INTRODUCTION TO SYSTEMS THINKING

Health care occurs between a health professional and a patient; however, it also occurs between small clinical care teams and the patient. A patient may encounter successive small teams within a larger team or system during care. To provide truly patient-centered care, you must be able to see health care, not as a lone professional, but as part of the larger health system.

Thinking about health care delivery using a systems lens is termed systems thinking. Systems thinking is a philosophy, a mindset and a set of skills and understanding.

THE HEALTH SYSTEM AS A COMPLEX ADAPTIVE SYSTEM

A health system is a set of connected or interdependent parts or agents, including health professionals and patients, bound by a common purpose. Health care is complex because of the great number of interconnections within and among systems. Health systems are adaptive because they are composed of individuals – patients, families and health professionals – who learn and change as a result of their experiences. Their actions in delivering and receiving health care are not always predictable and tend to change both their local and larger environments. Human behavior and the variability of that behavior is part of what makes the health system complex and adaptive. Additionally, there is great variety in system design which has a strong influence on human behavior.

HEALTH SYSTEMS SCIENCE AND SYSTEMS THINKING

Health systems science is the understanding of how health care is delivered, how health professionals work together to deliver that care and how the health system can improve health. Systems thinking is the glue that connects the domains of health systems science. Systems thinking allows health professionals to apply a comprehensive, holistic and patient-centered approach to health care. Because health care is a complex web of interdependencies, health professionals must be able to ‘see’ the whole and recognize multidirectional cause and effect relationships within the system.
Patients need their health professionals to use systems thinking to successfully improve their health and meet their health care needs and to anticipate and mitigate safety threats or other problems before they occur. As systems citizens, health professionals must be collaborators and leaders in system transformation. Health professionals have two jobs: delivering high-value care to patients and improving the processes and outcomes of care. Systems thinking is needed to make these improvements.

**HABITS OF A SYSTEMS THINKING HEALTH PROFESSIONAL**

Systems thinking health professionals develop specific habits to help them provide patient-centered holistic care. These habits provide ways of thinking about how the health care delivery system works and how actions taken impact results seen over time. The habits foster problem-solving and encourage questioning. Each habit can be applied to improve clinical care. For example, a health professional reviewing the discharge instructions of a patient, including the list of follow-up appointments, remembers the patient lives alone and cannot drive. She thinks about how to help arrange transport through a community partner. This is an example of making meaningful connections within and between systems, one of the habits of a systems thinker.

- Seeks to understand the big picture
- Observes how elements within systems change over time, generating patterns and trends
- Recognizes that a system’s structure generates behavior
- Identifies the circular nature of complex cause and effect relationships
- Makes meaningful connections within and between systems
- Changes perspectives to increase understanding
- Surfaces and tests assumptions
- Considers an issue fully and resists the urge to come to a quick conclusion
- Considers how mental models affect current reality and the future
- Uses understanding of system structure to identify possible leverage actions
- Considers short-term, long-term and unintended consequences and actions
- Pays attention to accumulations and their rates of change
- Recognizes the impact of time delays when exploring cause and effect relationships
- Checks results and changes actions if needed: “successive approximation”


**QUESTIONS TO ASK:**

- How can health professionals make the health system function better for patients?
- How does an understanding of systems thinking change the mindset and enhance the skills and behaviors of a health professional?
- What does systems thinking look like in the clinical setting?
- How will you apply the habits of a systems thinking health professional?