



Unlocking the Power of Innovation



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Abstract

The goal of this article is to provide a practical guide to unlocking the power of innovation within the nursing community. First the three intersecting components of the innovation process (the innovation itself, creativity, and the environment) are explored. Next conceptual perspectives, drawn from the work of both von Hippel and Christensen, are reviewed. This is followed by a description of innovation methods with particular emphasis on IDEO's innovative processes and the Transforming Care at the Bedside initiative. Finally, specific examples of organizational structures to support innovation within healthcare institutions and across healthcare communities are highlighted. Throughout the article examples of healthcare innovation will be highlighted to illustrate the principles described in the article.

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The ability to support and sustain the innovative process is a significant challenge in today's high-pressure healthcare environment. Innovation can be viewed as a process for inventing something new or improving on that which already exists. Healthcare is relatively new to the science of innovation. Therefore healthcare leaders must look to other fields, such as the social sciences, engineering, and business including diverse industries, such as transportation and manufacturing, to develop an emerging science that can guide the innovative process in healthcare. The developing science of innovation tells us that there is a method to the innovative process that can be articulated, defined, measured, and framed within a variety of settings. The goal of this article is to provide a practical guide to unlocking the power of innovation within the nursing community. To meet this goal, the authors of this article will explore the components of the innovative process, review relevant conceptual perspectives, describe innovative methods, and highlight specific examples of organizational structures that support innovations within healthcare organizations.

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Components of the Innovative Process

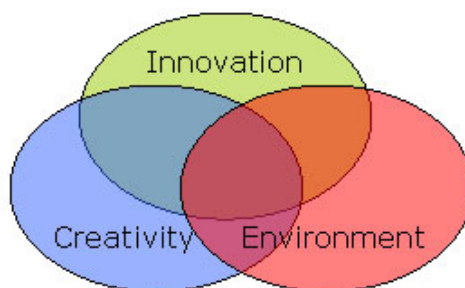
In our work together we authors have come to see innovation as having three highly interdependent components: individual or team creativity, the innovation itself, and the environment in which the innovation is developed, introduced, and sustained. Creative ideas are critical to the process of innovation, but the ideas alone are insufficient. Although the innovation itself, whether an invention, a new process, or a new language, is derived from the creative process of the individual or the team, the innovation cannot be sustained or developed without an environment that is supportive of and receptive to the innovative process.

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People are creative when they can solve problems, develop products that solve problems, or raise issues in a way that is initially novel but eventually accepted in one or more environments. Similarly, a work is creative if it stands out at first in terms of its novelty but ultimately comes to be accepted within a field ([Gardner, 1999](#)). The environment, including its social, cultural, and physical aspects, is critical for providing the creative opportunity in which the innovation can take hold. A corollary to this would be that unless an organization fosters innovation, no amount of individual creativity and inventiveness will produce sustainable innovations. The critical components of innovation, creativity, and environment and their intersection are illustrated in the [Figure](#). These three components will provide the organization for the discussion of innovation below.

Figure 1. Intersection of Innovation, Creativity, and Environment



Innovation: Conceptual Perspectives

This section will address the concept of innovation. It will also present conceptual perspectives related to the components of the innovative process, namely, the innovation, creativity, and the environment.

Innovation

Kanter and Senge have both suggested that innovation is a process that brings creativity to measurable outcomes, actions, products, or processes ([Kanter, Kao, & Wiersema, 1997](#); [Senge, 2001](#)). Christensen has added that “innovation is something different that has impact. The often unspoken goal is to solve a problem” (Christensen, 2007, Training Manual; no page number). In this section we will describe two perspectives on innovation, one by Eric von Hippel ([n.d.](#)) of the Sloan School of Management at the Massachusetts Institute of Technology (MIT) and one by Clayton Christensen of the Harvard Business School.

User-driven Innovation Model: von Hippel

User-driven innovation focuses on the ability of product users to adapt and customize products, including devices, processes, and outcomes. In his compelling book on “democratizing innovation,” von Hippel ([2005](#)) captures how successful end users have adapted or designed products and how they have shared that knowledge with others. Nurses frequently utilize this model when they adapt policies, procedures, devices, and environments to meet the immediate needs of patients (see [Table 1](#)).

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Users can develop innovations that are exactly what they want as long as they have the skills needed to customize a given product. User-driven innovators are often very willing to share their designs and ideas in what are known as Innovation Communities ([von Hippel, 2005](#)). Because innovation efforts by users tend to be widely distributed, user innovators need to find ways to combine and leverage their efforts. This can be achieved by engaging in various forms of cooperation, such as networks and communities. An example of such a community is the

Innovation Learning Network described later in this article. Online virtual communities are especially useful in offering structures and tools for their participants. These communities can increase the speed and effectiveness with which users and manufacturers are able to develop, test, and diffuse useful innovations.

Table 1: User-Driven Innovation: Smart Drug-Infusion Pumps

One user-driven innovation developed at Massachusetts General Hospital (MGH) is the "smart" drug infusion pump. Motivated by problems nationwide involving complex drug-dosing-calculation errors and inaccurately programmed drug-infusion pumps, a team came together to identify ways to prevent intravenous (IV) medication errors. Team members observed medication administration practices and identified both the points where errors were likely to occur and the specific causes of errors. They discovered two major issues: (a) difficulty getting detailed guidance regarding IV drug-delivery practices to providers at the time they needed it, and (b) lack of a foolproof way to prevent serious IV drug-dose-rate errors, and wrong-drug errors at the point of care.

In collaboration with industry, the MGH team created the "smart" infusion pump, an electronic pump device that contains an updated, hospital-specific, electronic library of hundreds of IV drugs and infusion protocols embedded in the pump's software. This pump prevents errors by comparing the dose rate the clinician enters with the hospital-specific, predefined rate limits for that drug. If the programmed dose is outside of the limits, the system alerts the clinician and, in the case of certain drugs, the system will prevent the administration of the medication. Smart infusion pump technology has been adopted worldwide by all major infusion pump manufacturers ([MGH, 2007](#)).

Disruptive Innovations: Christensen.

Disruptive innovation occurs by thinking differently and asking new and different questions in each situation.

Most innovation involves improvements on existing products. Although these improvements are often of a limited nature, some are very significant. In contrast, certain innovations go further and reach the point of being "disruptive" in that they have the potential to significantly change an entire field. Christensen and colleagues have transformed the vocabulary and principles of innovation with their ground-breaking work on these "disruptive innovations" ([Christensen, 2003](#)). Disruptive innovation occurs by thinking differently and asking new and different questions in each situation. This process of disruptive innovation can be fostered and supported by nurse leaders as they encourage new and different thinking at the bedside.

Traditionally industry has fostered innovation by listening to the most demanding consumers and attempting to respond to the current and future needs of these consumers. Often, however, over time the "product" develops more capabilities than the majority of consumers can either absorb or afford. The field then becomes ripe for a disruptive innovation. In disruptive innovation an important question to ask regarding a potentially new products is, "What is the job to be done?" ([Christensen, 2003](#)). When one considers the "job to be done" instead of the "product to be improved," it broadens the field thus allowing for the disruptive innovation. Initially, a disruptive innovation is not aimed at these established consumers, but rather at new consumers. Christensen ([2003](#)) has described a disruptive innovation as having the following characteristics:

- It is "good enough" along the traditional dimensions of the product and better along new dimensions.
- It targets non-consumers, i.e., those priced out of the market, or else those whom the product has "overshot" by including more features than the user needs, wants, or can afford.
- It is less costly.
- It is not of interest to the established leaders in the field who expect the return on the investment will not be great enough to warrant their support.

An example of a disruptive innovation was the introduction of the mobile phone. In the beginning, the quality was deemed "good enough" and the new and appealing dimension was mobility. Over the course of the evolution of the mobile phone, the product became established in the market has now undergone incremental improvements. As capability has increased, a large number of users are now finding the current iteration of the mobile phone to be more than they need. Perhaps this field is now ripe for a new, disruptive innovation.

The recent emergence of “retail clinics” constitutes a potentially disruptive innovation in healthcare. These clinics are based in convenient retail spaces, such as neighborhood drug stores or grocery stores, and offer a simple menu of walk-in services at affordable prices. These services might include diagnosis and treatment of minor illness, such as simple urinary tract infections, flu, upper respiratory infections and bronchitis, ear infections, insect bites, and/or immunizations. Typically, these clinics are staffed by nurse practitioners.

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Consumers who are looking for convenient and immediate access to the healthcare system for the treatment of these common health problems drive the demand for these clinics. The shortage of primary care physicians and the resultant long waits for appointments have added to an environment ripe for disruptive innovation. The retail clinic appeals to consumers as “good enough” along traditional quality dimensions for managing these common conditions and better relative to access and convenience. In addition, it appeals to current non-consumers, such as the uninsured, willing to pay an affordable fee for the opportunity to address their common healthcare needs. To date, established leaders in the healthcare field have not embraced retail clinics. Some express concern regarding the fragmentation of care and difficulty ensuring the quality of care by stand-alone entities. In turn, the retail clinics are seeking greater integration with existing providers and are publishing quality metrics.

By design, disruptive innovation challenges traditional thinking and can be expected to provoke controversy. Whatever the ultimate outcome of disruptive innovation, the disruption in and of itself is invaluable in stimulating dialogue, advancing innovative thinking, and transforming models of service delivery. The challenge of supporting, channeling, and sustaining the innovative process toward a successful outcome is paramount to a healthcare system burdened by high costs and overhead, ever-increasing demand, and declining outcomes as measured by public health metrics.

Creativity

Most of us are capable of being creative. Yet many of us don’t recognize our own creativity, whether it is in the artistry of one’s cooking or the way in which we plan and deliver care to elderly residents in a long-term care facility. When we watch little children play, we are usually fascinated by the creativity that emerges. However, as these children develop and experience the constraints of social norms and expectations, this creative spirit can seem to diminish. Some innovation methods, such as non-judgmental brainstorming, prototype building, and story-telling that are discussed below, are designed to restore this sense of playfulness and creativity ([Kelley, 2001](#)).

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Creative people frequently solve problems with a process called divergent thinking. This thought process, which is the most commonly accepted indicator of creative capacity, involves the ability to make mental connections between unrelated matters ([Mauzy & Harriman, 2003](#)). Divergent thinking is not as valued in healthcare as convergent thinking. Convergent thinkers, sometimes known as “linear thinkers,” like data and puzzles. They value getting the correct or conventional answers. Healthcare disciplines generally socialize their members to be excellent convergent thinkers. Examples of tasks that require convergent thinking include prescribing the correct medication, choosing an evidence-based intervention, and doing a physical exam.

Another characteristic of creativity is the mysteriousness of the process.

Divergent thinkers may have a difficult time working in healthcare. In order to be successful, they usually have to suppress their dominant way of thinking in order to fit in with the convergent thinkers. These folk learn early on to refrain from suggesting too much that is out of the ordinary. This type of thinking, unless it is valued by leaders, will only frustrate the team and slow any progress. However, if it is valued and developed over time, it could lead to more effective innovative solutions. This requires an organizational environment that encourages creative individuals. Innovative organizations strive to create cultures and environments supportive of creativity and divergent thinking.

Another characteristic of creativity is the mysteriousness of the process. The creative process is not a direct reflection of deliberate intention ([Gardner, 1993](#)). Rather much of its impetus and significance remain hidden from the individual creators and, quite possibly, from those in their community as well. This suggests that it is difficult for an organization to mandate or prescribe creativity. It cannot be measured by productivity measures and cost-

benefit analyses. Working to develop and sustain an environment where creative individuals can flourish is absolutely critical.

Environment

The context within which innovation and creativity thrives, or conversely withers, is the environment. In the quality-driven, yet risk-averse healthcare field, a field with unrelenting operational pressure, it is difficult to encourage creativity and innovation. There is no down-time, no break from the paramount focus on patient care. Yet, creative insights do emerge from this pressure and providers' concern for patients.

Innovation in real-world settings is context driven and must be sensitive to the actual experience of patients, families, clinicians, and other decision makers (see [Table 2](#)). Highly evolved systems with deeply entrenched organizational layers of decision making create complexity for the innovative process. Innovation, by its nature, often involves a process of trial-and-error in which mistakes are frequent and from which much is learned. Some organizations create protective environments, such as skunk-works or incubators, insulating innovation teams from operational pressures; others create permissive "learning environments" within mainstream structures. Buy-in and support from senior leadership is essential to the success of both approaches. Creating and participating in innovation networks, providing for dedicated work time to focus on innovative problem solving, and bringing the tools of innovation to the bedside clinician are all needed as part of a concerted effort to create an environment that supports innovation.

Table 2: Hospital Environment: Neonatal Intensive Care Unit

Hospital environments to care for newborns have been evolving since the field of neonatology was established as a specialty during the 20th century. Hospitals are altering their Neonatal Intensive Care Unit (NICU) facilities to respond to increasing family expectations, new clinical research findings, staffing shortages, budget issues, and new technology related to monitoring, clinical care, and communication. Neonatal intensive care units are shifting to individual private rooms that provide superior ambient noise and light protection, along with improved privacy for patients and their families. However, compared with the traditional, open layout of most NICUs, this new design poses challenges for staff communication and situational awareness.

A multi-disciplinary team of clinicians from Boston teaching hospitals has convened to identify the technology, space, and work-flow requirements for a 'NICU of the Future' that could optimize family-oriented patient care. Clinicians collaborated with faculty from engineering schools and industry regarding potential solutions to address the needs of the NICU including: (a) optimal lighting and sound that is developmentally appropriate for premature babies, (b) technologies for minimally invasive monitoring and blood testing, (c) continuous monitoring of organ structure and function, and (d) 'command and control' systems to improve intra-team coordination among NICU caregiver staff.

A small business that specializes in problems of safety, reliability, and efficiency in high-risk industries, such as aviation and military industries, is currently meeting with clinical nursing staff to study their workflow, conduct critical event analysis, and design a user-centered information system.

Innovation Methods

There is a range of innovation methods that are being applied in healthcare. Two will be highlighted in the following section, specifically IDEO ([Kelley, 2001](#)) and the Robert Wood Johnson/Institute for Healthcare Improvement: Transforming Care at the Bedside ([IHI, n.d.](#); [Robert Wood Johnson, 2009](#)).

IDEO

IDEO is a renowned, award-winning, design and development consultancy firm based in Palo Alto, California. Its innovation methods have been adopted worldwide and are examined in a seminal book by Tom Kelley, "The Art of Innovation" ([Kelley, 2001](#)). Kelly's "Deep Dive," an intense, immersive, rapid-cycle process of "brainstorm-and-build," has demonstrated considerable success within healthcare. The Deep Dive innovation method includes: observation, storytelling, synthesis, brainstorming, rapid prototyping, and field testing.

Observation of users in real-life environments is invaluable to problem identification. Ethnographic research has demonstrated the power of observation to aide in understanding needs in real, rather than hypothetical, environments. In this stage it is often helpful to reach out to other industries grappling with similar issues. An

example would be the healthcare industry observing customer service in the hotel industry. *Storytelling* packages the observations and research into vignettes that are easily shared. The stories combine the facts along with emotion and drama to help create a common understanding of the challenge being explored. *Synthesis* takes all of the observations and stories and defines areas of design opportunity. Generally a model describing the system being explored and areas that are ripe for innovation will emerge at this stage. *Brainstorming* unlocks unexpected opportunities, particularly in an uncritical, fast-paced environment where wild ideas and creative playfulness are encouraged. The technique of *rapid prototyping* uses simple supplies, such as those found in children's arts and crafts classrooms, to create a tangible representation of the innovation or innovative process for discussion and subsequent iteration. *Field testing* takes the most promising prototypes out into the field to get real-user feedback. It's an iterative process that increases the likelihood of success because of the deep user involvement in the design.

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Kaiser Permanente's (KP's) Innovation Consultancy has successfully applied the IDEO methods to create multiple innovations, including the Nurse Knowledge Exchange (NKE), a process that strengthens communication during nursing shift changes. The experience with developing the NKE is detailed in [Table 3](#). The identified problem that prompted this undertaking was nurse-to-nurse communication. The methods used to improve this communication included observation, storytelling, synthesis, brainstorming, prototyping, field testing and finally implementation. As with all innovation projects, diversity in opinion is crucial. For NKE, not only were there nurse participants, but also doctors, unit assistants, nurse assistants, environmental services, transporters, and managers.

Observation and storytelling, the first phases of the process were designed to answer the questions of "What are we seeing?" and "What are the users thinking and feeling?" These phases brought together quantitative and qualitative observations that enabled participants to better understand the system. The observations were then packaged into short stories that facilitated the sharing of insights. It became abundantly clear that the nursing shift-change process was broken. Surveying four units in four different hospitals revealed that there was little or no standardization for the shift-change process, neither within nor among units. Qualitative methods, such as having patients "draw their experience," showed that patients perceived the shift change as "scary" and "ghost-town-like." Synthesis posed the question, "What is this current system telling us?" It brought together the observations and stories to reveal the opportunity for innovation. The synthesis clearly pointed to the need for shift communication to focus on safety, standardization, and patient involvement.

The brainstorming and subsequent rapid prototyping phases focused on identifying the areas of opportunity revealed in the synthesis. Diverse, multidisciplinary teams were given a few simple rules to help promote their thinking and unleash their creativity. Rules, such as "Go for Quantity," "Encourage Wild Ideas," and "Defer Judgment," kept the ideas flowing and the devil's advocates at bay. The most promising ideas (picked by the group) were then pushed through a rapid prototyping session. This session used basic arts and crafts materials to help conceptualize and expand on the ideas. At the end of the session the teams ran simulations to show how the new ideas would look and feel. During the brainstorming session, 70 nurses and other caregivers came up with over 400 ideas on how to innovate shift change, all in less than an hour. Two hours later, they were simulating the new workflows along with the new tools. Futuristic ideas, such as holographic companions, which are 3D virtual avatars that the nurse interacts with instead of a traditional computer; and also cyborg-like nurse/PC fusions, which is a nurse that is half human and half computer having all the functions of a human nurse and a supercomputer, demonstrated the deep desire to have both real-time patient information and touch screen wall systems that connected the family into all patient care activities. Identification of these desires showed the need for a more family-centered approach. In all, participants demonstrated 40 extremely promising ideas.

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The most promising prototypes were reformulated into small, rapid tests for field testing with real users to allow for rapid learning and were tested more broadly. Between each test the ideas were refined based on user feedback. Finally, a pilot implementation involving the most promising ideas was designed to assess the value of these ideas for the system. Of the 40 shift change ideas demonstrated, ten were selected for field testing and refinement over the course of four weeks. Nurses and patients provided the expertise to mold and sculpt the ideas into approaches that would fit the needs of their system. Their final suite of ideas, one of the approaches chosen as a pilot project to improve shift-to-shift communication for the Nursing Knowledge Exchange, is illustrated in [Table 3](#).

Table 3: Kaiser Permanente's Nursing Knowledge Exchange

This pilot implementation tested a suite of four ideas that are now known as Nursing Knowledge Exchange (NKE). It is made up of four primary components:

- *Bedside Rounds:* Oncoming and outgoing nurses conduct shift change at the bedside with the patient.
- *Care Boards with Patient Teach-Back:* Oncoming nurse writes current patient shift goal on a whiteboard for the patient, and asks the patient to explain the goal and his/her understanding of the shift change information.
- *Previous Shift Prep:* Outgoing charge nurse/manager makes the nurse-patient assignments for the oncoming shift.
- *Data Template:* A standard tool presenting patient status data is completed by each nurse

Both nurses and patients have expressed high satisfaction with NKE. Oncoming nurses liked the ability to ask questions directly of the outgoing nurse, and patients appreciated being involved in the shift change. Quantitatively, nurses found they were able to see their first patient of the shift three times faster using NKE.

NKE has now been implemented in all 33 Kaiser Permanente hospitals.

Robert Wood Johnson/Institute for Healthcare Improvement: Transforming Care at the Bedside

Transforming Care at the Bedside (TCAB) ([Robert Wood Johnson, 2009](#)) is an innovation method consistent with the principle of user-driven innovation. Conceived by the Robert Wood Johnson Foundation (RWJF) and designed and implemented by the Institute for Healthcare Improvement (IHI) ([n.d.](#)), TCAB draws on several tools to focus creative ideas and test them quickly and effectively. The use of rapid cycle improvement “snorkels,” which address what is getting in the way of the nurses’ patient care, and “deep dives,” which address what the nurse might do to fix the problem, help bedside nurses identify problems and inefficiencies and design possible improvements. In using this method nurses identify the issue, suggest multiple possible solutions (the more the better), and determine which of the ideas to test. A simple pre- and post-metric is determined and implemented. For example, a test of change to conduct hourly rounds might include a pre- and post-measure of call light activity or the incidence of falls. An initial implementation process, such as observing the outcome for “one nurse, with one patient, for one shift,” is applied. At the end of the shift the process is quickly evaluated and adapted if necessary. The test is then expanded to include other nurses with other patients. Subsequently, the testing process is expanded and constantly adapted as needed until the determination is made to either adopt or abandon the solution being tested. This process is known as the “test of change;” it is designed to be quick, unit-based, and staff-driven.

Examples of Organizational Support Structures for Innovation

This section will provide real-life examples of three structures that have been used successfully to initiate innovation within organizations. These examples include an emerging structure, an established structure, and a network structure.

Emerging Organizational Support Structure: Center for Innovation and Care Delivery

The mission of the Center for Innovation in Care Delivery at Massachusetts General Hospital (MGH) is to focus on bringing teams together so as to identify opportunities, estimate the impact of change (including workforce demographics, new technologies, and regulatory change), and construct innovations. As one of four centers within the Institute for Patient Care, and as part of the Patient Care Services, this Center is charged with supporting innovation in all three components of the innovative process: innovation, creativity, and the environment. The Center focuses primarily on the micro level of innovation by supporting staff innovators and by sponsoring programs, such as Transforming Care at the Bedside (TCAB) ([Robert Wood Johnson, 2009](#)) and an RN residency program. These programs have been designed to build competencies in geriatrics and palliative care while supporting both older nurses and nurses two-to-five years post graduation. In addition, the Center provides educational opportunities for bedside clinicians to develop enhanced skills in problem solving and end-user innovation.

Currently the Center is fostering the development of an innovation community for Patient Care Services by providing those components defined by von Hippel as horizontal-innovations networks (2002) and lead-user methodologies (1986). The Innovation Learning Network ([n.d.](#)) described in Box 4 is an example of both. The Center utilizes tools, such as rapid prototyping, simulation, and the formation of interdisciplinary teams and pilot projects, to support innovation. By encouraging bedside clinicians to ask the questions framed by the work of Christensen, the Center encourages the broadest possible thinking and innovation. By framing the question as “What is the job to be done?” we ask fundamental questions and remind ourselves of the underlying objective that needs to be met, thus allowing for greater creativity, for re-exploration of the issues, and for opening the door for disruptive innovation.

Established Organizational Support Structure: The Center for the Integration of Medicine and Innovative Technology

The Center for the Integration of Medicine and Innovative Technology ([CIMIT, 2009](#)) was founded in 1998 to improve patient care by bringing scientists, engineers, and clinicians together to catalyze the development of innovative technology. It is a consortium of teaching hospitals, engineering schools, and science laboratories in the greater Boston area. CIMIT supports the translational research of multidisciplinary teams that are working with medical devices and clinical technology system applications and that have the goal of solving medical problems through innovative technology. It also provides seed funding through a peer-review process and project facilitation.

CIMIT ([2009](#)) exists as an infrastructure to enable inter-institutional collaboration. CIMIT attracts world-class clinicians, scientists, and engineers who work together with industry and governmental agencies to accelerate the clinical impact of innovative technologies. Research teams can draw on the expertise of professionals within CIMIT who are skilled in all phases of the development process—from innovation, through demonstration, commercialization, and adoption into patient care.

The Clinical Systems Innovation program is CIMIT’s ([2009](#)) on-the-ground initiative to improve and advance systems that support clinical care in real-world healthcare settings. Initiatives span the continuum of care from the emergency department and operating room to the intensive care units, general units, and ambulatory care areas all the way to home settings and hospice settings. Living “learning laboratories” are created in these environments to innovate in real-world settings.

Innovation Community: The Innovation Learning Network

The Innovation Learning Network brings together innovative healthcare organizations across the country to share the joys and pains of innovation.	The Innovation Learning Network (ILN) (n.d) brings together innovative healthcare organizations across the country to share the joys and pains of innovation. Its mission is to foster discussion on the methods of “design thinking,” ignite the transfer of ideas, and provide opportunities for inter-organizational collaboration. Started in 2006 by a grant through the Voluntary Hospitals of America Foundation to Kaiser Permanente (KP), it has since evolved into a membership and fee-based organization that is administered by KP.
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Since its inception, it has helped its member organizations build skills in design thinking, graphic facilitation, ethnography, prototyping, group consulting, smart networking, and open-space facilitation. Together organizations have applied these techniques to explore innovations, such as virtual simulation, personal health records, home-as-hub, and medication administration. Box 4 describes the ILN’s ([n.d.](#)) role in Medication Administration.

Table 4: Kaiser Permanente’s “KP MedRite” Medication administration errors in United States hospitals account for 7,000 deaths per year and hundreds of thousands cases of harm (Institute of Medicine, 2000). The organizations in the Innovation Learning Network (ILN) (n.d.) decided to tackle this issue. They set up several webinars in which each organization could present the best and worst of medication administration. This created an accelerated learning environment that enabled innovators to ramp up their knowledge. One group, Kaiser Permanente’s Innovation Consultancy (IC), concurrently used the IDEO process of innovation to kick start its innovation efforts. Working with nurse teams from West Los Angeles and Hayward, California, the observation phase of the project revealed that nurses were interrupted over and over again while trying to administer medications. There was an average of one interrupt for every medication pass. One nurse was interrupted 17 times during one medication pass! (Kaiser Permanente, n.d.). The IC used different creativity techniques to unleash the innovative skills of the nurses. They used analogous research to search for new ideas in unlikely places, such as an airline pilot school, a Lexus dealership, and a Safeway grocery store. The IC also used different provocation techniques during brainstorming to approach the challenge from unique angles, asking, for example, “How might we make medication administration a holistic and sacred experience?” and “How might we eliminate the need for gathering supplies?”
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The Kaiser Permanente's Innovation Consultancy and the involved nurses used the collective knowledge of the Innovation Learning Network, the process of innovation, and the power of creativity to develop an innovation called "KP MedRite." It is comprised of three components: a standard, patient-centered process; a tool that minimizes interrupts; and a space that creates a safety zone around medication rooms. Together these nurses created a safer, more reliable process that has increased nurse and patient satisfaction (Kaiser Permanente, 2007).

The Innovation Learning Network ([n.d.](#)) is characterized as being:

- member driven and organized: it relies on the passion of the people to move the work
- not-for-profit: organizations are designing for the greater the good
- non-competing: organization are able share freely and plentifully, the best and worst of their individual worlds
- friendship-oriented: organizations plan events that foster not only knowledge development and exchange, but also deep connections between organizations.

These characteristics have contributed to the significant success of the Innovative Learning Network, C. McCarthy, Director of the Innovative Learning Network, (personal communication, February, 2008).

Conclusion

Unlocking the power of innovation requires the engagement of clinicians at the bedside. Innovative leaders, given the conceptual framework, innovation methods, and organizational support structures and systems, can drive significant innovation and change within a healthcare system. Even though the ubiquitous challenges of a deeply entrenched healthcare system and associated practices can seem overwhelming, nurses nationwide are mastering the concepts and skills of innovation and making a tremendous difference in the practice of nursing, thus improving patient care.

Unlocking the power of innovation requires the engagement of clinicians at the bedside.

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Table 1, Smart Pumps: The multidisciplinary team at Massachusetts General Hospital includes Nathaniel Sims, MD; Ellen Kinnaley, RN; Gail Fishman, RN, assisted by Jeffery Cooper, PhD; and Harold DeMonico, MS.

Table 2, Hospital Environment in the NICU: The multidisciplinary team includes, from Children's Hospital-Boston Stella Korembanas, MD; Anne Hansen, MD; and Cheryl Toole, RN, MSN; from Beth Israel-Deaconess Hospital-Boston James Gray, MD; and from Massachusetts General Hospital, Margaret Settle, RN, MSN.

Table 3, The IDEO Methodology: Kaiser Permanente Nursing Knowledge Exchange: The team includes, from IDEO Matthew Beebe, Denice Ho, and Ilya Prokopoff; and from the Innovation Consultancy, Chris McCarthy, Adrienne C. Smith, Stephen S. Smith and Christi Zuber.

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