The Ergonomics of Innovation

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By now, most readers of P&T are familiar with the Institute for Healthcare Improvement (IHI) in Boston. A not-for-profit organization led by Dr. Donald Berwick, IHI has been largely responsible for tackling the challenge of improving the quality and safety of health care in thousands of hospitals throughout the U.S. Its campaigns, including “Saving 100,000 Lives” and “Preventing Five Million Medical Mistakes,” are now legendary.

In a report from McKinsey Quarterly,1 faculty members from Stanford University’s Graduate School of Business describe what they call the “ergonomics of innovation” and how IHI reflects this. What does this jargon really mean?

The basic theme is that physical and cognitive “affordances” (possible functions or actions) can help people think about, know, and use something more easily and make fewer errors. The business school’s professors believe that any organization can adapt these principles, especially in influencing networks, where there might be little, if any, formal authorization. I believe that every P&T committee member would benefit from a deeper understanding of this topic.

The components of the ergonomics of innovation consist of creating something new from a blend of old ideas, setting goals that encourage action, working with small steps, and developing tools that make it easier for people to promote change.

Another concept is “constraints.” For example, hospital P&T committees operate under many constraints, especially in terms of time. Scientific evidence is exploding exponentially, and it is simply impossible for practitioners to keep up with every peer-reviewed article in medical journals. If we could find a way to eliminate the cognitive and emotional load on physicians, pharmacists, and nurses, we might be able to introduce changes that would not be so mentally taxing.

According to the article, learning how to do something new is far more time-consuming than doing what we already know. It takes more mental effort to be in the “mindful” state, which is needed for learning and experimenting, than to be in the “mindless” state, which is suitable for performing ingrained actions. In addition, people who are learning and making changes tend to make mistakes and experience setbacks, which can be upsetting and result in inefficiency.1

So how might we continue to work with the ergonomics of innovation while taking into account any external constraints? The McKinsey article suggests that we:

• think about how to build upon a successful blend of existing ideas rather than develop the newest and most radical ones.
• set a public, inspiring, and difficult goal, and then break it down into manageable chunks.
• improve the chances that innovative ideas will spread by encouraging our organizations to identify possible ways to help others understand and apply new products, systems, and procedures.1

By now, the solution is becoming clear; P&T committees can set a key public goal, such as reducing medication errors by 50% in the next year. For instance, the committee could use reminders on every computer screen to engage nurses in the process of patient care. Although the task of reducing medication errors seems insurmountable, the situation can begin to make better sense when we break down the problem into smaller pieces by harnessing the concepts from the ergonomics of innovation. It is the obvious and simple tools that work.

The professors at Stanford’s business school also describe a common syndrome that affects many P&T committee members, namely, the “curse of knowledge.” Those who have specialized knowledge often underestimate the difficulty of communicating new information to others. I interpret Stanford’s advice as “keep things as simple as possible.” We need to deliver straightforward messages when we face challenges in health care, as, for instance, in the effort to improve prophylaxis against deep-vein thrombosis (DVT). Even though we have all the scientific knowledge and all the tools to conquer DVT, this is still a critically important problem in virtually every hospital in the U.S. Achieving success, therefore, calls for effectively communicating new ideas to the troops.

The terms ergonomics of innovation, affordances, and constraints may sound like a lot of jargon, but to me they are practical. How often have you seen P&T committee members who seem stymied by the scope and breadth of the day-to-day problems they face? People give up because they’ve tried to make changes on their own or within their own units without success. If we paid more attention to the tools of innovation, I think we could make greater progress. We should also try to learn from other industries and sources outside our regular reading of the scientific literature. I am energized by these new concepts, and I hope you are too.

As always, I’m interested in your views. I can be reached at my e-mail address, david.nash@jefferson.edu. Please also visit my blog at http://nashhealthpolicy.blogspot.com.

REFERENCES