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Care Transitions

Integrating Transition Theory and Complexity Science Concepts

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Care transitions, defined as hospital discharge or movement from one health care setting to another, are currently a major concern of health care providers and policy makers. Extensive empirical research has been conducted on care transitions, but the theoretical foundations are rarely made explicit. We propose that integrating concepts on complex adaptive systems from complexity science with classic theory on transitions in nursing provides a powerful new lens through which to study care transitions and improve transition outcomes. We summarize concepts from both theoretical approaches, propose an expanded model of transitions, and apply the model to the transition from hospital to home. **Key words:** *care transitions*, *complexity science*, *discharge planning*, *older adults*, *theory development*, *transitions theory*

CARE TRANSITIONS, defined as hospital discharge or movement from one health care setting to another, are currently a major concern of health care providers (HCPs) and policy makers alike. This concern is based on astounding statistics: hospital readmissions among patients with Medicare cost the health care system $17.4 billion in 2004, with 19.6% of patients readmitted within 30 days of hospital discharge.[1] Adverse events have been found to occur in as many as 23% of discharged patients—72% of these were related to medication errors.[2] Prevalence of medication discrepancies at transition has been estimated to be between 14.1% and 41%.[3-5]

These care transitions are occurring in the context of increasingly fragmented care. An Institute of Medicine report[6] suggests that care should be based on continuous healing relationships. Such relationships are constantly at risk in environments where continuity, consistency, and coordination are not occurring. The Institute of Medicine report admonishes fragmentation within medical care; however, this issue exists within nursing as well. One study of team structure found that within a neonatal intensive care unit after 7 days of care, 53% of shifts were covered by new staff members.[7] In this typical approach to inpatient care, lack of consistency and continuity limit the potential for healing relationships and thus the potential for effective transitions.

Researchers have approached the problem of care transitions from a wide variety of perspectives but largely without regard for the context of care. For example, descriptive studies have documented the probability and timing of readmission.[8-10] These descriptive studies have driven the development of systems-based interventions that aim to reduce readmissions and associated costs.[11-20] Qualitative studies have addressed care providers' decision making [21-24] and identified broad areas of patient needs during care transitions.[25,26] Problems with care transitions also have been described from the perspective of community-based providers, including nursing homes and home health

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agencies. Issues include communication breakdowns related to plans of care, unclear expectations, uncertainty about illness trajectories, lack of continuity in medical follow-up, and incomplete or inaccurate understanding of medication regimens.[27-29]

Although this research has advanced knowledge and led to new transition care practices among HCPs, based on our literature review, the theoretical foundation for research on care transition is only rarely made explicit. Davies[30] echoed this finding in her description of the literature on caregivers' experiences with a relative's placement in a nursing home. Transition theory in nursing has the potential to provide a more solid theoretical foundation for research on care transitions. However, concepts pertaining to the context in which the transitions are occurring are needed as well. These are contained in complexity science.

We propose that integrating concepts of complex adaptive systems (CAS) from complexity science with classic theory on transitions in nursing provides a powerful new lens through which to study care transitions and ultimately improve transition outcomes in light of limited continuity and consistency in care. In this article, we briefly summarize transition theory in nursing, describe concepts from complexity science that we see as relevant to care transitions, show how concepts from both theoretical areas can be integrated into a new model of care transitions, and apply the model to discharge planning for hospitalized older adults. More exhaustive discussions of CAS in health care are available elsewhere.[31,32]

TRANSITION THEORY IN NURSING

Transition theory has long been a central concept in nursing.[33] Our literature review attests to the importance of the concept of transition in nursing scholarship. A MEDLINE search conducted in December 2011 revealed 2878 documents using the search terms "transition" and "nursing." These publications encompassed theory development, research, and practice. Meleis'[34] scholarship has been foundational for much of this work and provided a starting point for our inquiry.

The middle-range theory of transitions developed by Meleis et al[33] provides a broad view of transitions, framed by 3 components: (1) the nature of transitions; (2) conditions for transitions; and (3) patterns of response. Nursing therapeutics affect intervention and evaluation in all 3 components (Figure 1). The nature of transitions includes the types and patterns of transitions as well as properties of the experience. Types of transitions are developmental (eg, adolescence, parenthood, retirement), situational (eg, returning to school, change in professional role, widowhood, or nursing home placement), health/illness (eg, diagnosis of disease or condition, transitions between levels of the care continuum), and organizational (eg, changes in structure or dynamics).[35] Although the types of transitions are described distinctly, they are not mutually exclusive—multiple transitions can occur within the same individual or family simultaneously. The organizations that individuals and families are interacting with, whether HCP, community resource, or another, may be undergoing transitions as well. In fact, transitions are described as potentially single, multiple, sequential, simultaneous, related, and unrelated.[33,34] Properties relate to the transition and its relationship with those in its process: awareness, engagement, change and difference, transition time span, and critical points and events. Each property plays a role in defining the transition—for example, triggering events and the duration of the process.

Transition conditions are described as facilitators and inhibitors of healthy transition and relate to the individual and/or family involved as well as the community and the larger society. The community includes resources available to those undergoing transition, including HCPs. Transition conditions within each of these levels include meanings associated with the transition(s) and its resultant changes, cultural beliefs and attitudes, socioeconomic

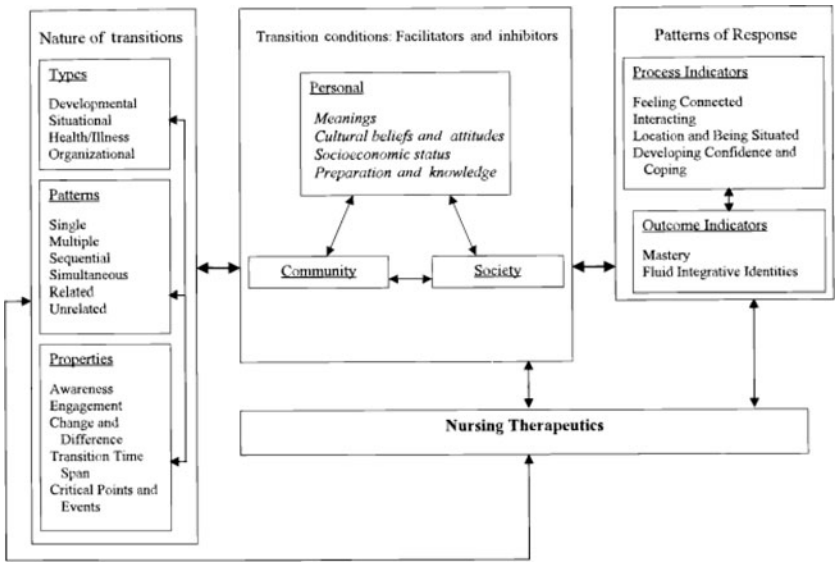

Figure 1. Mid-range transition theory.[33]

status, and preparation and knowledge that can either facilitate or inhibit healthy transition.

Patterns of response include both process and outcome indicators and denote healthy movement through the transition. Process indicators include feeling connected to family and friends (including informal caregivers). Location and being "situated" is another process indicator discussed in the literature in terms of immigrants, but it could also pertain to nursing home placement. Developing confidence and coping pertains to behavioral patterns, indicating a growing sense of mastery. Outcome indicators include mastery of the knowledge and skills needed to deal with the new situation and development of a new identity—one that is fluid and in concert with the changes associated with the transition.

Nursing therapeutics is viewed as affecting all 3 components (nature of transitions, conditions for transitions, and patterns of response), as well as receiving feedback about all 3 components, thus offering tremendous potential for the improvement of health. Potential interventions include continuous assessment, reminiscence, role supplementation, and creation of a healthy environment.[36]

Meleis' mid-range transition theory has potential to guide future research on care transitions as patients are discharged from acute care hospitals to their homes, rehabilitation settings, or long-term care facilities. Each component of the model is relevant to these types of transitions. However, growing realization of the complexity of care transitions suggests that now is a good time to revisit the 2000 model and consider whether additional concepts are needed.

COMPLEXITY SCIENCE

Complexity science is the study of complex systems. Examples of complex systems include insect colonies, the brain, economies, the Internet,[37] and the health care delivery system.[38] Complex systems have several common properties. First, they demonstrate complex collective behavior through networks of individual agents. Ants, neurons, consumers, Web surfers, HCPs, patients, and informal caregivers are all examples of agents within complex systems. Simple rules shape the behavior of these agents. Simple rules are assumptions, procedures, or other guides to

behavior. A classic example of a pattern based on simple rules is flocking birds. Their pattern of flight is governed by simple rules about the distance to be maintained between individual birds and the speed of their flight.[38] When a group of agents follow a simple rule collectively, they create patterns of behavior that appear to be centrally planned, but they are in fact not. This self-organization occurs quite independently based on the individual actions and interactions.[38] Moreover, agents process information as does the system at large. Producing and processing information, whether a chemical signal, verbal communication, or other mechanism, trigger the agent to act or react.[37]

Multiple types of systems exist, and each may be included within or interact with a complex system. One type of system is a simple system with a fixed point that attracts or repels the dynamics that limit the behaviors within the system.[39] Examples include free fall[40] and a swinging pendulum,[41] both under the influence of gravity. Simple systems do not adapt or change: the response is predetermined on the basis of the properties of the system.

Unlike simple systems, complex systems have multiple interacting agents. While agents can be human, they are not necessarily. Other examples of agents are nerve cells, computer programs, and nursing processes. Agents have the ability to exchange information, whether chemical, verbal, or zeros and ones, with their environment and other agents. On the basis of exchanged information, agents have the ability to act and react according to the information provided by other agents. An example of such a complex systems is the brain, whose agents are the cells acting and reacting within it.[40]

Because of this information exchange, complex systems must be understood in terms of the behavior of the parts (individual cells) as well as their interactions together in creating the whole. To understand a complex system such as the brain, the parts within that system must be understood and described in relation to the other parts[41] Continuing with the example of the brain, not only the function of a single cell can modify the function of the entire brain but also the biochemical environment can affect the individual cell.

Complexity scientists refer to health care systems as CAS. As such, health care systems consist of multiple agents in dynamic relationship with one another. They also have the ability to undergo self-organization.[38] *Self-organization* refers to new behaviors or new patterns that emerge from individual agents' reactions to changes within the CAS. The overall change and its impact are emergent, not planned or directed.[42] Thus, self-organization, although it appears to be planned within the system, is actually the reaction of an agent or a group of agents to a change made by another. With the new information, agents, acting on established rules, change their behavior, leading to a new structure.

Another important concept in complexity science is emergence. As agents interact within relationships, and self-organize in response to changes communicated to them, new behaviors, structures, and even new systems emerge. Emergence is not predictable from any single point of view (or context) for 2 reasons. First, predicting other agent's behavior is typically not possible in the absence of a complete context. No agent can have the complete context of another. Second, agent interactions are nonlinear, that is, a small change can produce a large result (or vice versa).[38] To place this in the context of health care transitions, one cannot predict the results of discharge planning instructions to a patient, because all of the situations that the patient and informal caregivers will experience cannot be anticipated. Changes in physical symptoms, availability (or lack thereof) of needed supplies, or even physical or social boundaries within the home environment may lead to the emergence of new patterns of behavior that were not predictable at the beginning of the transition.

Relationships among agents, rather than individual agents themselves, define complex systems. Moreover, it is not the number of

connections that defines a complex system but rather the richness of those connections. While the reach of any one connection may be small, the influence of many such connections may be great.[38] A mid-range theory of relationships has been developed within complexity science that defines system characteristics, namely, information flow, connection, and cognitive diversity. *Information flow* refers to the availability of information, in multiple formats and media, within the system. *Connections* refer to both the strength and the variability of connections available to the agents. In organizations, for example, the combinations of formal connections (such as staff meetings) and informal connections (such as friendships or unplanned conversations in the hallway) provide for better information flow than only formal or informal relationships. *Cognitive diversity* refers to variety within the system. Cognitive diversity supports more powerful relationships. Where multiple perspectives exist, whether professional, cultural, or other, there is broader information flow, enabling wider options for self-organization.[43]

Sensemaking is another important concept in complexity theory. Relationships and the information associated with them support sensemaking. While the term "sensemaking" may be new, the practice of sensemaking is one that is used routinely. Karl E. Weick, who is credited with developing the theory of sensemaking within organizations,[44] defines *sensemaking* as involving "the ongoing retrospective development of plausible images that rationalize what people are doing."[45(p409)] That is, when something out of the ordinary occurs, we use what we know to develop an explanation of what has happened, why it has happened, and what we should do next.[46] There are tools and frameworks that aid in the process, but these tools also have the potential to limit the data that are included within analysis, effectively determining possible comparisons and associations.

The concept of sensemaking is related to patterns in experience that give those experiences a meaning. The patterns that agents construct are limited to those within their knowledge, experience, and imagination. So, if an agent is not aware of the potential for a pattern, then he or she is not able to include pattern recognition as a part of sensemaking. Sensemaking, then, can be greatly improved by the inclusion of diverse thoughts and ideas of multiple agents who recognize patterns from their diverse perspectives.[46]

Loss of sense or the ability to relate to one's situation has been connected to organizational breakdowns. The Mann-Gulch disaster, as described by Weick,[47] is one example. In 1949, a newly formed group of smokejumpers were challenged with a highly aggressive fire that did not lend itself to the norms of firefighting of the time. Therefore, existing rules for fighting the fire failed to either gain control of the blaze or protect the firefighters. Surviving the fire required developing a new understanding of the fire's behavior and the situation that it created to develop new responses. The firefighters were without experience or knowledge to directly guide their action. Those who survived the fire acted counter to the rules of the day: they dropped their tools and ran or they set fires ahead of the raging blaze to provide a safe haven during its passing. Thirteen men died in the fire, 3 survived.[47]

Comparable examples can be found in health care. Consider evidence showing that substantial differences in diagnosis as well as strategies for avoiding hospitalization exist among patients, caregivers, and HCPs: in a study by Annema et al,[48] each of the 4 participants arrived at the hospital admission with different experiences and knowledge of heart failure and its treatment. When 3 or 4 participants were involved in the same admission, they agreed about the diagnosis only 19% of the time. In sensemaking terms: they arrived at the same plausible explanation for the readmission less than 1 in 5 times. This has tremendous implications for treatment both during and following the hospitalization, because we act (treat) on the basis of our understanding of the situation.

Sensemaking also relates to "meaning." Sensemaking is our attempt to find patterns in the flow of events and assign meaning to them. In transitions research, there are studies with themes related to patients attempting to understand the providers' meanings associated with changes communicated to the patients.[49] Through understanding the providers' meaning, the patient is able to use this information to inform their own sensemaking.

INTEGRATION

Integration of selected concepts from complexity science with transition theory in nursing has tremendous potential for nursing science. Concepts in these 2 theoretical approaches are congruent in numerous ways, suggesting the potential for successful integration. Unique concepts also exist. Bringing the unique concepts in complexity science into transitions theory adds a powerful new lens with which to view the phenomenon of transitions, especially when the transition occurs within the context of a complex system, such the health care system. For example, complexity science adds acknowledgement that HCPs bring context to the transition, not just patients and caregivers. Therefore, we must consider their meanings, attitudes, and beliefs within transitions. Complexity science also makes explicit the importance of openness across boundaries and the potential this brings for healing relationships among agents. These ideas provide for a richer view of transitions but not an incongruent one.

Areas of conceptual congruence between transition theory and complexity science include a focus on process, conceptualization of the person in the context of community and society, the importance of meaning, and an emphasis on patterns. Unique concepts in complexity science that are relevant for the study of transitions but have not been explicitly incorporated into transition theory include the following:

- Multiple individual agents (perspectives)
- Dynamic relationships between agents
- Simple rules
- Sensemaking in relation to environment
- Self-organization
- Emergence
- Culture and environment of all agents
- The multidisciplinary nature of health care

These concepts are depicted in the model shown in Figure 2. This model includes all the components of classic transitions theory in nursing while incorporating new concepts from complexity science. We have selected concepts from complexity science that are especially relevant to CAS on the basis of our experience with transitions and knowledge of the literature.

Underlying and encompassing every element in the model is the highly dynamic nature of change. As Schumacher and Meleis[35] noted, transition is a process, not a change that occurs in a moment in time. Complexity science further illuminates the nature of the transition process and changes that occur while a transition is unfolding. For example, the number and types of HCPs involved (eg, primary care and specialist physicians, nurses in multiple roles, and therapists), and the diversity of roles they play set the stage for rapid changes. Patients and informal caregivers play their own roles and initiate their own changes. In addition, as relationships develop, interaction feeds the potential for emergence of new process or patterns of interaction as well as new outcomes. It is also likely that through dialogue and experience, all agents within the transition engage in sensemaking, leading to new meanings that affect the transition and the agents involved.

Community and society affect every agent involved in the transition and not just a focal person undergoing transition, such as the patient. This does not mean that all agents are affected similarly. The diverse places agents hold in community and society may have quite different implications. For example, within a single community, racial and political norms will affect those of different ages, education levels, and socioeconomic status (among others) differently. Even HCPs will experience the community differently depending on their professional role.

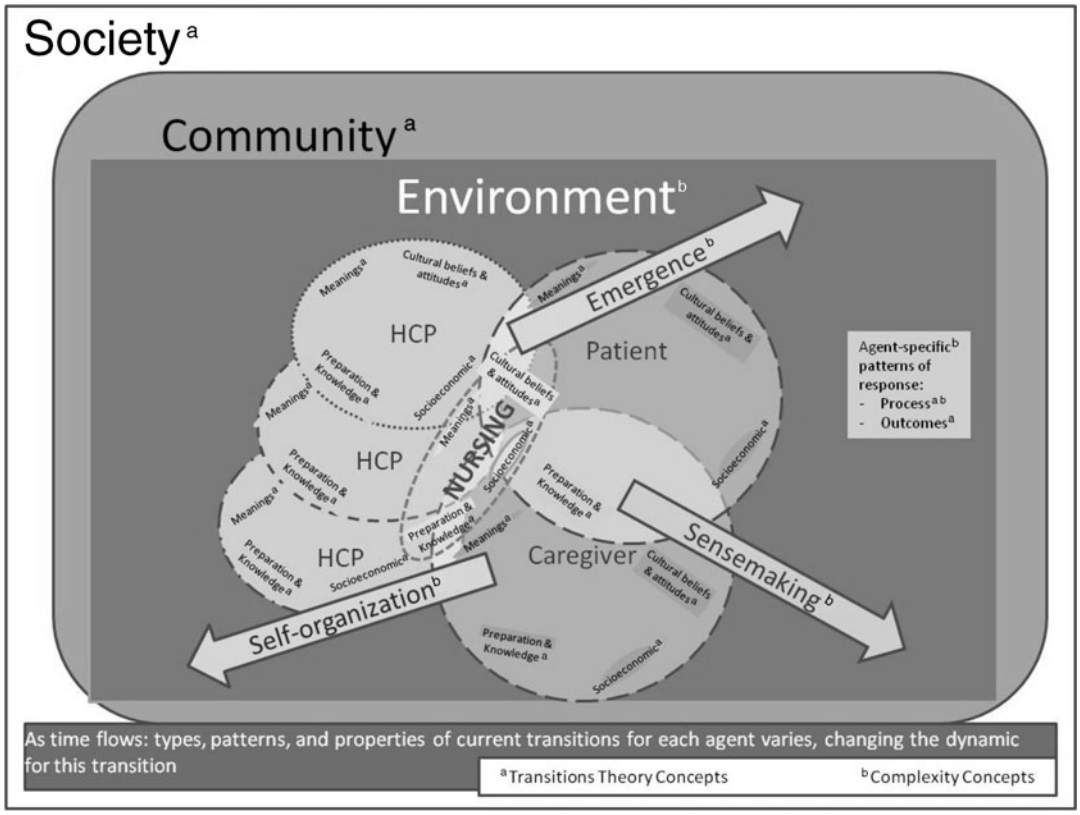

Figure 2. Transitions theory with complexity science concepts integrated. HCP indicates health care provider.

Multiple HCPs are explicitly included within the model. Nursing has a role that crosses the individual HCP boundaries. The outer boundaries of each agent—HCP, nurse, patient, and informal caregiver—are all open to some extent. Some agents have more open borders, allowing for greater connection and flow of information. Others have tighter boundaries, making interaction that supports information flow more difficult. Similarly, agents have other relationships, which cannot all be depicted within the model but that may influence the transition. For example, imagine the difference in richness of information provided from a nurse who has cared for a patient for only an hour compared with that of a nurse who has provided care consistently throughout a hospitalization. Similarly, imagine the difference in information flow when only paper documentation is exchanged as compared with a dialogue between the nurses who are sending and the receiving it.

Each agent arrives to the transition with his or her own ongoing types, patterns, and properties of transitions, as depicted in the model of Meleis and colleagues. Each agent has his or her own meanings, cultural beliefs and attitudes, socioeconomic status, preparation, and knowledge. Their individual situations affect the relationships that form and, through those relationships, will affect the emergence of process and outcomes for each agent.

IMPLICATIONS

Our integrated model holds substantial importance for nursing practice and research.

Most important is the notion that transitions occur within the context of multiple relationships, including multifaceted and dynamic relationships among multiple HCPs, the patient, and informal caregiver. Each patient, informal caregiver, and HCP is involved as an agent. Each influences and affects the other in ways both planned and unplanned. Implications for practice include the need for more open boundaries to allow greater information flow between agents to ensure that the context of the patients' and caregivers' situations is adequately addressed. It also requires that nurses think not only of tasks, interventions, and best practice protocols but also of developing relationships with patients. Through "continuous healing relationships," nurses have the opportunity to be involved in the emergence of improved health processes and outcomes with the patient and caregivers.

Sensemaking also requires reciprocal interactions with patients and informal caregivers to not only provide designated information but also gain knowledge from them. Demonstrated within the model via dotted boundaries between HCPs, patients, and caregivers, nurses' openness to interactive dialogue with multiple agents supports the patient and caregivers (as well as the nurse's own) ability to understand new clinical realities and the meanings associated with them. Through sensemaking, nurses, other HCPs, patients, and caregivers may grow to understand situations differently, a new shared understanding with the potential to affect the simple rules guiding their behavior.

Finally, it is through interactions in relationship among HCPs, patients, and informal caregivers that processes and outcomes emerge. This view is in stark contrast to the prevailing view of intervention as the input and the outcome as output. While our interventions are critically important, they are provided in the context of the patient's life, including, but certainly not limited to, their interaction with the health care system.

For researchers, our integrated model emphasizes the importance of acknowledging the perspective taken in a study, recognizing that a given study is unlikely to be able to capture the whole of every possible perspective. Specifying the perspective that *is* captured and acknowledging the perspectives that are *not* may encourage researchers to anticipate implications of translation of findings into practice. For example, in care transitions research, intervention studies to date provide significant evidence of the value of the interventions to the health care system in reducing readmissions. Little evidence is found, however, to describe the effect that interventions have on patients' symptoms or quality of life. We cannot assume that because patients are no longer being readmitted to the hospital, they are improved clinically. Future research should explore outcomes of care transitions from the perspectives of patients and informal caregivers.

APPLICATION

Use and conscious awareness of the new concepts in our transition model can shape transitions so that they unfold in positive ways. We will apply these concepts to the care transition from hospital to home to illustrate differences in the process when complexity concepts are used and when they are not used.

Inpatient care management for patients often begins within 24 hours of admission. During the care management process, which ideally unfolds over the course of the admission, inpatient HCPs work together to create a discharge plan that is both safe and acceptable to the patient and informal caregiver(s). Within the plan, care transition to outpatient HCPs will be accomplished, as will education of the patient and caregivers. With the coordinated plan, knowledge, and preparation, the patient and the caregiver will be adequately prepared and supported during the transition to home.

Figure 2, as noted earlier, is a basic depiction of our integrated model. Society and community frame the transition and influence the environment that each of the agents inhabits. Each agent, HCP, patient, and caregiver, inhabits an environment. For the patient, this environment may be limited to a single room within their home. For some agents, the

environment may be much broader. As care managers plan for the patient's discharge, they attempt to learn about the patient's environment to ensure adequate planning.

Health care providers are involved in the plan of care prior to discharge, as they are needed to provide for a safe and acceptable care transition. For the complex patient, there may be multiple HCPs involved: a primary care physician, multiple specialist physicians, physical therapist, home health aides, and 1 or more registered nurses, for example. Each brings a unique practice, perspective, and agent-specific conditions, including meanings, cultural beliefs and attitudes, socioeconomic status, preparation and knowledge, and simple rules, to the care of the patient. Each may be involved in multiple professional or personal transitions, which may directly or indirectly affect their approach to the patient's care transition to home. Similarly, the informal caregiver(s) will have their own preparation for their role, whether new or old, as caregiver to the patient as well as their agent-specific conditions. Finally, the patient, the center of the care transition, approaches this transition with all of his or her agent-specific conditions and multiple other transitions.

As HCPs attempt to fulfill their roles and as patients and caregivers implement the plan agreed to upon discharge, relationships form, providing the opportunity for information flow, cognitive diversity, and connection—critical components of the relationship. Open boundaries between the agents provide the potential for interaction that enables self-organization, sensemaking, and emergence of agent-specific processes and outcomes. That is, as the HCP, patient, and caregiver work together, they will make changes on the basis of the information they exchange. These changes can be as simple as self-organizing by modifying the schedule of therapy to accommodate for decreased energy levels or as significant as adding a new member to the team. This self-organization does not require management involvement but does require information exchange between the HCPs and the patient/caregiver to identify its importance.

Sensemaking occurs within the individuals or within small groups as a way of attempting to understand the new situation. This is true whether the new situation is as substantial as a terminal illness or the birth of a baby with special needs or as fleeting as an acute injury with full recovery anticipated. Patients and informal caregivers must come to understand the change in themselves, others involved, and its implication for them. Using a rather technical example, if a patient is given discharge orders that include only walking up and down the stairs once per day, but the restroom is upstairs and the kitchen is downstairs, how does this affect his or her recovery and his or her sense of self? The patient will create a sensible rule on the basis of his or her experience and knowledge of options, but in the context of discussion with HCPs, a more fulfilling option can likely be developed.

Finally, emergence, including that of outcomes, will occur throughout this transition. This emergence will occur with or without conscious awareness. It will occur for each agent involved, but through the relationship, higher quality outcomes can be expected. In care transitions, health systems measure readmission as one of the primary outcomes. Lower readmissions are considered to be better, both as a financial measure and as a measure of clinical success within the primary admission. For individual HCP, measured outcomes of the interaction may be minutes per visit, patient satisfaction, or any number of other measures. For the patient, however, the most important outcomes are related to clinical recovery—for stroke, recovery of function, for example. Key outcomes for interacting agents are often unrelated. Achieving outcomes for 1 agent or group of agents is not indicative of achieving outcomes for all.

CONTRASTING EXAMPLES: HIGH-RISK AND HIGH-QUALITY CARE TRANSITIONS

Figure 3 depicts a high-risk care transition. Boundaries are closed. Exchange of information is largely one-way: from the HCP to the patient and caregiver. HCP questions are

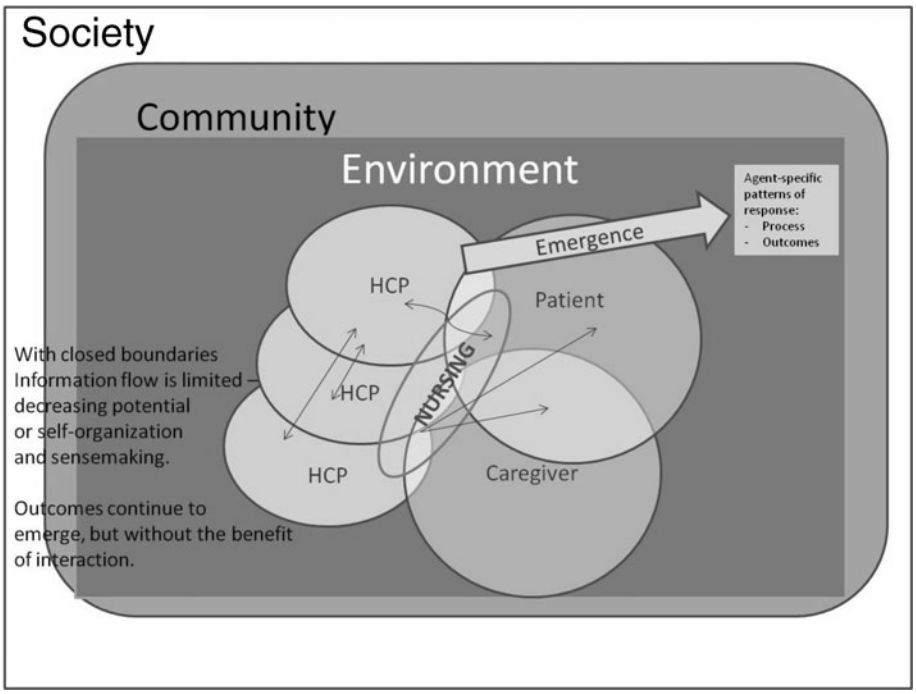

Figure 3. An example of a closed system. HCP indicates health care provider.

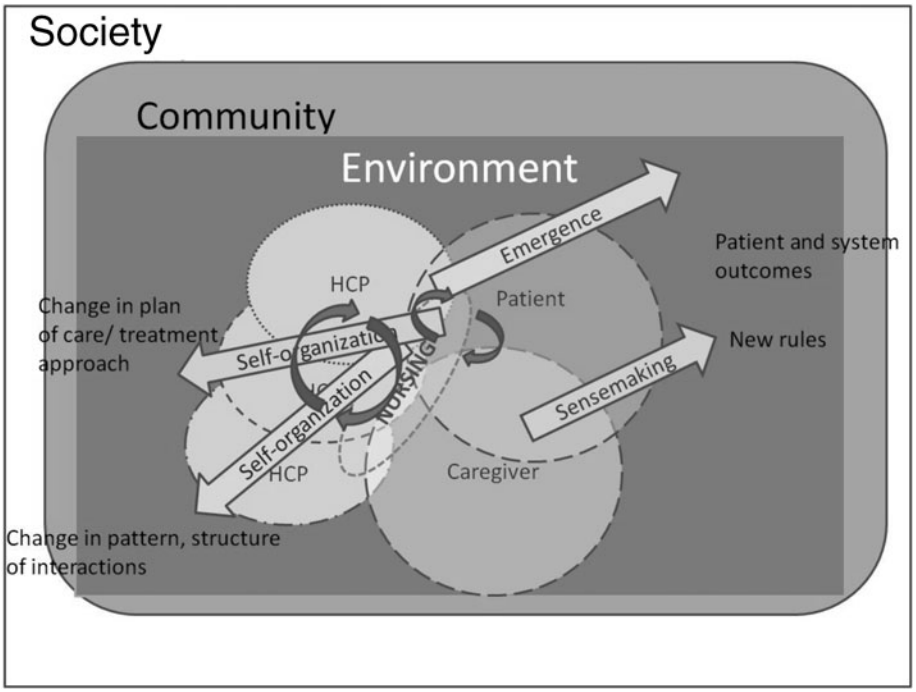

Figure 4. An example of an open system. HCP indicates health care provider.

answered, but there is not an open dialogue with interactive discussion. While this is an extreme example, one that nursing would tend to reject, this type of interaction (or lack thereof) between patients and HCPs is known to occur. In this situation, the health care system, HCP, patient, and caregiver all have undesirable emergent outcomes: high readmission rates, high costs, low patient satisfaction, distressing symptom patterns, and informal caregiver burden.

Figure 4 depicts a high-quality care transition. Strong relationships and reciprocal interactions exist. Information moves across open boundaries among multiple agents as discussion moves forward. This dynamic interaction allows for sensemaking at the smallest level: continuing with the stairs example described earlier, the HCPs will make available portable equipment either to enable the patient to be in the main areas of the house or to evaluate the potential for a stair lift. Likewise, incorporating the patient's symptoms as they change—either with disease progression or improvement—into the simple rules supplied at discharge better prepares the patient and caregiver to understand the clinical situation when symptoms change. This understanding is critical to "appropriate" use of health care services. In this high-quality example, open dialogue enables optimal adaptation to patient changes in condition and situation through ongoing updates to care structure or process (self-organization) and improvement of understanding across agents (sensemaking). These adaptations support emergence of higher quality outcomes for all agents—namely, lower readmission rates, lower costs, higher patient and informal caregiver satisfaction, better symptom management, and improved quality of life.

SUMMARY

Transition theory has long provided a framework for viewing transitions within nursing and health care. The addition of selected concepts from complexity science expands our understanding of the importance of the context in which transitions occur and the processes that emerge within that context. Integration of transition theory and complexity science encourages the recognition that transitions affect multiple agents: patients, informal caregivers, HCPs, and the health care system. Through the transition process, agents act and interact within relationship with each other, causing emergence of new behaviors and outcomes. Just as important, through supportive dialogue and discussion, sensemaking is enabled for everyone involved in the transition, effectively reenvisioning multiple understandings of the situation and changing outcomes for the better.

REFERENCES

1. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. *N Engl J Med*. 2009;360:1418-1428.
2. Forster AJ, Clark HD, Menard A, et al. Adverse events among medical patients after discharge from hospital. *Can Med Assoc J*. 2004;170:345-349.
3. Vira T, Colquhoun M, Etchells E. Reconcilable differences: correcting medication errors at hospital admission and discharge. *Qual Saf Health Care*. 2006;15:122-126.
4. Climente-Martí M, García-Mañón ER, Artero-Mora A, Jiménez-Torres NV. Potential risk of medication discrepancies and reconciliation errors at admission and discharge from an inpatient medical service. *Ann Pharmacother*. 2010;44:1747-1754.
5. Coleman EA, Smith JD, Raha D, Min S. Posthospital medication discrepancies: prevalence and contributing factors. *Arch Intern Med*. 2005;165:1842-1847.
6. Committee on Quality of Health Care in America/Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academies Press; 2001.
7. Gray JE, Davis DA, Pursley DM, Smallcomb JE, Geva A, Chawla NV. Network analysis of team structure in the neonatal intensive care unit. *Pediatrics*. 2010;125:e1460-e1467.
8. Goldfield NI, McCullough EC, Hughes JS, et al. Identifying potentially preventable readmissions. *Health Care Financ Rev*. 2008;30:75-91.

9. Kind AJH, Smith MA, Frytak JR, Finch MD. Bouncing back: patterns and predictors of complicated transitions 30 days after hospitalization for acute ischemic stroke. *J Am Geriatr Soc*. 2007;55:365-373.
10. Ma E, Coleman EA, Fish R, Lin M, Kramer AM. Quantifying posthospital care transitions in older patients. *J Am Med Dir Assoc*. 2004;5:71-74.
11. Chugh A, Williams MV, Grigsby J, Coleman EA. Better transitions: improving comprehension of discharge instructions. *Front Health Serv Manage*. 2009;25:11-32.
12. Greenwald JL, Jack BW. Preventing the preventable: reducing rehospitalizations through coordinated, patient-centered discharge processes. *Prof Case Manag*. 2009;14:135-140.
13. Parry C, Min S, Chugh A, Chalmers S, Coleman EA. Further application of the care transitions intervention: results of a randomized controlled trial conducted in a fee-for-service setting. *Home Health Care Serv Q*. 2009;28:84-99.
14. Coleman EA, Parry C, Chalmers S, Min S. The care transitions intervention: results of a randomized controlled trial. *Arch Intern Med*. 2006;166:1822-1828.
15. Coleman EA, Parry C, Chalmers SA, Chugh A, Mahoney E. The central role of performance measurement in improving the quality of transitional care. *Home Health Care Serv Q*. 2007;26:93-104.
16. Naylor MD, Kurtzman ET, Pauly MV. Transitions of elders between long-term care and hospitals. *Policy Polit Nurs Pract*. 2009;10:187-194.
17. Bowles KH, Ratcliffe SJ, Holmes JH, Liberatore M, Nydick R, Naylor MD. Post-acute referral decisions made by multidisciplinary experts compared to hospital clinicians and the patients' 12-week outcomes. *Med Care*. 2008;46:158-166.
18. Naylor MD, Brooten DA, Campbell RL, Maislin G, McCauley KM, Schwartz JS. Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. *J Am Geriatr Soc*. 2004;52:675-684.
19. Naylor MD, Hirschman KB, Bowles KH, Bixby MB, Konick-McMahan J, Stephens C. Care coordination for cognitively impaired older adults and their caregivers. *Home Health Care Serv Q*. 2007;26:57-78.
20. Preen DB, Bailey BES, Wright A, et al. Effects of a multidisciplinary, post-discharge continuance of care intervention on quality of life, discharge satisfaction, and hospital length of stay: a randomized controlled trial. *Int J Qual Health Care*. 2005;17:43-51.
21. Foust JB. Discharge planning as part of daily nursing practice. *Appl Nurs Res*. 2007;20:72-77.
22. Rhudy LM, Holland DE, Bowles KH. Illuminating hospital discharge planning: staff nurse decision making. *Appl Nurs Res*. 2010;23:198-206.
23. Clemens EL, Hayes HE. Assessing and balancing elder risk, safety and autonomy: decision-making practices of health care professionals. *Home Health Care Serv Q*. 1997;16:3-20.
24. Naylor MD, Feldman PH, Keating S, et al. Translating research into practice: transitional care for older adults. *J Eval Clin Pract*. 2009;15:1164-1170.
25. Graham CL, Ivey SL, Neuhauser L. From hospital to home: assessing the transitional care needs of vulnerable seniors. *Gerontologist*. 2009;49:23-33.
26. Naylor MD, Stephens C, Bowles KH, Bixby MB. Cognitively impaired older adults: from hospital to home. *Am J Nurs*. 2005;105:52-61.
27. Foust JB, Naylor MD, Boling PA, Cappuzzo KA. Opportunities for improving post-hospital home medication management among older adults. *Home Health Care Serv Q*. 2005;24:101-122.
28. Moore C, Wisnivesky J, Williams S, McGinn T. Medical errors related to discontinuity of care from an inpatient to an outpatient setting. *J Gen Intern Med*. 2003;18:646-651.
29. Smith JD, Coleman EA, Min S. A new tool for identifying discrepancies in postacute medications for community-dwelling older adults. *Am J Geriatr Pharmacother*. 2004;2:141-147.
30. Davies S. Meleis's theory of nursing transitions and relatives' experiences of nursing home entry. *J Adv Nurs*. 2005;52:658-671.
31. Zimmerman B, Lindberg C, Plsek P. *Edgeware: Lessons From Complexity Science for Health Care Leaders*. Washington, DC: Plexus Institute; 2008.
32. Lindberg C, Lindberg C. Nurses take note: a primer on complexity science. In: Lindberg C, Nash S, Lindberg C, eds. *On the Edge: Nursing in the Age of Complexity*. Bordentown, NJ: Plexus Press; 2008:23–48.
33. Meleis AI, Sawyer LM, Im EO, Hilfinger Messias DK, Schumacher K. Experiencing transitions: an emerging middle-range theory. *ANS Adv Nurs Sci*. 2000;23:12-28.
34. Meleis AI. Transitions as a nursing theory. In: Meleis AI, ed. *Transitions Theory: Middle-Range and Situation-Specific Theories in Nursing Research and Practice*. New York, NY: Springer; 2010:11-83.
35. Schumacher KL, Meleis AI. Transitions: a central concept in nursing. *Image J Nurs Sch*. 1994;26:119-127.
36. Schumacher KL, Jones PS, Meleis AI. Helping elderly persons in transition: a framework for research and practice. In: Meleis AI, ed. *Transitions Theory: Middle-Range and Situation-Specific Theories in Nursing Research and Practice*. New York, NY: Springer; 2010: 129-144.
37. Mitchell M. *Complexity: A Guided Tour*. New York, NY: Oxford University Press; 2009.
38. McDaniel RR Jr, Driebe DJ. Complexity science and health care management. *Adv Health Care Manag*. 2001;2:11-36.
39. Bar-Yam Y. Introduction and preliminaries. In: Bar-Yam Y, ed. *Dynamics of Complex Systems*. Reading, MA: Addison-Wesley; 1997: 16-294.
40. Ray MA. Complexity and nursing science. *Nurs Sci Q*. 1998;11:91-93.

41. Bar-Yam Y. Overview: Dynamics of complex systems—examples, questions, methods, and concepts. In: Bar-Yam Y, ed. *Dynamics of Complex Systems*. Reading, MA: Addison-Wesley; 1997: 1-15.
42. Paley J. Complex adaptive systems and nursing. *Nurs Inq*. 2007;14:233-242.
43. Anderson RA, Ammarell N, Bailey DE, et al. The power of relationship for high-quality long-term care. *J Nurs Care Qual*. 2005;20:103-106.
44. Davidson JE. Facilitated sensemaking: a strategy and new middle-range theory to support families of intensive care unit patients. *Crit Care Nurse*. 2010;30:28-39.
45. Weick KE, Sutcliffe KM, Obstfeld D. Organizing and the process of sensemaking. *Organ Sci*. 2005;16:409-421.
46. Battles JB, Dixon NM, Borotkanics RJ, Rabin-Fastmen B, Kaplan HS. Sensemaking of patient safety risks and hazards. *Health Serv Res*. 2006;41:1555-1575.
47. Weick KE. The collapse of sensemaking in organizations: the Mann-Gulch disaster. *Adm Sci Q*. 1993;38:628-652.
48. Annema C, Luttik M, Jaarsma T. Reasons for readmission in heart failure: perspectives of patients, caregivers, cardiologists, and heart failure nurses. *Heart Lung*. 2009;38:427-434.
49. Burkey Y, Black M, Reeve H. Patients' views on their discharge from follow up in outpatient clinics: qualitative study. *BMJ*. 1997;315:1138-1141.