. Every wise leader knows the political realities pertaining to a change process and adapts the process in light of them so that the needs of key stakeholders are met adequately and stakeholders can devote their efforts to implementing and sustaining the process.

Group Discussion

Along with the nature of work, the characteristics of workers are changing. Discuss how the times have an impact on the culture of the workplace and the characteristics of workers (especially knowledge workers), compare the characteristics of younger and older workers, and explore the issues that arise when both types of workers must perform together.

Quantum Age Requisites

Quantum realities are characterized by many new patterns and processes such as those described in this section.

Linear Thinking Is Now Replaced by Relational and Whole-Systems Thinking

Perhaps the most radical shift to occur is the move away from mechanistic (Newtonian) and reductionist models of thought and research. In the twentieth century, most research was based on vertical, reductionist (or linear) processes. Quantum science, in contrast,

has an affinity for complexity and uncertainty. The use of complex relational algorithms has lessened the former devotion to vertical and reductionist processing, and relational and whole-systems models now constitute a new foundation for scientific and business research. Because researchers can rapidly process and relate complex arrays of data, they can use different processes for making decisions and creating new products and technologies, such as computer chips, synthetics, bioceuticals and pharmaceuticals, and DNA-moderated clinical therapeutics.

Structure Is About Wholes, Not Parts

Our newly acquired capacity for discovering and understanding the critical vitality of linkages and intersections has made it clear to us that at some level everything is interdependent. Further, our knowledge of the interconnectedness of everything causes us to look differently not just at the physical components of the universe, but also at organizations and human interactions (**Exhibit 1-5**). This is not to say, of course, that we always fully comprehend the nature of the interdependence among any particular elements, but we do recognize its significance.

Our understanding of the design of fractals, for example, is critical for comprehending the order that exists in chaos and for appreciating the impact of complexity on organizations and human behavior. The smallest level of a single organization and the most complex array of a large, aggregated system containing the organization are connected inexorably, as demonstrated through the power of fractals ($Z_{n+1} = Z_N^2 + C$).

If you have ever looked at a hologram, which is a three-dimensional photograph of an image, you may have noticed that no matter what size section you focus on, the entire image is present in the smaller piece. Holography thus can be used to explain the nature of fractals because in a fractal the complete pattern is present in any component regardless of the level of detail or complexity. A tree is a good example from the so-called natural world because its overall structure, including the trunk and branches, is similar to the branching pattern of each leaf (the fractal effect).

Exhibit 1-5   The Language of Complexity and Chaos

New words from the science of complex systems describe a world different from that which we have grown familiar. They express a whole set of dynamics that operate just outside our field of vision, yet they have a defining impact on our experience of life and the human journey in which we each play an important but not always known role. Some of the more unusual words include these:

- *Autopoiesis:* The process by which living systems continually seek to renew and reinvent themselves, yet maintain their core integrity.
- *Autocatalysis:* A process in which information enters into a system in small fluctuations that continually grow in strength, interacting with the system and feeding back upon itself.
- *Dissipative structures:* Structures in which disorder is the source of order and vice versa. In this "dance" between order and disorder, old form ends and new form begins.
- *Strange attractor:* The activity of a collective chaotic system composed of interactive feedback between and among its various parts and evidencing attraction to its pattern of behavior.

Fractals have tremendous implications for organizations. From the smallest structural elements to the very complex patterns of behavior that exist throughout an organization, the same patterns appear and are played out in precise detail. This fact implies that at every level of the organization there exists a self-organizing capacity and that this capacity maintains a balance and harmony even in the midst of the most apparently chaotic processes. To the extent that the balance and harmony are sustained, the organization's life is advanced. To the extent that they are upset or cannot be well articulated, visualized, and acted on at every level of leadership, the organization's actions tend to impede its inherent integrity and effectiveness. It is important, therefore, that the leaders of the organization are aware of the continuous and dynamic action, the fractal effect, in all organizational behavior and structure so that they can advance the consonance and value of the organization members' activities and enhance the organization's ability to fulfill its mission continuously.

Perhaps it is even more important for leaders to recognize that, within the context of the fractals' dynamic action, their own actions have cascading and rippling implications throughout the organization. In fact, they should understand that no decision, action, or undertaking can occur in the organization without ultimately having an impact on every other action, decision, and undertaking. In addition, once they are cognizant of the web of interaction and interdependence that exists in the organization, leaders will approach deliberation and decision making only with extreme care, caution, and thoroughness.

Issues of relationship, interaction, empowerment, and ownership have become increasingly pertinent in our understanding of the nature of work. We now view individuals rather than organizations as owning the work processes, and this change in our understanding has altered the relationship between workplace and worker. Further, by focusing on different descriptors in portraying how human dynamic systems work and how processes get sustained, we have created a new framework for considering design and function within the workplace and within the entire human community. The new framework also enables us to consider what is and is not effective in the workplace and in relationships among people as well as issues of accountability, productivity, and value.

For example, no longer is it enough for leaders to assess the functional proficiency of individual workers as a way of determining whether a work process is fully effective and sustainable. Instead, they must also examine whether each worker's competence and efforts fit with the competence and efforts of other workers. "Goodness of fit," not the individual proficiency of any single participant, leads to effectiveness and sustainability. Imagine the impact of this understanding on measures of productivity and performance.

> **Key Point**
>
> Competence is not about having skills, but about using skills to achieve desired outcomes.

The Value of Work Is a Function of the Outcome, Not Just the Process

In the last 30 years, our understanding of the value of work has shifted. In the past, the focus of clinical work was on the excellence of process, and the existence of a good work process was taken to indicate good service. We now recognize that process is not the only

determinant of good service. Indeed, a work process derives its value from the purpose toward which it is directed (the desired outcome), and if the purpose does not inform and discipline the process, the process can lose its value (we must learn to create goodness-of-fit between process and outcome).

Work is not inherently valuable, despite the Judeo-Christian ethic. Consider how many people who say that their work provides meaning in their life find their life to be pointless when the function and content of the work shift. What they forgot is that work is not meaningful in itself but becomes meaningful when it fulfills an important purpose. People sometimes feel burned out when they seek the meaning that should drive the work inside the work activity itself. When the work changes they cannot cope because they experience the end of a way of working as well as an end of meaning. The problem is that their "how" has become their "why," and their means have become their ends.

> **Point to Ponder**
>
> Work is not inherently valuable. Instead, it is valuable to the extent it fulfills a purpose. Therefore, the main focus should be on whether the work achieves real value, not on the work itself.

Process is not always connected to outcome and hence to value. Nurses and physicians, particularly, have a hard time understanding this. Sometimes their commitment to treating patients is not disciplined by the recognition that the value of any treatment activity lies in the final outcome or impact. Indeed, they often provide health services in cases where there is little evidence that the services dependably result in a right outcome. Medical practice variance accounts for billions of dollars a year in healthcare expenditures. In the future, the connection between process and product—between particular treatments and their outcomes—will play a more significant role in the management of healthcare resources and the valuing of health services.

Technology Has Changed What People Do, How They Live, and Who They Are

When we view the technological advances of our time objectively, it is difficult not to marvel. Many inventions that first appeared in science fiction have been realized in the past few decades; obviously, many innovations are yet to come, including some that will alter the very structure of life. Frightening as it may be, for the first time in human history we can manipulate our own evolution and that of every other species on the earth.

Healthcare leaders need to realize that technology is transforming the very basis of health care for the first time since the development of germ theory. Genomics and related sciences are shifting the therapeutic framework for health care, probably for the rest of the century (Klug & Ward, 2012). How many of us can provide leadership in a postgenomic healthcare system? How many of us really know what that means?

Certainly, health care will depend less on the use of highly mechanical interventions, especially surgical interventions. The advances in bio-, chemo-, and pharmacotherapeutics enable many conditions that required traditional surgery to be handled more easily and less invasively through modern therapies. Even Alzheimer's disease will become a more treatable illness before the end of the decade. The question is, what are

Exhibit 1-6   Seven New Age Imperatives

1. Value-driven health service models
2. Medicine/nursing based on genomics
3. Mass-customized diagnosis and treatment
4. User-specific insurance programs
5. Integration of allopathic and alternative therapies
6. Payment incentives tied to outcomes (quality)
7. Focused service settings for specific populations

the implications of the switch to new therapeutic modalities, especially for the treatment of older persons and when the new modalities replace traditional institutional models of treatment (**Exhibit 1-6**)?

Leaders will have to grapple with these emerging realities and incorporate them into their own lives. Most people find it difficult, if not impossible, to imagine what the new technologies will mean for life in the second and third decades of the twenty-first century, despite wanting to embrace them. They need help in grasping how the technologies will affect them and what adjustments they must now make to thrive in the continually emerging digital reality (Brown, 2009).

New Rules Will Apply in the New Age

Imagine not just learning to live within the context of a whole new set of rules but leading others to embrace these rules in their own lives and work. This is the fundamental leadership task—dealing with the same changes as everyone while helping others thrive in a new reality. What makes this even more challenging is that people are inclined to reject the implications of the changes that are occurring.

Several late-twentieth-century innovations are still having a powerful impact on people's lives and on their relationship with health professionals and other service providers. These innovations include the Internet, wireless communication, fiber optics and lasers, the cloud (which helps manage large and dense information repositories), and technologies that enable these groups to converge around new clinical technologies, therapeutics, and drugs. The Internet, for example, not only has influenced global communications but also has altered the way business is conducted. For a couple of decades now, people shop without leaving home and even without any human contact. Using the many vehicles of social media, they can access a wide variety of people and information, including information they once needed to visit a library or a professional expert to get. When people meet with their doctors (often digitally), they might already have accessed health information from other sources, have questions and concerns they want to discuss, and can share the digital media they are accessed virtually in real time. The Internet, in other words, is helping to shift the locus of control from providers of health services to users, and it is also affects the patient–provider relationship in the following ways:

- Patients now determine the parameters of the patient–provider relationship, setting the stage for a different kind of interaction than has historically occurred.

- Patients are developing partnerships with providers to sort through the available choices and pick the best. They need providers to act as navigators and educators who are willing to assist them in making healthcare decisions.
- Patients need help from providers both in verifying the accuracy of the data they have gathered independently from a host of sources and in interpreting the data.
- Patients are interested in options, not orders to undergo particular treatments. They want to be able to consider a range of options within the context of their personal values and priorities and to choose the one option that fits best.
- Providers now need to be concerned with what patients know and can do in regard to controlling their own health decisions in a "user-driven" world. More of the responsibility for health care will be placed on patients and their loved ones. Providers must now transfer skills to others and share the ownership of care with others.

Although the locus of control has shifted to patients (users), essentially patients are undereducated about health care. Still, ready or not, they now must take command of their own care and acquire whatever skills they need to manage it. The current role of providers in a reforming health system is to ensure that patients/users not only have the proper tools and skills but actually succeed at managing their own care. Consequently, providers need to alter their priorities. Rather than intervening medically and providing care themselves, they now frequently help their patients to make proper health-related decisions and to learn how to perform necessary self-care tasks. To a certain extent, they are becoming health service agents/navigators, assisting their patients in obtaining the equipment and services they and their patients have determined are needed or desirable.

Health Care Will Be Provided Earlier Than in the Past

Over this next century bio-, chemo-, and pharmacotherapeutics will come to dominate the health services landscape. Because technology will enable healthcare providers to assess a person's DNA and physiology in ever-greater detail, diseases will be identified sooner than they are now. Diagnostics will make it possible to predict with high levels of accuracy a person's degree of risk for particular diseases and conditions. Preventive treatment will be supplied before symptoms manifest, and detailed, highly customized clinical services will be configured specifically to fit individual DNA characteristics.

Health professionals must ask, how will the improvements in diagnostics and therapeutics alter the practice of medicine? In the past, generally medical and nursing interventions required patients to be hospitalized. The therapies of the future will require much less hospitalization and will hardly impede patients' normal routines. The main goals of health professionals will be to provide the right therapy at the right time and to educate people about their life processes, their health, their choices (including medical and lifestyle choices), and the risks associated with each choice. As these become prevalent realities for service and economies of scale are reached, cost-effectiveness and value can be more adequately assessed and appropriate financial choices can be made.

The largest two groups of health professionals, nurses and physicians, have much to accomplish in the next two decades if they are to successfully make the transition to a digitally driven, value-grounded, reformed health system. Their clinical roles will change

Group Discussion

In the transition between ages, consumers' expectations regarding their role in healthcare decisions and processes are changing. Discuss the changes and describe the role of health professionals in helping consumers develop the insights and skills they need to manage their own health effectively, especially in the Age of Health Reform. Also, discuss the dangers of consumers making their own decisions, as well as the actions that healthcare leaders can take now and in the future to mitigate the dangers and ensure that consumers become accountable decision makers.

substantially during this period, and getting these groups to converge around a new way of addressing prevention, education, and service delivery will be challenging and a tumultuous experience for healthcare leaders. Leaders will require extreme diligence as well as a skill set that stretches their resources to the limit. To design the future, leaders must understand the current landscape and how it differs from the familiar territory of past experience.

The Context in Which Leadership Is Applied Is Undergoing Changes

From deconstructing infrastructure to confronting "new age" workers, leaders have a new set of tasks before them—tasks they are not fully prepared to address. For most leaders, most of the foundations of their understanding and expression of the nature of leadership were formed in the early and middle twentieth century and reflect outmoded models. During the last third of the twentieth century, newer models of leadership and its application emerged. These models are based on new ideas about organizational structure and managing people and processes (**Exhibit 1-7**).

In the past, organizations were built on the Newtonian principles of mechanistic functioning, compartmentalization, and vertical control (**Exhibit 1-8**). The dominant theme of Newtonian thinking is that the universe is simply one vast machine. In fact, Newton saw the universe as a sort of giant clock that could be explained in mechanistic terms, and he and his followers took the goal of physics to be the discovery of the laws that supposedly govern the parts of the universe (material particles and the

> **Key Point**
>
> People no longer have to undergo a hospital stay to obtain most medical services. More than 50% of medical treatments do not require hospitalization, and with health reform that figure will rise to more than 70%.

bodies of which they are constituents). Almost all scientific progress of the late nineteenth century and the first half of the twentieth century was grounded in Newtonian concepts.

The kind of mechanistic explanation favored by Newtonians has not accounted for human behavior and other patterns of activity in the universe, however. Even in the early decades of the twentieth century, questions were raised about the adequacy of Newtonian physics to explain the incongruous and apparently messy underpinnings of the universe.

Exhibit 1-7   The Major Tasks of the Twenty-First-Century Healthcare Leader

- Deconstructing the barriers and structures of the twentieth century
- Alerting staff about the implications of changing what they do
- Establishing safety around taking risks and experimenting
- Embracing new technologies as a way of doing work
- Reading the signposts along the road to the future
- Translating the emerging reality of health reform into language the staff can use
- Demonstrating personal engagement with health reform
- Helping others adapt to the demands of a value-driven health system
- Creating a safe milieu for the struggles and pain of changing practice and service
- Enumerating small successes as a basis for supporting staff
- Celebrating the journey and all progress made

Exhibit 1-8   Newtonian Characteristics

- Vertical orientation
- Hierarchical structures
- Focus on control
- Reductionistic scientific processes
- Top-down decision making
- Mechanistic models of design
- Process-driven action

Biology, perhaps, has offered the best evidence that not everything works mechanistically and that the universe is rife with chaos and incongruities.

Quantum theory and other more recent scientific theories have had a large impact on contemporary theories of leadership. Many of the elements of traditional leadership grew out of a Newtonian/industrial framework, especially those focusing on hierarchical control. Indeed, during the twentieth century organizational leaders tended to rely on vertical hierarchies and compartmentalization of activities to manage people and pro- ductivity, and the structures of their organizations reflected this tendency. The rise of quantum theory and the new appreciation of complexity and complex adaptive systems as foundational characteristics of the universe have changed our views of science and of life (**Exhibit 1-9**). Many mistakenly believe that all that has occurred has been a shift in

Group Discussion

Describe the core concepts of Newtonian thinking and how these concepts were manifested during the twentieth century. Consider, for example, how social insti- tutions and structures reflected the commitment to Newtonian thinking and how Newtonian thinking influenced the leadership role.

Exhibit 1-9   Quantum Characteristics

- Multifocal characteristics
- Nonlinear structures
- Focus on relatedness
- Multisystems scientific processes
- Center-out decision making
- Complexity-based models of design
- Value-driven action

---

focus from physics to biology, but this way of looking at matter itself reflects a kind of compartmentalism. Rather, what people are beginning to understand is that all elements of the universe are a part of a broad system of intersections and relationships.

The major shifts in scientific thinking challenge all our current theories of leadership. What we once thought were the foundations of leadership are now being subjected to further exploration and clarification. Vertical control and managing ritual and routine, for instance, are no longer seen as effective processes for leadership, and the rules governing relationships and interactions within organizations have been forever altered. Further, we now recognize that the patterns of relationships in an organization are just as important as the relationships themselves or what lies within the related elements. Leaders must understand and apply these newer notions if their organizations are to thrive internally and externally (Tait & Richardson, 2010).

Leaders Must Replace Traditional Leadership Models with Models That Reflect the New Framework

The current literature on leadership contains a large array of concepts that suggest a whole new framework for action. Foremost among these is the concept of complexity and the view that everything is related. In this view, the interactions among the parts of a system are critical to the system's productivity and ultimately its sustainability (Yang & Shan, 2008). The main leadership task, then, is not so much to manage function or work, but instead to coordinate the elements (e.g., the workers) and facilitate the relationship between work and worker at every organizational level.

Leaders must maintain a panoramic view of the world to discern the direction their efforts should take. Their ability to see intersections, relationships, and themes ensures that the organization will undertake the activities it needs to thrive.

In the Industrial Age, leaders were concerned most of all with function and operation. The work was compartmentalized, and the focus was on the activities of the individual employee. The employee's work life was regulated by a set of job obligations, and by meeting these obligations, the employee was able to advance upward, receive better pay, or obtain other rewards. A performance evaluation system might have been in place to assess the employee's proficiency, and any rewards given to the employee were based on the quality of the work, not on whether the work made a difference to other employees or to the organization as a whole. Work processes have historically been treated as having more value than their outcomes.

Key Point

In the emerging age, a large part of the leadership role will involve facilitating the transition to a new way of living and working. Leaders will increasingly devote their energies to helping others adapt to the new rules for thriving in the world of work.

In this new age, the ordering is reversed. The most important question is not "What have you done?" but "What difference did it make?" The former question reflects the Judeo-Christian tradition that work is inherently valuable, whereas we now view work as valuable to the extent it achieves the purposes toward which it is directed. Consequently, leaders need to consider the relationships among the work, the worker, and the purpose of the work as a dynamic that continuously drives value. Further, they need to understand that the relationship is cybernetic, which means that each element supports and feeds the others in a seamless connection.

Although the relationship between process and outcome is clear, it is not always direct. Many circumstances and variables, including inherent and contextual influences, as well as unplanned factors, are embedded in the process and affect the relationship between each element of the work and the outcome of the work. These variables interact with the work process and influence both the process and the outcome. It is here that complexity plays its part.

The new age commitment to focusing on process from the perspective of outcome creates havoc among health professionals. Leaders must be fully aware of professionals' intractable attachment to process and the functional activities that make it up. People generally come to prize particular work activities once they become expert at and are rewarded for doing them. They find it a challenge to adjust or even eliminate what they do in the face of a lack of evidence that it produces anything meaningful or sustainable. Indeed, simply getting folks to the table to discuss the product of their activities can be difficult. Yet this is what leaders must do if they are to change the content of the work, make it more meaningful, and determine its essential value.

Group Discussion

Explore the notion of goodness of fit between processes and outcomes. In particular, discuss how a leader's expectations of staff would likely change if the leader looked at service and care from the perspective of achieving value. As part of this discussion, describe what steps the leader can take to get staff to focus on value rather than function (process). What changes would occur in the provision of healthcare services as a result of this focus on achieving value for the user?

Everything Is Part of One Comprehensive System

Formerly, it was believed that three types of functional relationships existed: Any two things in the universe were independent of each other, they were interdependent, or one was dependent on the other but not the reverse. In the quantum age, however, we realize

---

Exhibit 1-10   Interdependence

In nature everything is interdependent. There is an ebb and flow among all the elements of life. Leaders must see their role from this perspective. Most of the work of leadership will be managing the interactions and connections between people and processes. Leaders must keep aware of these truths:

- Action in one place has an effect in other places.
- Fluctuation of mutuality means authority moves between people.
- Interacting properties in systems make outcomes mobile and fluid.
- Relationship building is the primary work of leadership.
- Trusting feeling is as important as valuing thinking.
- Acknowledging in others what is unique in their contribution is vital.
- Supporting, stretching, challenging, pushing, and helping are part of being present to the process, to the players, and to the outcome.

---

that all things are interdependent (**Exhibit 1-10**). That is, all things are tied together in a wide variety of refined and sometimes inexplicable ways, some obvious and some all but invisible at any level of observation.

Leaders now must carry out their tasks with an awareness of the relatedness of processes, actions, behaviors, and functions. No act is independent, and no act adds to the viability of an organization independently. Every element interacts with every other element in some way, and all the elements together constitute a complex mosaic of movement and intersection. When looked at as a whole, the picture the elements present—and the information they impart—is entirely different from when they are viewed separately. Indeed, looking at the parts independently of each other may lead one to draw conclusions that might impede the progress of a whole process or prevent its completion, with lasting and perhaps limiting results.

> **Key Point**
>
> Chaos is an essential constituent of all change. It works to unbundle attachment to whatever is impeding movement. Chaos challenges us to simultaneously let go and to take on. It reminds us that life is a journey of constant creation.

To help readers adopt the proper perspective, this text discusses the principles of complexity and chaos theory and explains how chaos can affect work, relationships, organizations, and interactions. It also discusses many of the new skills and talents that leaders must acquire, as well as new metaphors and terminology better suited to describe work-related interactions and processes. By attaining a deeper understanding of the implications of systemness and complexity, leaders can relate to and interact with others in new ways and be challenged to develop a new foundation for their role as leaders.

A New Understanding of Planning Is Needed

In the Industrial Age, it was believed that everything should be outlined and planned down to the smallest detail. The expectation was that by planning future activities with great specificity, an organization could respond to the current situation accurately and

effectively. This notion of planning to the last detail assumes much more control over circumstances than, in truth, we actually have. New thinking in complex adaptive systems tells us that far more vagaries influence planned action than we can anticipate. It is wiser to understand the trajectory of change than it is to know the specifics of that change (Hazy, Goldstein, & Lichtenstein, 2007).

When a plan is constructed, the future looks a certain way at that moment in time, and the context at that moment creates the foundation for what is anticipated. However, because change is constant and the greater environment is forever in a state of chaos and creativity, the context is shifting rather than stable. The reality at the planning stage quickly gives way to a new reality that could not have been anticipated at the planning stage. And, of course, this cycle is continuous and never ending, making it impossible ever to plan with broad certainty.

Leaders now must incorporate the vagaries of complexity and chaos into the process of anticipating and planning for the future. Detailing the specifics of some future state in absolute or predictable terms is no longer a viable means of planning. Discernment and signpost reading are better skills to have than are those related to defining and direction setting. Leaders must realize that no real-time insight is sustainable, nor is it entirely accurate. It is simply a reflection of the particular point a person or organization is at a given moment in time in the longer, more continuous and relentless unfolding and becoming.

A good leader can read the signposts that suggest a change is imminent and can discern the direction of the change and the elements indicating its fabric. The good leader synthesizes rather than analyzes and views the change thematically and/or relationally, drawing out of it what kind of action or strategy should be applied or trajectory embraced—that is, the response that best positions the organization to thrive in the coming circumstances. The good leader is adept at sensing changes in the external environment, indeed, even anticipating them, and using those insights to determine what adjustments or course shifts must occur in the planned trajectory to ensure the organization remains continuously relevant.

For a leader to act as a strategist today means not detailing the organization's future actions, but analyzing the relationship of the system to its external environment, determining the ability of the system to respond and adapt in a sustainable way, and translating that relationship and ability into language that has meaning for those who must do the work of the organization (Watkins, 2012). Translating the signposts into understandable and inspiring language is more critical than almost any other strategic task. It is vital that a change have implications for those who are doing the work. Another way of saying this is that it must have meaning to them within the framework of their work activities so that they can commit to it, which they must do if they and the organization are to adapt to the change successfully. The leader's job is to describe the change with language that allows the workers to understand its value and how it will affect their own efforts.

In this new complexity framework, leaders need insights about contextual themes rather than step-by-step guidance on how to implement a minutely defined vision. They must understand that their organization is on a journey and that they need to peruse the landscape continuously for directional guidance rather than create a list of steps through which the organization will move on its way to a preset future. Becoming aware of the themes and undercurrents and reading the contextual signposts regularly is a wiser and

more effective strategy for the new age leader than is laying out an itemized plan that may or may not correspond with future conditions.

Adaptation and Complexity

Central to the concept of adaptation is the understanding that all systems respond collectively to changes in their environment. It is important in this understanding to recognize that systems have an intelligence that reflect a con-

> ## Point to Ponder
>
> Good leaders know how to integrate the rational and the intuitive because both are equally important. They conflict with each other but also complement each other. Consequently, leaders must think clearly and rationally while remaining sensitive to the underlying flow of change.

tinual and dynamic interacting between all of the persons and processes that comprise the system. These ever-interacting change phenomena emerge and reemerge between a system and its environment and within the life of all the elements that give the system form. In fact, in all human dynamics, transformation and reproduction, and change and stability, are intrinsically intertwined. The wise leader understands this interaction and sees it as central to the effort of recognizing change and both embracing it and engaging it (Foti & Hauenstein, 2007; Miltenberger, 2013).

Historically, leadership has emphasized rational and operational science skills and functions at the expense of insight, intuition, and feeling. In most workplaces, the former, seen as more "masculine," is prized, whereas insight, intuition, and feeling, often viewed as "feminine," are taken to be less applicable in the more masculine corporate world.

Even in health care, caregiving and relational behaviors are more often viewed as OK for nurses and doctors to express but as having no place in the business end of service delivery. The principles of quantum science, chaos, and complexity theory, however, warn that failure to incorporate these behaviors into the operations of an organization—in addition to rational, hard-driving, objectified behaviors—reduces the organization's viability and sensitivity to its environment. In addition, too much of the rational and hard driving can alienate people and distance them from the work process, reducing their energy, their creativity, their commitment to the organization, and their ability to perform their jobs effectively.

Simply being capable and competent in form and function is not enough; leaders must also exhibit the ability to balance a complex range of skills and system resources to develop the employees' capabilities and grow the organization. They must know how to create a balance between means and meaning and enter into the relationships among all the elements at the personal level and at the organizational level. Incorporating their vast array of behaviors and skills into the mosaic of interactions creates resonance between the functional and the relational, both of which are essential for developing and maintaining the vitality of person and system.

Leaders Must Find the Right Balance

Weighing the various structures and influences in a work system and finding just the right mix of elements are challenging jobs. Yet that is exactly what leaders must learn to do. And they must learn to do it with a minimum of artificial supports.

> **Point to Ponder**
>
> Information and data are tools for decision making. Because information can be collected ad infinitum, the critical issue for a leader facing a decision at a given moment is whether there is enough information to make an informed decision. Of course, the circumstances determining the amount and type of required data can change. In other words, information needs are dynamic, not stable.

Throughout most of the healthcare system, the various infrastructures are so burdensome and complex that they actually interfere with the ability of organizations to do what they are designed to do. Because of widespread overstructuring, most organizations would not know how to live without the structural elements that encase every function and activity in the system. This is of special concern in a time of value-driven health reform. Much of the traditional tertiary care infrastructure must now give way to a more strongly developed primary health core. This requires deconstruction of the past infrastructure to make way for a more mobile and portable delivery system that responds to a stronger demand for population and community health practices.

In the new age, we must realize that there should be just enough structure to support the integrity of the organization, and not an ounce more. The more structure an organization has, the more that structure demands from the organization and the more resources are drawn away from the service system. Too much structure is actually an enemy of work and effectiveness. Under the rubric of "good order," too much structure drains the energy and creativity from a system and obstructs relationships and interactions necessary for the system's functioning. It ends up crippling the system's ability to do its work and to fulfill its purposes. The goal of an organization's leadership should be to reduce structure to only that required to advance the purposes of the systems and the essential processes of work.

Information, like structure, can easily be overvalued. Clearly, information should play a role in decision making. Yet there is never enough information to guarantee a decision is the right one in given circumstances. Furthermore, an organization can strangle itself with data in an effort to know everything pertinent to a critical decision before making the decision. Leaders need to accept that they will never know enough to guarantee the correctness of their decisions and that information is simply a tool that offers a glimpse of relevant factors at a given point in time. Because conditions are constantly changing, too much dependence on information can lead to poor decisions just as easily as a total lack of information can.

For information to be valuable, its quantity is not as important as its relevance and its volume is not as important as its timeliness. Leaders must know how much information is enough, what its focus is, what it indicates, and what its bearing is on the decisions that need to be made. They also must know when the limits of information have been reached and when its application requires discernment, deliberation, and judgment. The similarity between information and structure is obvious: The right amount of the right kind is critical to organizational effectiveness.

At every level of activity, there is a complex recurring geometric pattern. Quantum scientists often identify this pattern in the language of fractals. Fractals are embedded in every

element and process of life. Although complex, they exert an influence on order and chaos in the universe and are evident in the action of planets and stars, plants and animals, even the beat pattern of a human heart. Our understanding of fractals and their application to organizations flies in the face of every organizational model. True fractal organizations generally represent minimal and flat hierarchies and both generate and distribute accountability and performance strategically

> **Key Point**
>
> The leader is a primary facilitator of the journey to a new way of working. The leader's role is to keep people on the journey and help them understand what that means to them.

and equitably throughout the organization. In more traditional models, including the organizational charts and job descriptions associated with them, a more concerted effort is made to exclude from organizational life the normative disorder, fluidity, and chaos that lies just below the surface. Yet no matter how rigorous the structure, the turbulence, fluidity, and even chaos burst through and create creative discordance and confusion, making nonsense of efforts to control it.

It is impossible to codify all the activities in an organization. How many healthcare facilities, in an effort to truly control circumstances, implement numerous policies and procedures that then are promptly neglected until the next accreditation visit? It is simply not possible to classify all the elements, interactions, and relationships necessary for the care of human beings. The vagaries of the human condition block organizations' ability to create formats or structures that set adequate behavioral or procedural parameters for treating medical conditions. The foundations of action are rooted in the principles of care and service, but although the principles are constant, the context within which they are applied is not.

Here again, it is the relatedness among factors that should drive a leader's response in complex systems. Because the elements, behaviors, and variables affecting action are uncertain, the leader's task is to achieve as much balance as the circumstances allow. And because this balance is fluid, the leader must act to adjust it in response to changes in the circumstances, including internal and external influences. The leader is always interpreting, explaining, adjusting, and applying the issues and dynamics affecting the character of the work and the integrity of the workplace.

Group Discussion

In a fractal, the whole is replicated in each part. Each branch of a tree, for example, shows the same pattern as the whole tree, as does each leaf. The indentations and projections in a few feet of shoreline may mimic those in a 100-mile stretch of coastline. Apply the notion of a fractal to organizations, groups, and teams. For instance, how does the notion of a fractal apply to the design of an organization? To the relationship among leaders? To roles? How does it apply to the organizational chart for a healthcare system?

Besides being an explicator of complexity wherever necessary, the leader must be present to the staff in a way that assures them of positive connection, understanding, and experience. The leader must show that he or she is as vulnerable to the vagaries of circumstance as anyone and can live with chaos comfortably and knowledgeably. Still, it is difficult at best to deal with normative chaos embedded naturally yet deeply within every system. People fundamentally crave order and want their leaders to deliver a sense of stability and "normality." Despite this fact, leaders, rather than insulating people from innate complexity, uncertainty, even disorder, must instead help people to embrace these factors, understand them, harness them, and develop the personal skills necessary to positively use them to transform themselves and the systems within which they live.

Chaos and Paradox Are Always at Work

Even at the fundamental levels of life, chaos is hard at work. Creatures as small as one cell are constantly undergoing both accidental and transitional modifications that give them a better chance of thriving. It is a basic requisite of all life to adapt to changing conditions. The demise of the dinosaur is a good example of what happens when living beings fail to adapt to changes in their external environment.

The age within which we currently live is vastly different from the age we are exiting. Science and technology alter every aspect of our lives. Our challenge is to embrace the new circumstances and sort out their implications and applications as we go. For the person who says, "I don't want to learn about the digital world and how to use advanced technologies," the best response may be, "You could certainly choose to die; it is the only way to intentionally avoid your future." Although facetious, that piece of advice reflects an element of truth. Technological advances and the need and capacity to adapt to them are not going to go away.

In the coming age, leaders will be called to tell the truth, teach coping and adaptation skills, learn new skills, and apply them in new ways in new settings. The infrastructure that generated past leadership roles is disappearing, and the new circumstances demand new roles and challenge everyone to respond to an entirely new set of questions.

Furthermore, the new age will open the door to uncertainty and a general lack of "rightness." The prevailing principles will be open to interpretation and will be applicable in a host of ways. No one response to a change or answer to a question will be clearly the only one or the best one. There might be many correct responses depending on the cultural, social, economic, and intellectual context. Leaders must respect the diversity embedded in every condition or issue (**Exhibit 1-11**).

Every leader is now required to know the techniques for finding common ground, for sorting through the various landscapes representing the diversity inherent in each issue. Also required are consensus-building and group-process skills because a leader's job is to get people to come together around issues and help them determine appropriate responses within the context of their own roles. This is a challenge that cannot be met by establishing standardized job procedures or rules. Indeed, competent leaders must be able to "set tables" wisely and carefully to ensure that the right people are engaged in the right way around issues that are central to their role and essential to their adaptability and sustainability.

Exhibit 1-11   Paradox

Many paired elements of life appear contradictory but at a deeper level are in fact complementary. These include the following:

- *Chaos and order:* There is order in all chaos and vice versa.
- *Creativity and tension:* Tension leads to creativity and creativity causes tension.
- *Conflict and peace:* Conflict is necessary to peacemaking, containing in it the elements upon which peace must be built.
- *Difference and similarity:* Difference seen at a great distance appears as an integrated whole.
- *Complexity and simplicity:* Complexity is simply the visible connection between aligned simplicities.

Leaders must develop an affection for legitimate risk and for the boundaries of agreement and understanding. They must be able to "push the river" so that the mental models people bring to the resolution of concerns or the determination of strategies and actions are shifted or even fundamentally altered. There is nothing worse in deliberation than using a mental model or frame of reference that does not fit the prevailing circumstances. As we move inexorably into the new age, we must try to understand its characteristics within the context of its "becoming" rather than of the past. Peter Drucker said it best when he suggested that we must all close the door on the Industrial Age and simply turn around (Drucker, 2009).

It is in turning around to face the future that we begin to confront the inadequacies of our historic mental models. We begin to see the future unfold within its own context rather than one we bring to it from our past experience. We look over the landscape of our becoming and are stimulated to go to those places that least fit our prevailing mind-set and that challenge what we understand and the language we bring to the journey.

Leaders need to be called out of certainty into experimentation. They must take smaller steps and let the measured consequences of each step suggest the best direction in which to move next. It is in the steps of experimentation—of testing and evaluating—that their direction and its appropriateness can be discerned most easily. Finally, leaders stand to gain most information about what is viable and sustainable by bringing a variety of testing procedures together and using them jointly.

Pay Attention to the Informal Network

In every organization there is a formal structure and process and an informal network. The informal network is primarily relational and carries most of the information about how people in the organization think or feel and what their sentiments are regarding almost anything in the system. It is as vital and valid a part of the

> **Key Point**
>
> All decisions and actions are rife with risk. Risk cannot be eliminated and should not necessarily be decreased because courses of action that possess great value tend to be associated with higher risk. What is important to determine is not whether the risk can be eliminated, but whether the level of risk is appropriate for the actions undertaken and, if so, what strategies can accommodate the risk.

system as any other, and it requires attention because, among other things, it typically contains essential pieces of the dynamic that have been overlooked or missed as well as the "undiscussables," issues that are too sensitive to lay on the table and opinions that do not reflect the prevailing point of view. Embedded here, too, are some of the most dynamic notions of what should happen or what should be done.

All organizations, large and small, have a small number to hundreds of informal networks that operate as peer groups, colleague networks, service teams, care communities, long-term employee groups, task forces, and so forth. Huge inflows and outflows of information, sharing, and knowledge move dynamically through these matrices and informal groups in ways that have a significant impact on organizations and systems. Indeed, much more of the real daily work, relationships, and interactions is expressed in informal networks than is seen in the more formal structures of organizations. Leaders generally fail to recognize the power and influence of these informal networks and use them far less than the capacity and value they bring to organizations warrant. Although these informal networks are powerful, they represent a level of complexity and relational density that is difficult to manage in formal and systematic ways. However, through leadership recognition, access, and interaction within the context of these informal networks, much can be accomplished and a great deal of the dynamics of change can be effectively harnessed to enhance quality and improve service.

Group Discussion

Karen Weiss, RN, is the head of the nursing department in a medical clinic. The staff members like her because she can get things done and keep things moving. Although she has a highly developed sense of order, recent changes are making it harder for her to stay "in control." She feels as though things are getting ahead of her and she is losing her touch. Others also are not as satisfied with her performance as they were. Discuss the following questions: What is the real issue in this case? How is Karen's need for control in conflict with the principles of complexity? Who is accountable for decisions? Should Karen change her manner of leading? If so, how should she change it, and what does she need to do to change it? How does Karen ensure that the staff is more involved in decisions that affect their own lives?

All elements of the system, whether formal or informal, are a part of the dynamic of change in the organization. Each can be a vehicle for action and even transformation. Leaders need to notice all the informal pathways and networks of communication and relationship, from hallway conversations to lunchtime discussions, from whispered comments to sarcastic asides—each plays a role in the complex web of interactions necessary for sustaining the organization. Taking an opportunity to hear, communicate, or interact is never inappropriate. All means are legitimate and deserve attention. Each, when joined with the others, contributes to discovering the state of the organization and determining the proper actions to take to strengthen it.

Simple Systems Are Linked to Create More Complex Systems

The universe consists of a web of simple and discrete networks that cannot survive or function without some intersection and interaction with each other. Complexity is the sum of simplicity. Each is intrinsically linked with the other. Simple systems seek each other in a mysterious dance of self-organizing and join with each other at appropriate intersections to configure a larger whole. Called *chunking*, this process is similar to fitting together pieces of a child's erector set to build a structure. Each element has its own purpose and meaning, but its purpose remains unfulfilled until it interacts with the other elements. In short, their linkage, connection, and interactions demonstrate a synergy of interfaces and relationships that can define the operation of the whole only when seen acting together.

The implication for human organizations and behaviors is that all things begin with the simple. Sustainable change rarely operates from the top of a system; instead, it usually is initiated and lives at the center and works its way outward. For instance, the purpose and meaning of a service organization are generated over the places where the staff does its work, closest to where the services are provided, which is also where the organization's value-grounded, dynamic growth, adaptability, and creativity originate and are sustained.

Leaders need to understand that sustainability comes from the places where the organization lives out its life—essentially its points of service. There, the pieces of the organization come together to fulfill the organization's purpose. Providers and clients come together to carry out the processes toward which the organization's infrastructure and operations are directed.

Although leaders profess to recognize the importance of the point of service, traditional organizational design does not reflect its key role in deciding and acting. The organizational hierarchy typically strangles the essential dynamics of the point of service and creates an artificial and unsustainable framework for decision making and action to happen at places far away from the point of service. Individuals not at the point of service take responsibility for strategy, policy, and direction setting and, by so doing, exclude those whose obligation is to carry out work and actions to fulfill strategy, policy, and organizational direction. A universal principle of system effectiveness states that the farther away from the point of service a decision is made about what goes on there, the higher the risk, the greater the cost, and the less sustainable the decision. Sadly, many organizations increase their risk and their costs and fail to attain their objectives as a result of failing to incorporate this principle into their way of doing business.

Staff, in constructing the correct complex relatedness and infrastructure, must be free to "chunk" from their center and create linkages with the strategic, financial, and support structures that facilitate their work. Here again, tearing away much of the intervening infrastructure and the organizational layers and compartments serves to free the

> **Point to Ponder**
>
> Traditionally, knowledge has been viewed as something that can be possessed. Today, however, it is viewed as a utility—something not possessed, but accessed. People who want to use knowledge should know how to access it, how to apply it, and when to let it go.

organization to enter into the more fluid and variable relationships it needs to provide stakeholder engagement in a way that advances health care. Then, those who own them can join the simple, essential components of local locus of control and systems strategy to other essential components to construct a web of intersections and resonating connections that hums with the life and meaning underpinning sustainability.

The operation of digital equipment perhaps best exemplifies these forces at work. Software code defines functions but must interact with other pieces of data before it is useful to the technology user. A certain segment of code might have application value, but it must interact with other segments before this value can be realized. In other words, each segment has value in virtue of its contribution to the whole.

Learning occurs in the same way. Simple concepts lead inexorably to understanding other simple concepts, and when they are all ultimately tied together, the learner understands the interdependence of different simple processes and thereby achieves knowledge. Furthermore, the learner recognizes that knowledge, rather than being valuable in and of itself, is valuable to the extent that it can be applied in action.

What complexity teaches us about knowledge is that it is not so much a capacity as it is a tool. It has relevance at a particular moment or in a specific situation. A shift in the context, an increase in understanding, or new information affects the elements of knowledge and challenges the person to "move on" and adjust what is known, valued, and applied. In fact, an endless dynamic is composed of the aggregation of knowledge, the letting go of what is no longer valid, and the reaching out for what is next and expands the endless journey of learning. The critical point here is that what is relevant or irrelevant, adequate or inadequate, at any given moment is not the whole of a person's knowledge but rather developing and adapting pieces or elements of knowledge (chunks). The person moves in and out of these chunks and, in so doing, alters the relationship between themselves and the whole complex of knowledge.

In systems thinking, leaders are aware of the importance of intersections. At intersections much of the work of leadership unfolds. The interface between the elements of a system is where the challenge and the work of effectiveness occur. The problems of creating good fit between the pieces of a system require focus and effort on the part of the leader and serve as the place where most of the "noise" and confrontation between people and systems unfold.

Good leaders understand this and can use it in the interests of others and the organization. They never get so attached to any specific item, process, or activity that they treat it as permanent and/or unchanging. Each item, process, or activity is part of a mosaic and comes and goes depending on demand at various times. Good leaders know to let go when that is appropriate and to take on and adjust when that becomes necessary. Furthermore, they know that the organization's complex and chaotic circumstances require them to keep an eye on the larger picture, read the changes (in the constant interface between environment and organization) that are occurring or that are about to occur, and make the necessary adjustments at the appropriate time.

Good leaders know that a complex, adaptive system works when the simple systems work. If something is wrong at the point of service, the system as a whole is affected. Because the interdependence between simple components is so tight in an effective and
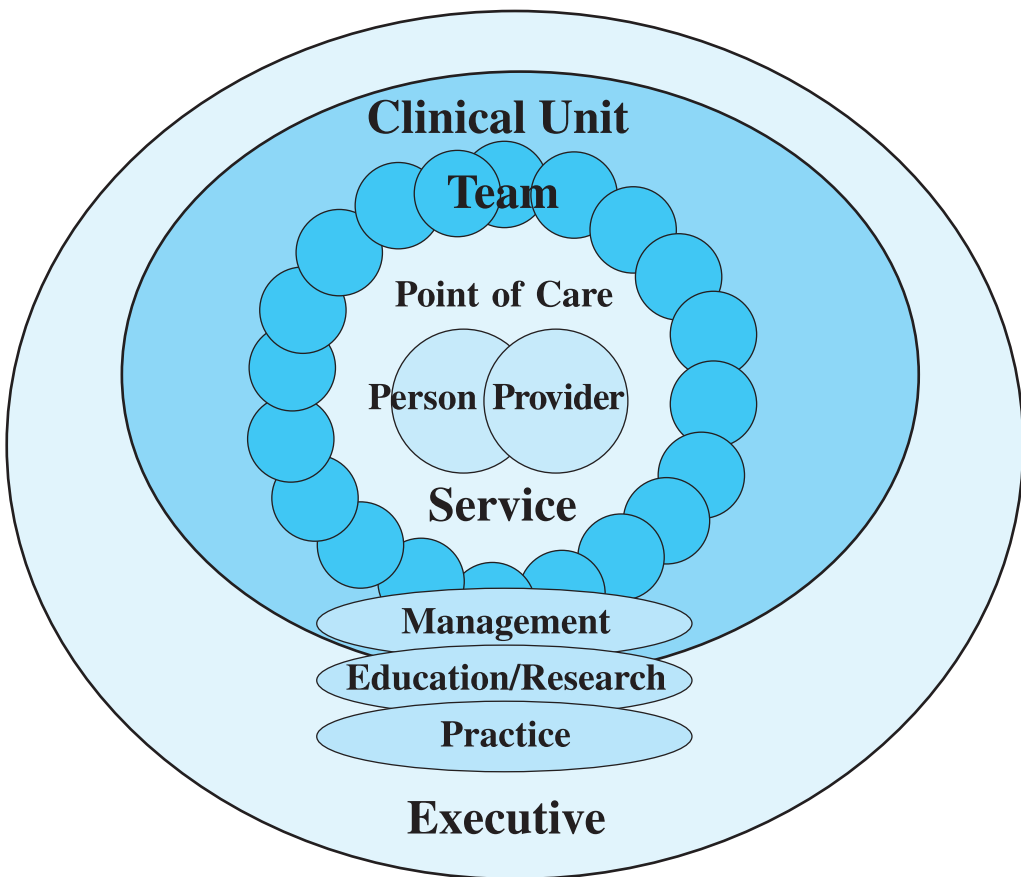
Figure 1-4 Point-of-Service Systems Design.

viable complex system, any break in the simple (or local) systems leads to breaks at all levels of the complex system. By ensuring the effectiveness of the simple systems, good leaders facilitate the integrity and efficiency of the whole system (**Figure 1-4**).

Systems Do Not Compete with Each Other, but Instead Simply Seek to Thrive

Chaos theory and quantum theory hold that competition is anomalous. Still, the current literature on organizations and their management contains numerous discussions of the viability and importance of competition. This is a simplistic and often uninformed notion of the conditions and circumstances of thriving and advancing both as individuals and as communities. This rather antediluvian and unidimensional notion associated with thriving and advancing holds sway among the most powerful in the business and political communities to the detriment of those communities they lead.

All living systems seek to thrive. At a fundamental level, they are not concerned with each other's survival unless it is somehow related to their own need to thrive. To this end, all life has a complementary and interdependent relationship with other life rather than

Figure 1-5 Structural Integrity and Interdependence: Functional Components of a Health Structure.

a competitive one. Adaptation is not about competition between the fittest but about survival of the fittest, and the survival of a system depends more on its inherent adaptability to its environment and its ability to build community response than on anything else. To thrive, the system must have beneficial interactions with its environment, universal internal response to the environment, and the capacity to adjust to the prevailing conditions quickly and effectively. A system is fundamentally in competition with itself to thrive, not with anyone or anything else (**Figure 1-5**).

Generally, the concept of being in competition with oneself is foreign to unilateral capitalistic ways of thinking (as opposed to collateral capitalistic notions). Still, even unilateral capitalism treats competition as fundamentally a personal exercise—a contest between oneself and others for profitability and success. What this approach fails to recognize is that success has less to do with one's competitors than with one's own adaptability, creativity, energy, and commitment to succeed. In other words, the pursuit of success should not be viewed as a contest with others but as a personal effort to give one's best and to thrive in the environment one has chosen to live in.

In the emerging age, persons and organizations will be challenged to adjust to a new context with a new set of rules. Those who thrive will be those who can read the signposts of environmental shifts quickly and effectively and apply the resulting insights to their own lives and operations. Organizational leaders need to learn the fundamentals of thriving in the new age of fast-paced technology drivers. They must make a diligent effort to keep up with the transformations in technology, global communications, information infrastructures, and social conditions and the drive for sustainable value. Here again, reading the signposts to create a tight fit between the demands of environmental changes and the system's capacity to embrace and adapt becomes a very important skill. Paying attention to indicators, monitoring innovations, experimenting with new and unfamiliar approaches, and living comfortably with ambiguity and the noise of constant change are all essential skills of good leaders of the future.

The Compression of Time Will Affect How Work Is Done

There simply cannot be a leader anywhere on the earth who has not noticed the not-so-subtle change in our sense of time and space. Most people have noticed how time has sped up and how radically its quickening has affected the content and flow of work. Leaders can turn anywhere and hear others in the organization suggest that there is insufficient time to do all that is required. Leaders themselves are aware of how very little time they seem to have to meet a growing set of demands.

Technology, including the prevailing methods for purchasing and shipping material goods, is primarily responsible for the compression of time and work. For example, LASIK surgery, a type of corrective eye surgery, takes only 7 or 8 minutes to complete; Internet grocery stores deliver groceries within 2 hours of order placement; and communication by email and text message is virtually instantaneous. Quick transmission of information and quick delivery of goods and services are increasingly normal in our global society.

> **Key Point**
>
> There is never enough time. Technology has compressed time so that what once was enough is now insufficient. Leaders must help others see their work from the perspective of compressed time. For example, now that clinical interventions require less time, practitioners and patients must shift their expectations to fit the narrowed time frame.

The need for narrow hierarchy—for many layers of decision making and management—has all but disappeared from the business world. In the late 1980s and early 1990s, business leaders reconfigured their organizations to eliminate management structures that had long been part of organizational culture. The goal for organizations was to become nimble and fluid, and whatever impeded their achievement of this goal was either cast off or reconceived.

Today, healthcare organizations are experiencing a similar crisis. The growing demands of a value-based approach to health reform and system transformation require a complete reconceptualization of the design and infrastructure of healthcare delivery. The need to move from tertiary, process-heavy health service delivery to a more nimble primary healthcare model that advances the net aggregate health of American citizens creates new pressures for deconstructing, reconceiving, and recalibrating contemporary health service designs and models. Impeding this transformation is tertiary-care-driven brick-and-mortar infrastructure that supports a delivery system that is no longer relevant (this infrastructure hinders the system's survival). Changes in technology, service structure, clinical models, consumer demand, and healthcare economics coalesce in response to the need for value-driven healthcare organizations that possess the same fluidity and nimbleness required of technology-grounded businesses.

The current chaos in the health system arises from conflict between leadership commitment to an outmoded infrastructure and a system design that reflects value. The myriad stakeholders in the healthcare industry—administrators, nurses, doctors, hospitals, pharmacists, and so on—struggle to hold on to their piece of the healthcare pie without realizing that the pie is now being sliced in an entirely different way. The

emerging healthcare system demands a significant change in the intersections of professions and their relationship to the health system and the individuals and populations it serves.

The compression of time works inexorably to reconfigure the context for health care and restructure its framework—often without consent from participants. Healthcare leaders must focus on interpreting external demands and translating them into internal actions. They are being called into the chaos of creativity to produce a good fit between the new value framework and the infrastructure that must be constructed to support it.

Much of the current work of healthcare leaders involves deconstructing existing health service models. The current infrastructure must be deconstructed so that it can be replaced by newer, value-driven models of service and support. Leaders must perform a range of activities in reconfiguring health care to fit the coming age, when space and time will be even further compressed, services will be more fluid and mobile, and the locus of control will shift from the provider to the user. The changes that will occur include these:

- *The hospital bed will cease to be the main point of service.* During the next two decades, the number of hospital beds will decline by approximately 25%. Indeed, in the current healthcare paradigm, admission to hospital bed–based services is an indicator of the failure of the health system to provide health-based services that circumvent inpatient services.
- *The service structure will be decentralized.* The healthcare system will deliver small, broadly dispersed units of service across the continuum of care.
- *Increasingly, services will move out of the hospital.* By the end of the next decade, more than 70% of the medical services currently provided in hospitals will be provided in clinics, community settings, health homes, and primary care nurse practitioner and physician offices.
- *The core practices of the professions will be substantially altered.* The institution-based late-stage services that once predominated will be replaced by high-intensity primary care–based interventions that do not require hospitalization. These interventions will transform the roles of the various health professionals.
- *Users of health services will become more accountable for their own health.* Providers have the major job of helping to transfer the locus of control of medical decision making and life management to individuals, who have never had it and do not yet know what to do with it. Healthcare providers' work over the next two decades will include educating the users of health services and assisting them in acquiring the necessary skills to manage their own health through health management and preventive healthcare programs.
- *The users of health services and the technology of health care will progressively interface.* Virtual and technical interaction and communication will become the norm of health service provision. Connection between providers and patients will increasingly be virtual and seamless, with supporting technology enabling the provision of clinical services to patients remotely.

For the deconstruction of health services to be effective, leaders must know that this value-driven transformation is taking place and agree to lead the effort. The conditions are already in place, but the work of making the change meaningful and feasible has yet to be done. If a leader is opposed to the transformation or is unable to acquire the necessary skills, both the leader and the transformation will suffer.

One responsibility of leaders is to help others mourn the loss of practices and roles that are becoming irrelevant. For example, many popular reasons people have entered the health professions will no longer apply to their emerging roles. Despite this, health professionals continue to believe that their initial intent for entering their profession is still valid. Or they simply refuse to acknowledge that their idealization of the past might be keeping them from embracing the emerging and far different future of health service, to their own detriment.

One way to aid health professionals in mourning their losses is to help them enumerate these losses and determine what they must let go to obtain the skills and master the roles they need to function in the emerging reformed and transformed healthcare system. Each person must voice his or her losses and symbolically let them go to turn in the direction of change and meet the coming challenges. By doing this, a person becomes free to explore the innovations and ultimately design a personal strategy to accommodate his or her profession and its role in transforming health care and improving the experience for people and communities.

Death is part of the cycle of life and is a requisite of all change. Not everything in the universe that thrives will always do so. When circumstances change radically, some formerly vigorous systems fail. In some cases, the demands are beyond the system's capacity to adapt; in other cases, the changes call for a new work format that cannot be achieved simply by altering some of the characteristics of the workplace.

Leaders are obligated to help those that should diminish or die do so quickly. They are expected to make it clear to the staff that the process of bringing something to an end is as necessary as any other organizational process. A part of the tough work of facilitating necessary change is altering staff attitudes about the permanence of work. Employees do get stuck in their rituals and routines. Their attachment to these routines may be the only point of security they have in this quickly changing world. What they might not know is that holding onto practices that are no longer relevant endangers their ability to succeed in the future. Leaders must "truth tell" to keep staff in mind of the fact that work effort and function are transitory and that a mindless attachment to the work itself may be the greatest impediment to their own success and that of the system.

Group Discussion

Twenty years ago the average length of stay in a hospital was 5.7 days. In the coming decade, the average procedure will require a stay of only 4.5 hours or fewer. These two facts indicate the extreme shift in the nature of clinical services. Discuss how the new service model will change the way healthcare providers work. What tasks will cease to possess value? How can leaders convince staff to abandon old practices that are no longer relevant? And what are the implications for patients?

Leaders must keep their eyes fixed on the work and on how changes might affect the ability of staff members to do the work. The function of work continually changes, and attachment to work routines simply slows individuals' adaptation. A refusal to adapt does not diminish the demand for change; it just makes the adjustment to the change increasingly more difficult for the individual.

All Change Ultimately Makes Good Sense

As Stephen Hawking has so many times eloquently stated, "Change is." Chaos, complexity, and change are not things but forms of dynamic activity. According to Hawking, they are the only constants in the universe (Hawking & Mlodinow, 2009). They will never cease because their end would be the end of everything. Perpetual dynamic movement is what underpins every action and process. This aspect of reality is less understood and less often made use of than physical laws, but it exists nonetheless.

Leadership is mainly concerned with adapting to change, and all the leadership functions and activities outlined in this and other contemporary leadership texts are informed by this understanding. In fact, theorists are inclined to be less definitive than formerly in their statements about the attributes of leadership and in their recipes for leadership success. Instead of being guided by an unchanging set of principles, leaders need to be fluid and adaptable because their role changes in concert with the changing conditions.

Leaders are aware that it is in the pursuit of meaning that the direction of a change can best be discerned. They continually look past the real and the present toward the unformed and potential to better evaluate the present and the direction of transformation (assessing how changes in the external environment create a demand for personal and organizational change). The subtle themes and ebbs and flows that lie just beneath the surface of events and experiences have more to say to leaders than do the events themselves.

Leaders know that much of what is seen and experienced is a metaphor for the operation of the infrastructure of change. The chaos so often represented in the change process is a cover for an explicit and elegant order that can be perceived only by focusing on the whole rather than on the parts. Indeed, looking at only the individual parts makes it almost impossible to see the integrity, order, and beauty embedded in an elegant web of flow and linkage. Staff is hungry to obtain from the leader this insight about the operation of the whole and how changes at this level of the system affect the choices and actions of persons at the system's points of service.

Leaders are motivated by the connections that give meaning and value to the current and the real (**Exhibit 1-12**). The rules that guide the journey of change are both simple and complex, and the full set is not fully comprehensible all at once. An important task for any leader is to discern the predominant operating variable(s) affecting the journey at any given moment. Using insight, the leader can apply the value the predominantly operating variable(s) represents and use it as a window for viewing the next

---

Exhibit 1-12   Unmotivated Versus Motivated Leaders

Unmotivated	**Motivated**
• Focus on the present	• Focus on the potential
• No time for the work	• New kind of work
• Things are getting worse	• Things are different
• Cannot do the work any more	• New mental model for work
• No one knows . . .	• How can I get to know . . . ?
• It is too much for one person	• Share the work
• This too shall pass	• It is a journey I lead
• Doing more with less	• Doing different work differently

---

factors, principles, or interacting forces pushing toward the changing next steps in any transformation.

Leaders are forever caught in the potential. The ability to thrive in this potential distinguishes good leaders from the rest. Good leaders are always on the edge of chaos, looking over the horizon, looking just beyond the precipice. Located there, they can read, interpret, and express what they discern. Their real gift is their ability to backtrack to where those they lead are living and working and translate what they have seen into a language that has force and meaning for those who can hear it. They then have the job of getting behind the staff and pushing them into their own conceptualization and definition of response to the emerging reality, allowing the staff to own what they see and act on it in a responsive and viable way.

Conclusion

Leadership skills are learned skills, and their mastery requires neither magic nor a high level of intellectual capacity. Leaders emerge in a wide variety of circumstances and reflect a broad range of talents and personalities. There is no one pattern of behavior or personality type that is most suitable for the leadership role. In short, leaders come in every size and shape.

What leaders must possess is the ability to understand the vagaries and complexities of human interactions and relationships. In their role as leaders, they must take into account chaos and complexity as these do their work and create their inimitable patterns of adaptation and growth. Good leaders live in the edge land between now and the very next thing and can engage folks in the journey of the whole across the landscape of a preferred and optimistic future.

Leaders in the coming age will need new skills and new insights about leadership and the preferred methods of "journeying." These skills and insights can be learned, adapted to current conditions, and applied in a variety of ways to meet the demands of the journey. In their application, an individual may come to discover the leader in him- or herself, feel the excitement of leadership work, and inspire others in the journey of discovery and advancement.

Case Study 1-1

Transforming Leaders

Cameryn is the vice president for professional development at a large metropolitan hospital in the Midwest. She has been in her role for 6 years and has accepted new responsibilities over the years, widening her scope of work to include the direction of all of the clinical nurse specialists (CNSs), the new graduate residency program, and the research- and evidence-based practice initiatives. She also oversees the Magnet program, which strives for continual readiness for redesignation.

Cameryn and some of the other leaders in the organization have become concerned about the competence level of some of the nurse managers and their assistant managers, clinical leads, and shift supervisors. The managers and others "get the job done," but they do not seem to be focused on inspiring the workforce to achieve excellence in their work or preparing potential leaders for succession. In fact, some of the managers seem to be threatened by informal leaders who excel in the clinical setting rather than encouraging them to develop their skills and competencies so as to assume direct leadership roles in the future.

For all in manager and supervisory roles, the hospital provides a quarterly leadership educational event with motivational speakers. The feedback regarding the leadership event is positive, and it is expected that the managers share with their staff the new knowledge gained from the motivational speakers and presentations. How this new knowledge is shared and disseminated is not assessed. Cameryn wonders whether it is shared at all and questions how well the leadership messages are integrated into the daily behaviors and activities of the managers.

Cameryn has been reading about transformational leadership and how one of the characteristics of a transformational leader is to inspire others to achieve what they previously thought was impossible. Cameryn reflects on those in her own career who inspired her to return to school for further education and ultimately to seek roles where she could influence nursing practice and patient care. In her heart, she wants to provide the same experience for all developing nurse leaders in the clinical setting and also in beginning-level management positions. She believes that management is far more than "getting the job done and completing tasks" and needs to include behaviors that transform individuals into those who have a thirst for new knowledge and quest to constantly change the status quo to achieve excellence in their work.

Cameryn is inspired to do something about the development of the nurse managers. She realizes that the first step would be to inspire her colleagues to embrace the same vision for nursing leadership at all levels within the organization, especially with their focus on managing budgets and meeting organizational priorities. Cameryn is convinced that with better prepared frontline managers, many of the organizational priorities could be achieved more expediently. She wants the group to examine the current roles expected of clinical leads, shift supervisors, nurse managers, and their assistants and the personal and experience requirements for the roles. She also wants to impress upon her colleagues that their own behaviors strongly influence those who are watching their interactions

with others and daily behaviors in their roles. She realizes that this is a sensitive subject, and she decides to develop a strategy to informally lead her colleagues on a journey for their own improvement and to influence them to improve the experience of their direct reports. She realizes that the interconnection between her colleagues and their direct reports is critical for the changes that she envisions to transform every nurse manager and supervisor into true inspirational leaders.

Cameryn decides to move beyond the occasional inspirational speaker and elects to empower the management team at all levels with as much information as possible about transformational leadership, workplace empowerment, healthy work environment, and nursing excellence. She works with the Collaborative Governance Council for Professional Development to initiate a leadership journal club for clinical leaders and all levels of management. The journal club is led by the members of the Professional Development Council who choose the journal articles to read and review. The council also establishes group meeting norms, leads the discussions about the articles, and creates a short summary of the articles for all of the nursing staff to read in the *Magnet Nursing Newsletter.*

Cameryn also decides that it is important to determine the actual learning needs of those in management positions, so she develops a self-assessment tool using the leadership domains outlined by the American Organization of Nurse Executives and the Benner levels of competency as the response set. The new assessment tool provides information as to how each manager, assistant manager, clinical lead, and shift supervisor perceives his or her level of competence in each of the leadership domains. From that information, Cameryn plans to develop educational content and experiences that are targeted to areas where managers perceive themselves to be least competent. She also meets with those who are more expert in the leadership domains and discusses their mentoring those who are less experienced and competent and presenting some of the formal content needed for development of the frontline leadership team.

Recognizing that professional development is a very complex and multileveled task, Cameryn also plans to develop educational content and experiences for the more expert group to teach them how to mentor others and how to prepare and present educational content using teaching methods that are innovative, engaging, and inspiring to the learners. Cameryn realizes how interconnected each level of the plan is and how necessary it is to create a fluid and adaptable project management plan to guide the various stages of development to transform nurse managers into true leaders.

She soon realizes that in her work with the collaborative governance councils to develop an educational intervention for the frontline managers, she has forgotten to engage the Human Resources department, which is also responsible for leadership development. There are many indications of their discontent with her new leadership development program. When Cameryn recognizes their concern, she meets with them to discuss ways that Human Resources could be instrumental in the assessment and development of frontline managers.

Needless to say, not all of her colleagues embrace her vision to transform the leaders in the organization. Many barriers emerge that would dissuade most from continuing to

achieve their vision, and Cameryn is disappointed at times and must continually refocus her energies to remain on course despite the barriers. When she recognizes that one of her colleagues or one of the nurse managers is not "on board," she spends personal time talking with that person and helping to translate the vision so that it could become his or her reality as well. She is continually engaged in dialogue with others to support the change effort, and she formally recognizes the actions and efforts of those who are involved in mentoring less experienced nurse leaders and those who are involved in the educational activities.

The transformational process has taken several years, but reflecting on the progress, Cameryn and her colleagues believe that significant changes have occurred in the organization and that all of the nurse leaders at every level have benefited from the efforts to enhance the competencies and skills of the frontline managers. The benefits of the program are validated with significant improvements in the employee opinion surveys and in surveys to assess the healthy work environment.

Questions

1. How do you think that complexity science and quantum leadership provide a framework for an initiative to advance the competencies and skills of frontline managers and to change the management culture to a leadership culture in an organization?
2. How effective do you think that Cameryn was in transforming the leadership culture in her organization? What might she have done differently to facilitate the change process?
3. One of the roles of the quantum leader is to read the signposts that give direction and feedback regarding the change process. What were some of the signposts that Cameryn encountered during the development of the frontline manager group, interactions with her colleagues, and the encounter with the Human Resources department?
4. In your opinion, what effect will advancing the frontline managers, her own colleagues' competence, and transformational leadership culture have on the organizational climate, nursing satisfaction, and even patient outcomes?

Case Study 1-2

www

Inspiring Greatness

Lynn has been the dean of the College of Nursing at a prestigious university for the past 2 years. Others describe Lynn as having incredible energy and vision, and being someone who is in constant motion, leading and transforming the college into a powerhouse among the other colleges at the university. It would seem that Lynn knows no limitations or boundaries to her visions. She is recognized as an extraordinary leader by her colleagues at the university, and she is known as a national and international expert in her clinical area of expertise as well as in her direction for the development

of many interdisciplinary programs within the College of Nursing. Lynn has multiple appointments to national advisory boards and is a fellow in the American Academy of Nursing as well as a number of other nursing practice academies. She sits on several interdisciplinary strategic planning expert panels for national healthcare reform and other health initiatives. Clearly, she is recognized as one of the top leaders in nursing and health care.

Lynn is the first to recognize and acknowledge that being a national expert does not make it any easier to initiate and execute change within one's own organization. Even though Lynn is acknowledged as an external leader, she's continually challenged internally with the same barriers of resistance that less recognized experts encounter when they try to initiate change within their organization. Although Lynn has boundless energy and is motivated to help others make a significant difference in their work and contributions, she also struggles with how to manage those who do not embrace her vision or have the same passion for accelerated change. When asked how she manages her feelings related to the naysayers in her life, she states that she seeks to listen carefully to the message that they are trying to impart and understand their perspective on the matter and their concerns and fears. From that framework, she tries to find a connection between her own vision and the vision of those who oppose her, realizing that a shared vision is the beginning of all successful change. She then seeks to find a way to focus their attention on what is shared in common in their visions and highlights areas where they are interdependent or mutually dependent on one another to achieve their visions.

The nursing and healthcare literature is replete with evidence and opinions about the need for interdisciplinary collaboration to ensure optimal patient outcomes, professional role satisfaction, and healthcare excellence. With this in mind, Lynn proposes to develop an interprofessional curriculum for the colleges of nursing, medicine, pharmacy, and social services. Lynn develops a proposal for the intercollege planning committee and the provost that outlines a number of courses that could be taught with an integrated curriculum to students from each of the colleges. She also includes how the proposed integrated curriculum could be budget neutral or actually realize a cost savings because classes presented to each college in duplicate would be eliminated and integrative classes would be developed using fewer faculty and facility resources. Lynn supports the proposal with evidence about the positive effects of an interdisciplinary approach in improving relationships among professionals and the recommendation from the Institute of Medicine and Robert Wood Johnson Foundation report on the future of nursing.

Lynn is not an inexperienced leader, so she anticipates that there will be resistance to her proposal. She tries to prepare herself for all the voices that will say, "It can't be done. We've never done it before. We are successful with the current curriculum structure," and offer a host of other objections. Some of the loudest voices of opposition justify their position by stating that the social power imbalance between nursing and the other healthcare professions is a reason why the integrated curriculum should not be implemented. Some mention that the intellectual level of the medical and pharmacy students is far different from that of the nursing and social work students and that the nursing and social work

students would not be able to manage the rigor of the courses needed to educate future physicians and pharmacists.

Some of the meetings are intense, chaotic, and filled with motion as the curriculum committee discusses the pros and cons of having an integrated curriculum. At times Lynn is very discouraged with the progress, but she keeps focused with positive energy and strong belief that her proposal is critical to improving patient care. She recognizes that the simple proposal is loaded with complexity and the discord that is happening is an important part of the process as participants reflect on their beliefs and values. At times Lynn wishes that the provost would simply step up and direct the group to develop an integrated curriculum because Lynn realizes that the provost supports the proposal. On the other hand, she realizes the value of the change process and how the participants' values and beliefs will morph over time as a result of the discussions, readings, and continual analysis of the pros and cons of the proposal.

Lynn recognizes the need to be patient and not to push the change, but rather to quietly influence the others on the merits of interprofessional education. She provides a number of articles from reputable journals, arranges for speakers on the topic, and even creates an all-day workshop to bring in national speakers and participants to discuss strategies to develop interprofessional curricula. Of course, she arranges the workshop around the availability of the other deans so that they can attend the workshop as well. She even arranges for a few of the more forward-thinking deans to present at the workshop. She invites one of the other deans to copresent with her at an international conference focused on interprofessional education. Lynn acts as if they have already accepted the idea even though she knows that part of her strategy is to convince them to accept the proposal.

Within the year the curriculum committee not only accepts the proposal for an interprofessional curriculum to begin the next year, but actually acts as if the notion was their idea to begin with. At this point, Lynn realizes that she has successfully managed the change.

Questions

1. Identify the elements of complexity in this case study.
2. How effective do you think Lynn is in managing the conflict, complexity, and the chaos that emerges around her proposal to develop an interprofessional curriculum?
3. How well does Lynn read the signposts and develop strategies to manage her vision?
4. What processes might have been used to help the curriculum committee to accept the proposal and move beyond their personal agendas, values, fears, and doubts about the importance of interprofessional education?
5. What role do you feel that a quantum leader needs to play in developing consensus around decision making?
6. What quantum leader characteristics does Lynn portray in leading the group to embrace her vision and to change and adapt the curriculum to an interprofessional focus?

References

Birk, S. (2013). The future of physician leadership: Physician leaders and the changing healthcare landscape. *Healthcare Executive*, *28*(1), 8–10, 12–14, 16.

Bridges, W. (2002). *Way of transition*. New York, NY: Perseus.

Brown, S. M. (2009). *Essentials of medical genomics*. Hoboken, NJ: Wiley-Blackwell.

Drucker, P. (2009). *Management*. New York, NY: Harper Collins.

Edersheim, E. H., & Drucker, P. F. (2007). *The definitive Drucker*. New York, NY: McGraw-Hill.

Foti, R., & Hauenstein, N. (2007). Pattern and variable approaches in leadership emergence and effectiveness. *Journal of Applied Psychology*, *92*(2), 347–355.

Hawking, S., & Mlodinow, L. (2009). *A briefer history of time*. New York, NY: Bantam.

Hazy, J., Goldstein, J., & Lichtenstein, B. (2007). *Complex systems leadership theory: New perspectives from complexity science on social and organizational effectiveness*. New York, NY: Vintage Press.

Klug, W. S., & Ward, S. M. (2012). *Essentials of genetics*. Boston, MA: Pearson.

Miltenberger, L. (2013). Pathways to effective collaboration: A dialogue on the new competencies required for the nonprofit leader. *Journal of Leadership Studies, 7*(1), 46–47.

Murphy, S. E., & Riggio, R. E. (2003). *The future of leadership development*. Mahwah, NJ: Erlbaum.

Nickerson, J. A. (2010). *Leading change in a Web 2.1 world: How ChangeCasting builds trust, creates understanding, and accelerates organizational change*. Washington, DC: Brookings Institution Press.

Sreekantan, B. V., & National Institute of Advanced Studies (Bangalore, India). (2009). *Science, technology, and society*. Shimla, India: Indian Institute of Advanced Study.

Tait, A., & Richardson, K. A. (2010). *Complexity and knowledge management: Understanding the role of knowledge in the management of social networks*. Charlotte, NC: Information Age.

Volti, R. (2010). *Society and technological change*. St. Louis, MO: Worth.

Watkins, M. D. (2012). How managers become leaders. The seven seismic shifts of perspective and responsibility. *Harvard Business Review*, *90*(6), 64–72, 144.

Yang, A., & Shan, Y. (2008). *Intelligent complex adaptive systems*. Chicago, IL: IGI.

Suggested Readings

Barrow, J. D., Davies, P. C. W., & Harper, C. L. (2004). *Science and ultimate reality: Quantum theory, cosmology, and complexity*. Cambridge, United Kingdom: Cambridge University Press.

Basole, R., & Rouse, W. (2008). Complexity of service value networks: Conceptualization and empirical investigation. *IBM Systems Journal*, *47*(1), 53–70.

Best, A., Greenhalgh, T., et al. (2012). Large-system transformation in health care: A realist review. *Milbank Quarterly*, *90*(3), 421–456.

Bryman, A. (2011). *The SAGE handbook of leadership*. Thousand Oaks, CA: Sage.

Busch, M., & Hostetter, C. (2009). Examining organizational learning for application and human service organizations. *Administration and Social Work*, *33*(3), 297–318.

Erickson, J. I. (2013). Reflections on leadership talent: A void or an opportunity? *Nursing Administration Quarterly*, *37*(1), 44–51.

Everett, L. Q., & Sitterding, M. C. (2013). Building a culture of innovation by maximizing the role of the RN. *Nursing Administration Quarterly*, *37*(3), 194–202.

Fine, M. (2009). Women leaders' discursive constructions of leadership. *Women's Studies in Communication*, *32*(2), 180–202.

Malik, P. (2009). *Connecting inner power with global change: The fractal ladder*. New Delhi, India: Response Books.

Malloch, K., & Porter-O'Grady, T. (2009). *The quantum leader: Applications for the new world of work*. Sudbury, MA: Jones and Bartlett.

Nelson, M. (2009). A cloud, the crowd, and public policy. *Issues in Science and Technology*, *25*(4), 71–76.

Orlando, R. 3rd, & Haytaian, M. (2012). Physician leadership: A health-care system's investment in the future of quality care. *Connecticut Medicine*, *76*(7), 417–420.

Pati, S., Reum, J., Conant, E., Tuton, L., Scott, P., & Abbuhl, S. (2013). Tradition meets innovation: Transforming academic medical culture at the University of Pennsylvania's Perelman School of Medicine. *Academic Medicine*, *88*(4), 461–464.

Porter-O'Grady, T., & Malloch, K. (2009). *Innovation leadership*. Sudbury, MA: Jones and Bartlett.

Ross, Y. (2012). Nurses can lead on implementing healthcare reforms. *Nursing Management*, *19*(7), 9.

Song, Z., & Lee, T. H. (2013). The era of delivery system reform begins. *Journal of the American Medical Association*, *309*(1), 35–36.

Starr, P. (2011). *Remedy and reaction: The peculiar American struggle over health care reform*. Hartford, CT: Yale University Press.

Zimmerman, B., Lindberg, C., & Plsek, P. (1998). *Edgeware*. Irving, TX: VHA.

Quiz Questions

Select the best answer for each of the following questions.

1. For the past 30 years we have been leaving which age?
   a. The Middle Ages
   b. The Age of Technology
   c. The Information Age
   d. The Industrial Age

2. What is the primary vehicle moving us out of the past age?
   a. Economics
   b. Technology
   c. Satellites
   d. Politics

3. As we get closer to fully living in the new age, the pace of change _____.
   a. Quickens
   b. Slows
   c. Becomes unstable
   d. Stays about the same

4. Adaptation means _____.
   a. Adjusting to the current reality
   b. Accommodating the emerging reality
   c. Bringing the past reality forward
   d. Living fully for today

5. What happens in the process of autopoiesis?
   a. Living systems seek to continually reinvent themselves.
   b. Living systems leave behind forms they do not like.
   c. Living systems maintain their stability throughout each change.
   d. Living systems end themselves because they have no other role.

6. What is accountability a matter of?
   a. Using good work processes
   b. Acting responsibly
   c. Performing efficiently
   d. Achieving desired work outcomes

7. Systems thinking identifies which of the following as an essential characteristic of all systems?
   a. Codependence
   b. Predictability
   c. Interdependence
   d. Incrementalism

8. Chaos is essential to all change. What is the primary purpose of chaos?
   a. To confuse people enough to make them change
   b. To challenge people to see the changes that are coming clearly
   c. To cut people's attachment to the past and engage them in the "noise" of change
   d. To get people to identify the characteristics of a particular change and to respond specifically to those characteristics

9. What is the primary role of the leader during a time of great change?
   a. To help people embrace change and engage with the change efforts of others
   b. To explain the kinds of changes people can expect
   c. To keep people from experiencing too much pain during the change process
   d. To push people into necessary changes and help them cope

10. Chaos theory and complexity science require leaders to alter their understanding of how change works. To develop a new understanding of change, leaders must first see their role in relationship to which of the following?
   a. The changes that are occurring in the workplace
   b. The whole system and its place in the change process
   c. The staff's issues and their responses to the demands of change
   d. The challenges that lie ahead in implementing new changes