The Dark Side of Systems Thinking

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I RECENTLY ENROLLED in a professional and organizational development program. My first assignment was to answer the following questions: is systems thinking a modern cliché or a fad that will soon pass? Or, is systems thinking a method of change to support sustainability and viability within a health care system? I labored over my response for several weeks before I could construct my reply. Certainly there have been fads in nursing over the years, right? Who does not remember primary nursing? It was here to stay! Then came team nursing. We feverishly worked to adapt to shifting priorities, including shrinking resources and pending nursing shortages. Patient and family centered care? We became focused on consumer and third-party payers' desire for higher quality, lower cost care.

Systems Thinking and Health Care

Not unlike other theoretical approaches to the complex and dynamic changing world of health care (and nursing), I think the application of systems thinking in the health care industry will eventually morph into a new and futuristic approach to industry challenges. Consider one of the origins of systems thinking – engineering and technological applications. I appreciate the following aviation analogy when considering how systems thinking applies. First, much like members of a health care team, the parts of an airplane put together can do something that none of the parts alone can do. For example, what does a plane do? It transports individuals from one place to another. No single part of a plane can do that alone. Not the wing, not the engine, not the fuel, not the pilot. The second characteristic shared by all systems is that the individual parts must rely on the other parts to maximize performance. If the wing flaps on a plane malfunction, or an engine fails, or the fuel tank runs dry, the overall performance of the plane is affected.

I believe there are many principles of systems thinking that can, and should, be applied to certain, current health care processes today. There are numerous factors that are critical to the successful application of this model in health care, factors that are not always considered when providing a systems approach to problem solving. A crucial step to applying systems thinking is the correct assessment and identification of "the issue." Is the problem really a problem? Can the cause associated with the problem be correctly identified? For example, if a system is composed of a number of institutions, is it a problem that one member organization serves certain meals for inpatients whereas another member organization uses a different menu? Is this a point of patient care that needs to be standardized? Also, there are times when there are so many bandaids on top of bandaids, it can be quite difficult to remember the original "wound." We, as health care providers, have become highly skilled at creating workarounds to solve our practice dilemmas! Uncovering the root issue involves a willingness to look at both the macroscopic and microscopic views (looking at both the whole and the parts) and needs to include the most relevant stakeholders. In my experience, if the wrong voices are at the table, the problem being addressed may not be the true problem at hand.

Standardization

I completely agree that health care technology and equipment design are appropriate "processes" where systems thinking should be applied, but "standardization" for the sake of standardization can miss some of the important nuances

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associated with individual and system efficiencies, inefficiencies, and barriers to best practice. At the risk of cliché, one size does not fit all – nor can you put a round peg in a square hole. Agreed, there are many examples of the patient experience from the moment the decision is made to enter the system for health care where the application of the analytical steps associated with lean thinking would produce great benefit (eg, the registration process, preoperative testing, and other workflow processes in the health care dynamic.) As Pronovost, et al.[1] report, "More innovation could occur across health care, and health care would become less fragmented, if technologies shared information more readily." An example of the fragmentation that we face daily in clinical practice is the patient record, particularly the hybrid chart, which is part paper and part computer. Regardless of the electronic platform, the electronic health record should be able to "tell the story." As a manager who has reviewed hundreds of clinical records for accreditation audits, I have observed so much fragmentation in the electronic health record that there are wide gaps in the flow of the patient story. Other examples of technology gaps abound. As a nurse, I should be able to program a "smart pump" to deliver what I want, as I want it delivered, when I want it, to a patient without fear of "system" failure. This is where the analogies to aircraft and spacecrafts and nuclear submarines are appropriate. Keep in mind, however, planes crash, submarines fail to surface.

Human Design

On the other hand, when it comes to the patient experience, I have never cared for one patient who could react or respond to a like-intervention exactly the same way the previous patient did…humans, fortunately, by design, are NOT aircraft or submarines. In my experience as a clinical nurse for nearly 40 years I have long learned that "a lap chole" is not a lap chole but that each "lap chole" is a patient with a history and experience and fears and reactions that are completely unlike any other. I accept that standardization is an important process – standardization in aviation assures that each plane, regardless of whether it is JetBlue or American Airlines, will fly. Period. But if I had to choose, I might prefer the little entertainment screen on the back of the seat on my JetBlue flight, or the frequent traveler perks I get from American Airlines. I might also choose Captain Chesley Sullenberger to pilot my flight (the famous "SULLY" of US Airways flight 1549) if I had the choice.

Finally, the former Institute of Medicine and the National Academy of Engineering Systems Approaches to Improving Health Innovation Collaborative define a systems approach to health as "one that applies scientific insights to understand the elements that influence health outcomes; models the relationships between those elements; and alters design, processes or policies based on the resultant knowledge in order to produce better health at lower cost."[2] A key component of this statement is the term "scientific insights"…this implies that stakeholders have knowledge of, access to, and experience with systematic reviews of current science to apply best practice principles to workflow, patient, and quality care. In my experience, this is an area of weakness when approaching systems thinking if no tools are available or provided to assist with the scientific inquiry into product or process-related outcomes. In the absence of the systematic review of the literature there can be no focus on current best practice – many stakeholders are holding on to the sacred cows of experience and comfort. As Trbovich pointed out, for a healthy culture of systems thinking, leaders and stakeholders must have the capacity for reflective dialogue, deep insight, and a willingness to shift entrenched mental models.[3]

Final Remarks

John Nance, a pilot, attorney, aviation safety analyst, professional speaker, and author on topics including health care safety, describes obstacles to health care reform as "a combination of inertia (this is the way we've always done it), cottage industry/farmer's market structure (you can't tell me what to do, I don't work for your hospital), and the fact that we insist on thinking of healthcare as an industry instead of America's most vital public utility."[4] There is no question that to support sustainability and viability within our current health care system, we must embrace systems change. The question is, do we embrace systems thinking or seek and advocate for new methods of achieving highly reliable organizations that provide consistent and safe care? Flight attendants, please prepare the cabin for takeoff.

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