

provide useful knowledge and analysis on the various application, planning and economic aspects of EHR initiatives.

In addition, special interest columns and articles provide valuable information and insight on the economics of health-care IT, predictive informatics, nursing informatics, legal issues and IT education for management executives.

Finally, I would like to thank the professional staff at HIMSS, the peer reviewers and the editorial review board for all the behind-the-scenes work that goes into producing each issue. *JHIM* continues to look for new ways to provide relevant, important and useful information for healthcare professionals, academicians and HIMSS members. If you have any comments or suggestions that could help us improve in any way, please feel free to e-mail me at rdlang@know-power.com.

JHIM

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Economics 101

The Imperative for Efficiency and Effectiveness

MY PREVIOUS COLUMN (“The Fourth Factor of Production,” Fall 2007) used economic analysis to show that healthcare’s fundamental problems cannot be solved without information technology. Even the best-trained minds in the industry simply do not have the capability to process all the information required for 21st century patient care. Were the minds of healthcare professionals smart enough to manage all the data, provider organizations would still suffer because of straining personnel shortages. Without IT, a limited labor supply won’t get the job done.

The HIT Futurist continues to analyze health IT from the perspective of Economics 101. It presents two economic concepts that are swiftly becoming essential for the survival of health systems: efficiency and effectiveness. Providers have not been forced to be efficient and effective in the past.

Government and business, however, are no longer willing—or able—to pay more money to providers. Third-party payments for healthcare will not continue to rise as they have every year for the past several decades. Some commentators assume that consumers will make up the difference, but they are already spending more than they earn. A strong case can be made that healthcare spending has peaked at 17 percent of the GDP.

WASTE NOT, WANT NOT

Consequently, providers must look elsewhere for new resources to survive and grow in a very different economic environment. The most promising source of available resources is already under providers’ control: the abundant waste produced by medical services. Studies consistently show that between one-fifth and one-third of all healthcare dollars are spent unproductively.

Eliminating internal waste and re-allocating recovered resources are the

biggest challenges providers will face in the coming years; it is probably the key to survival as more buyers cease subsidizing waste. The economic concepts of efficiency and effectiveness provide useful models for finding waste in production processes. Management engineers use these tools to devise the process changes that eliminate waste from daily operations.

EFFICIENCY: LEAST-COST PRODUCTION

Efficiency is the lowest point on the U-shaped cost curve, a core principle of Economics 101. It is the point where output is maximized for a fixed budget, or costs are minimized for a fixed output. The cost-minimization perspective is appropriate for most healthcare organizations. A variety of proven management tools can be used to move providers to the bottom of the cost curve, including Lean, Six Sigma, Toyota Production System and Plan-Do-Check-Act/Balanced Scorecard.

To become efficient, providers need to identify defects in production processes and eliminate unnecessary steps in the way medical services are produced. All the methods for moving to desired future states are heavily data-driven. Performance must be measured from the beginning, and in-progress corrections must be made to ensure that changes lead to the least-cost combination of inputs. Infor-

mation technology is the key to improvement at every step along the way.

EFFECTIVENESS: DELIVERING AS PROMISED

Effectiveness is a measure of the relative compliance with objective specifications of expected performance. A 100-percent effective process delivers the product of expected quality—ideally, the best one possible given the quality of labor, materials and technologies used to turn these inputs into the final product. The key to effective production is defining characteristics of the desired good or service before it is produced.

Healthcare is obviously not a textbook industry for effectiveness. It falls particularly short in applying the proven key to effectiveness in other industries—process standardization. Hospitals routinely allow different caregivers to do the same things different ways. This often leads to wide variation in outcomes, which is seen as one of the failures of health systems. Fortunately, performance-improvement tools that promote efficiency also improve effectiveness through the standardization made possible by IT.

EFFICIENCY IS NOT EFFECTIVENESS

Effectiveness and efficiency are often treated as synonyms. Nothing could be further from the truth. For example, a lot of waste could be generated in the delivery of a top-quality medical service, and the least-expensive combination of inputs will not necessarily produce top-quality care. Efficiency and effectiveness need to be achieved through performance improvement activities that address both concepts simultaneously.

Economics 101 includes another concept that must be reflected in formal programs for becoming efficient and effective. Only one variable can be maximized or minimized in a closed system with limited resources. Healthcare today is clearly a closed system with limited resources, so the commonly stated goal of producing as much healthcare as possible as cheaply as possible is nonsense.

NEED TO CHOOSE

One variable can be maximized in the process of becoming efficient and effective. The other must become a constraint, a specific and measurable limit placed on the production process. Healthcare will not make economic sense until its providers decide what to maximize and what to impose as a constraint.

My new book¹ proposes a specific resolution to this problem: providers should standardize quality first, then find the least-expensive way to produce health services that consistently meet pre-determined standards. The book offers a simple slogan for providers who accept the imperatives of efficiency and effectiveness: doing it right all the time, as inexpensively as possible.

HIT PROFESSIONALS' NEXT BIG ROLE

The production of efficient and effective healthcare depends heavily on good IT systems. Workforce shortages and the ever-increasing complexity of clinical databases make IT even more essential to the healthcare industry. When the leaders of healthcare organizations realize that

the future of their organization depends on efficiency and effectiveness, information experts will have new and more important roles to play.

To get ready for this exciting challenge, healthcare IT professionals must prepare

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to support their enterprise's needs for performance improvement and clinical transformation. In other words, the future of IT will soon involve a whole lot more than the traditional concerns of maintaining a secure network and facilitating the flow of information between the patient floors and the finance office. Managing the interface between efficiency (minimum cost) and effectiveness (standardized quality) will be a big part of the future. This conclusion is as inescapable as Economics 101. **JHIM**

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1. Bauer JC, Hagland M. *Paradox and Imperatives in Health Care: How Efficiency, Effectiveness, and E-Transformation Can Conquer Waste and Optimize Quality*. Boca Raton, FL: Productivity Press; 2008.