How Hospitals Can Successfully Implement Evidence-based Guidelines

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Despite all the dissonance that characterized the healthcare reform debate leading up to the new law's passage in March, a few principles seem to have attracted general agreement: first, the fact of too much waste in American healthcare; second, that we need higher-quality care; and third, that science and clinical best practice ought to play some role in the overall fix of healthcare. While the idea of improving quality and efficiency may seem paradoxical, these improvements are actually complementary.

A previous Milliman report, *The Convergence of Quality and Efficiency and the Role of Information Technology in Healthcare Reform*,[1] examined how the goals of improving patient outcomes and reducing the estimated $700 billion in waste in the U.S. healthcare system[2] are not mutually exclusive. Indeed, a combination of evidence-based medicine and electronic health records (EHRs) can help to minimize variation in care and establish use of certain best practices, thereby reducing unnecessary procedures, ensuring that essential care is delivered, and in some cases prioritizing the most effective treatments among a number of choices.

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The move toward a more scientific, data-driven approach to care delivery has attracted support among many in the clinical community, where evidence-based guidelines are seen as an effective way of identifying and utilizing this unique convergence of quality and efficiency. But how do we make it happen? How do we change the culture, influence preexisting care preferences, and bring key stakeholders on board? How does a hospital or other provider organization that is not currently built around evidence-based medicine begin to tap into this collective clinical intelligence?

This paper will look specifically at the challenges of implementing evidence-based guidelines and fostering the positive changes they can bring. With or without reform, many of the goals stated at the outset of the reform process are embodied in this idea of convergence. This paper will examine eight pragmatic steps required to begin to make that convergence a reality:

1. Selecting evidence-based guidelines
2. Strategic vision: establishing an organizational priority
3. Multidisciplinary collaboration: team use of evidence-based guidelines
4. Role of EHR in physician adoption of evidence-based guidelines
5. Evidence-based guidelines training
6. Measuring and sharing results
7. Performance improvement using evidence-based guidelines
8. Evidence-based guidelines: impact on reimbursement

GETTING STARTED: SELECTING EVIDENCE-BASED GUIDELINES

Whether an organization is focused on a particular condition or is considering the introduction of best-practice standards across the enterprise, choosing individual or sets of evidence-based guidelines is generally the first step. The selection process is usually driven by critical needs of the user or organization. Often, a facility has identified areas in which there is great variation in practice, areas where new knowledge should be put into practice or where resource consumption might be considered inappropriate.[3] Sometimes

[1] Blumen, Helen E. & Nemiccolo, Lynn D. (June 2009). The convergence of quality and efficiency and the role of information technology in healthcare reform. Milliman research report. Available at http://www.milliman.com/perspective/healthreform/pdfs/convergence-quality-efficiency-role-RR06-01-09.pdf.

[2] Harris, R. & Slipher, C. (May 1, 2009). Transforming healthcare: Identifying the failures and unlocking the potential of our current system. Available at http://www.milliman.com/perspective/articles/transforming-healthcare-identifying-failures-insight05-01-09.php.

[3] Shiffman, R., Michel, G., Essaihi, A., Thornquist, E. (Sept./Oct. 2004). Bridging the guideline implementation gap: A systematic document-centered approach to guideline implementation. *Journal of the American Medical Informatics Association*, 11: 5: 418-426.

regulatory or accreditation requirements drive the decision to make the change.

Helen E. Blumen and Lynn D. Nemiccolo, in *The Convergence of Quality and Efficiency and the Role of Information Technology in Healthcare Reform,* note that "acceptance of guidelines and wide implementation depend on providers' confidence that the guidelines are developed by truly independent arbiters of what defines appropriate healthcare. To date, unfortunately, acceptance has been slow to develop."[4]

Unfortunately, gaps in evidence exist, and some evidence, while valuable, may not be specifically suited to clinical implementation. The best clinical guidelines, then, are part science and part experience. Guideline editors must use their skills to synthesize existing evidence, including the experience of seasoned clinicians, in writing the actual guidelines. Guidelines must be practical, succinct, and not overreaching. External review by practicing clinical specialists is one of the final but critical steps in ensuring that the guidelines developed have applicability. It is possible to develop guidelines that meet rigorous standards of development and yet fail to secure the support of providers because they are not seen as applicable.[5]

The degree to which providers adopt clinical guidelines for use in their daily decision making is one standard by which they might be measured. For this reason, it is of critical importance to engage physicians in the selection of guidelines that represent those essential qualities necessary to secure their confidence.

The following criteria can help guide decision makers in the guideline selection process:

- Guidelines should be a memory aid, a checklist, subject to the judgment of physicians who know their patients and the unique clinical pictures they present.
- The scope of evidence reviewed should be clear and should include published randomized controlled trials (RCTs), along with other published and unpublished data, which may include reports from expert practitioners, written protocols, and outcome reports. The evidence should also include large database analysis to include observational research.[6]
- Transparency surrounding the assessment of the strength of a body of evidence must be indicated in guidelines.[7]
- Editorial independence in writing guidelines must be apparent—providers need to be convinced that clinical guidelines have not been influenced by vested interests or by the audience intended to apply the guidelines (i.e., providers and payors).
- Specificity lends credibility to guidelines. At the same time, populating guidelines with specificity not supported in the literature may reduce provider confidence.
- Guidelines should be viewed by providers as valid and applicable to the patients they treat and the clinical situations they face.
- Guidelines must be current.
- Guidelines must focus on care management, which includes care planning, care coordination, and resource use.
- Guidelines must be comprehensive, covering the majority of clinical diagnoses that providers face.
- Guidelines should include avenues that enable providers to give feedback about what works and what doesn't.
- Guidelines should have concise, actionable language that avoids unnecessary vagueness and ambiguity within software that is easy and efficient to use.
- Guidelines, and the software that delivers them, should allow clinicians to compare the services they are providing and the progress of their patients against the benchmark best practice. This enables providers to first identify variances by type and cause and then to generate variance reporting that can lead to directions for performance improvement action.
- Materials designed for use by patients should be consistent with the guidelines being used by providers. Engaging patients, families, and caregivers through evidence-based patient education helps ensure that all stakeholders involved are moving consistently in the same direction, with similar expectations.

STRATEGIC VISION: ESTABLISHING AN ORGANIZATIONAL PRIORITY

The role of a facility's senior leadership in successful implementation of evidence-based guidelines is frequently underestimated or overlooked. In spending time training and assisting hospitals in their implementations across the country, we find that the involvement and impact of senior leadership in this effort makes a significant difference in their success.

While most if not all hospital executives have adopted laudable mission and vision statements, they—like many organizations inside and outside of healthcare—have fallen short in translating these statements into meaningful practices that define organizational priorities and drive daily modes of operation. Most undertake a broader strategic planning process that focuses on how to conduct

4 Blumen & Nemiccolo, ibid.

5 Nuckols, T.K., et al. (2008). Rigorous development does not ensure that guidelines are acceptable to a panel of knowledgeable providers. *Journal of General Internal Medicine*: 23(1): 37-44.

6 Sox, H,, & Greenfield, S. (2009). Comparative effectiveness research: A report from the Institute of Medicine. *Annals of Internal Medicine*; 151:203-205.

7 Owens, D.K., Lohr, K.N., Atkins D, et al. (July 2009). Grading the strength of a body of evidence when comparing medical interventions. Methods Guide for Comparative Effectiveness Reviews. Rockville, Md. Retrieved April 19, 2010, from http://www.effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productid=328.

hospital business in ways that are consistent with the mission and vision statements. But the planning process must also create an organizational culture that is committed to providing high-quality and effective medical services to the community. It is within a culture committed to excellence that the implementation of evidence-based guidelines can be most effective.

While each facility will have its own specific goals and critical business issues that drive the decision to implement clinical practice guidelines, any top-down implementation strategy should satisfy four objectives: increasing knowledge, changing attitudes, changing behavior, and changing outcomes.[8]

In a practical sense, then, senior leadership personally committed to their mission will fully support the achievements of these impacts and ultimate adoptions of evidence-based guidelines at their facilities. To demonstrate their commitment and support, CEOs should:

- Communicate to their staffs about the commitment of their facilities in applying scientific, data-driven, evidence-based guidelines in the care of all patients. They will communicate how the use of evidence-based guidelines supports the hospitals' overall missions, and will articulate the vision to achieve the best practice in the care of patients across all clinical departments.

- Allocate sufficient funds for the acquisition and implementation of evidence-based guidelines across the enterprise.

- Identify senior-level physicians, such as the chief medical officer (CMO) or vice president of medical affairs, to play a critical role in the selection and implementation of guidelines. That person will introduce the guidelines to medical staff and clinical departments, and will be an active participant in the support and training of all departments. The physician executive frames the use of guidelines as a decision-support resource for all clinical departments. The presence, commitment, and visibility of this clinical leader communicates that this process is, first and foremost, a clinical quality initiative and that appropriate resources have been committed to ensure success. The project plan for the selection and implementation should be the function of other key staff members, but the senior physician executive becomes the executive sponsor and internal champion for the project.

- Acknowledge that finance, care management, information technology, quality improvement, and other functional areas are all key to a successful implementation. Team members from these areas will be named to cross-functional implementation teams and work groups as appropriate.

The CEO-driven guideline environment described above is the ideal, but far too often in U.S. hospitals the role of CEOs is only to secure financial approval for licensing. CMOs are one step removed or do not take a visible role in the selection or implementation. Most often, leadership of care/case management, quality improvement, medical records, utilization review/management, or clinical appeals departments take the lead in the selection and implementation of guidelines. These department leaders carry the full weight of the decisions and implementation, using senior leadership to support them by securing the tools they need for their work. The consequence in many cases is that guidelines are perceived as being the tool of care/case managers or discharge planners, who are only applying the guidelines in their reviews of cases to ensure that documentation in the medical records is sufficient to ensure reimbursement.

WHAT HAPPENS WHEN SENIOR LEADERSHIP IS NOT INVOLVED?

A more narrow departmental focus often results in a guideline implementation that does not achieve its full potential. For example:

- Guidelines are used only by a very small cohort of staff: mostly case management (CM) or utilization management (UM) staff, discharge planners, and appeals staff. Because these types of staff typically interface with payors, guidelines become perceived as a necessary tool to assist with reimbursement rather than a decision-support tool that is part of a larger clinical/quality initiative.

- Guideline selection is driven by what payors and auditors require versus what the most rigorous review of medical evidence has shown is necessary to deliver higher quality and efficiency. Or, alternatively, guideline selection is driven by input from end users who frequently focus on ease and efficiency of use at the risk of ignoring the more important scientific, evidence-based components.

- Physicians and some departments do not engage with the guidelines or may not even know they exist as a resource in the facility.

- Guidelines are not used for decision-support by clinicians, so the impact on the quality and efficiency of care is limited or nonexistent.

Clearly, these scenarios strip guidelines of the potential to drive maximum quality and efficiency improvements.

MULTIDISCIPLINARY COLLABORATION: TEAM USE OF EVIDENCE-BASED GUIDELINES

Hospitals that are most effective at implementing evidence-based guidelines frame the use of them first and foremost as an initiative of quality and efficiency improvement. They include stakeholders from all clinical departments in the process of guideline selection. After guideline selections have been made, they establish the expectation that all clinical departments will use them as the clinical

[8] Conroy, M. & Shannon, W. (1995). Clinical guidelines: Their implementation in general practice. *British Journal of General Practice* 45: 371-375.

standard for treating and discussing each case. As part of the overall implementation plan, each department is required to develop its own plan for guideline deployment and adoption that supports the overall vision of using guidelines to provide high-quality and effective care.

It is important that everyone participate when attending physicians, staff nurses, pharmacists, care managers, and other caregivers meet to discuss specific patients and their clinical progress. These discussions are sometimes referred to as patient huddles, care coordination rounds, grand rounds, or discharge planning sessions. Other clinical departments are invited to attend as determined by the case.

In these patient huddles, the evidence-based guidelines are used to facilitate collaborative discussion among and between the patient and the clinical team. According to the clinical pathway for its patient, the clinical team tracks what has been done, what interventions need to be done that day, the clinical milestones the patient has achieved and has yet to achieve, and any remaining concerns about discharge that need to be addressed. This structured dialogue about each case is extremely useful in anticipating the next steps in the care process, including physician orders that may need to be written and any additional planning that is necessary to ensure that best practice is followed and appropriate treatment services are delivered in a timely way. By using evidence-based guidelines, there is consensus about care delivery and recovery expectations among everyone involved on the patient care team.

Patients are also considered a part of these gatherings and are, in fact, given a central role. Their understandings, inputs, and concerns are highly regarded and they have a significant influence on the processes. It is extremely helpful if the clinical team can give the patient a guideline, designed for a layperson, that matches the one being used by clinicians. By expanding patient knowledge, increased patient participation in the process of care can be expected. This also helps to set the patient's expectations about what interventions they can reasonably expect through the course of treatment and how long it will take to recover. Patients come to participate more actively in the management of their care. Clinicians can deliver more patient-centric care by engaging patients more broadly in their own healthcare decisions.

Complex care rounds to discuss those patients who are particularly complicated, or have been hospitalized past the average length of stay, have proven effective for hospitals. Pharmacists, dietitians, physical therapists, nurses, and the attending physician convene to identify hospital system issues or other potentially avoidable variances that are occurring, and then mutually arrive at actionable steps to address the issues.

In some models, care managers frequently become the experts in applying evidence-based guidelines; in other models, hospitalists, nurse-practitioners, or physician assistants may take on this role. Every organization is different. In organizations where care managers are the experts, these individuals have an integrated function: They perform utilization review activities, they are members of the clinical team on the unit seeing the patients, and they partner with the unit nurses and other clinical staff. This broad range of functions prepares them to take an active role in the patient huddles as they focus on proactive, anticipatory guidance. Clinical staff, including attending physicians in most cases, will find their contributions of great value and over time come to trust their commitments to patient care.

Care managers are often seen as team leaders, shepherding the patient's care and actively engaging with each clinical team member. For this reason, they need the support of physician leadership to help them effectively navigate this process. Having individuals with a comprehensive, integrated view reporting to the CMO, the VP of medical affairs, or other physician leadership (be they care managers, hospitalists, etc.) empowers them to address any department as needed. It also allows them to engage their physician leaders in assisting them with issues that are specifically physician-related. On the other hand, when the individual with the broadest view reports to the CFO that function can become perceived as exclusively driven by reimbursement concerns rather than quality. This should be avoided.

In order for the integrated view to permeate the organization, each facility needs to set specific documentation standards, especially with regard to discharge planning, care coordination, and utilization review.

The CMO is responsible for making sure that he or she supports the overall vision and mission of the facility by working specifically with physicians. CMOs will need to:

- Ensure that the medical staff is involved in the selection of guidelines
- Provide initial and ongoing training on the evidence-based guidelines
- Address and coach physicians regarding practice patterns that are in conflict with best practice
- Expect a commitment to multidisciplinary collaboration
- Document patient care in a way that supports the level of care and continued stay of patients

ROLE OF EHR IN PHYSICIAN ADOPTION OF EVIDENCE-BASED GUIDELINES

There is reasonable agreement that electronic health records (EHR) can and will play an important role in evidence-based medicine and the use of clinical practice guidelines. There are issues, however, related to guideline adoption and EHR. Among these are insufficiencies in:

- Access to guidelines at the point of care
- IT support for decision making

- Resources to support adoption, staff training, and maintenance of IT systems, especially for small or solo practice physicians[9]

As noted by Blumen and Nemiccolo,[10] other barriers to physician adoption remain. Many physicians share a concern that the use of evidence-based guidelines and clinical decision-support tools as a part of EHR will decrease their clinical productivity and affect financial reimbursement. They also want to maintain their autonomous decision making regarding clinical care and have concerns that these tools will infringe on their autonomy. In some cases, their experiences with clinical decision-support tools in EHR applications have led to increased resistance because the tools they are asked to use have been developed without clinician input. For broad adoption by physicians, evidence-based guidelines as a clinical decision-support tool in EHRs require physician input. Their input is essential to addressing the issue of efficiency in use and how this tool supports rather than replaces their clinical autonomy.

Effective decision-support tools are designed to integrate guideline knowledge with beneficial features that users appreciate. They consider the volume of information and prioritize advice in a way that doesn't overwhelm users, and they employ effective user interface design principles. Use of an EHR system offers the opportunity to integrate patient-specific, guideline-prescribed advice into the clinician-patient interaction. This facilitates the guideline content integration into the workflow, and supports decision makers' use at the point of care.[11]

Despite some significant challenges, physicians believe that evidence-based guidelines will have a major influence on clinical decision making over the next five years. Healthcare system and process improvements will be necessary to optimize the use of guidelines, and stakeholders will need to pursue proactive strategies for change. For EHR, experts report that we must encourage and invest in IT innovations that advance clinical decision support. To enhance guideline adoption and adherence, EHR systems need to:

- Provide useful data to decision makers at the point of care
- Offer feedback loops so physicians can measure their practice patterns against other colleagues
- Ensure interoperability between inpatient and outpatient facilities and among physicians
- Include flow diagrams and algorithms that enable physicians to exercise autonomy and clinical judgment and respond to patient preferences[12]

EVIDENCE-BASED GUIDELINE TRAINING

Training is an important component of successful implementation of evidence-based guidelines. In designing a training program, we recommend the following best practices:

Conduct a training assessment

Before any training occurs, the guideline trainer should understand the organization's goals for using evidence-based guidelines (ideally those goals are set by senior leadership), the key characteristics of intended users, and the preferred and optimal approach for guideline training. This structured discussion with facility leaders enables the guideline trainer to understand the clinical, operational, and technical environment in which the user will apply the guidelines. The trainer is then able to customize and tailor the training approach to the specific needs of that facility. The guideline trainer can also explore users' backgrounds and previous experience with guideline use, as well as any prerequisites that might be appropriate for participants.

It is also important to take into account the learning capacity of staff members. Sequencing and timing are critical elements, and should be developed based on the results of the assessment. This plan should also be revisited at least annually to ensure that staff members remain competent and current with updated best practice guidelines.

Choose qualified and experienced guideline trainers

Guideline trainers should be clinicians: nurses and physicians who have the advanced training and credentials that allow them to speak as experts about the development and application of evidence-based guidelines. These trainers should have education and experience necessary to demonstrate that evidence-based guidelines, applied appropriately, can and will improve the quality and efficiency of care for patients.

Trainer enthusiasm is contagious, and can play a significant role in influencing hospital staff to more readily adopt and use guidelines. Because, ideally, they are seasoned clinicians who have themselves faced the same clinical scenarios as the learners, guideline trainers bring empathy and true understanding of the users' environments to the classroom. Experience working in payor and/or provider organizations brings credibility that will reassure staff about introducing guideline use to the facility. A trainer's ability to field questions competently and calmly will give staff the confidence they need to use the guidelines.

Offer training that recognizes the multiple ways that staff members learn

Ensure that adult learning theory is integrated into the development and delivery of guideline education sessions. Guideline trainers who hold certifications from independent training authorities are the most capable of creating and delivering programs that will reach all types of learners. Employing various techniques, including lecture,

9 Keneflick, H., Lee, J., & Fleishman, V. (Feb. 2008). Improving physician adherence to clinical practice guidelines: Barriers and strategies for change. New England Healthcare Institute.
10 Ibid.
11 Shiffman et al., ibid.
12 Keneflick & Fleishman, ibid.

hands-on experience with the guideline products, case study review, and independent and group exercises, provides for dynamic sessions that hold the attention of participants. Various media and training environments—including classroom, webinar, and self-directed, computer-based options—allow clients and clinical trainers to jointly craft training strategies that address client requirements and provide often needed flexibility.

Schedule training strategically to optimize results

Ideally, guideline users will receive comprehensive training just before they begin using clinical practice guidelines in their daily work. This ensures that information is recent and that they can apply their learning immediately. Follow-up sessions with an open question-and-answer format are also quite valuable when scheduled for users with a few weeks of experience using practice guidelines. These exchanges with a guideline trainer provide the opportunity for users to clarify any issues and seek input about challenging cases they may have encountered, while at the same time serving to intervene and eliminate any misunderstanding of guideline content or application.

Some facilities face challenges with coordinating guideline training. The scheduled training can conflict with the need for sufficient coverage for a given unit or function. There are often issues with competing projects or other training requirements. Creating a training calendar with regularly scheduled and repeating sessions can help mitigate some of these issues, as users can plan in advance to participate in training sessions that more easily fit their schedules.

Organizations can supplement these trainer-led sessions with self-paced, web-based training for individual staff members as time permits. This allows for frequent guideline training that may not be possible in certain circumstances. In addition, this independent online training can afford new staff immediate training opportunities. They can use these training resources as often as they may need to achieve mastery.

Whenever possible, stratify users into like groups

Learning about evidence-based guidelines and their uses can be most effective if shared by people who have similar experience and/or perform similar functions. When learners are grouped by work function or experience using evidence-based guidelines, trainers can more easily develop customized training curricula to meet the specific needs of those users. Case studies and learning exercises can be developed to reflect specific activities or clinical conditions appropriate for that group. Learning is reinforced among and between colleagues during the sessions and after the training is complete.

Educate physicians about guidelines

Training for physicians is vitally important, because doctors' adoption and use of evidence-based guidelines holds the most promise for improving quality and efficiency of care. Specific training aimed at physician use has proven effective. The structure and format of physician training may necessarily be different than sessions designed for other clinicians. While training for all learners is most effective when delivered by a credible source,[13] training delivered to physicians by another doctor is often preferred.

Engage with guideline authors to provide feedback regarding guideline content, functionality, and training

Guideline developers strive to write clear and actionable guidelines based upon the evidence. They work to deliver guidelines using software that is easy and efficient to use. Guideline trainers create exceptional programs for adult learners to become confident and competent in application of the guidelines. There is, however, always room for improvement.

Feedback from users plays an important role in directing future guideline development. Their input helps to identify the needs for new guidelines, revisions to content, or improvements in specific features and functions. Feedback can also serve to identify the need for additional training offerings or necessary changes in training content or delivery.

Physicians, in particular, seem to welcome the opportunity to speak with guideline developers. Both groups benefit from the chance to discuss evaluation of the evidence, to explore how developers arrive at conclusions, or to exchange ideas about the structure and usefulness of the guidelines. This interaction is invaluable to the identification of new guidelines that may be needed, research on the horizon, or emerging technologies. These discussions between physicians and guideline authors also serve to reinforce physicians' commitment, interest, and engagement in the ongoing use of clinical practice guidelines.

Measure consistency of guideline use through inter-rater reliability testing

Inter-rater reliability testing (IRR) has become an important tool to help identify opportunities for improvement among users and create targeted training programs to address them. By measuring consistency of guideline application across users, IRR activities help determine if staff understands basic concepts of guidelines and how to apply them. In addition to ensuring compliance with regulatory and/or accreditation requirements, IRR results can point to specific areas where there are individual or collective knowledge deficits, or where additional training may be needed.

MEASURING AND SHARING RESULTS

As with any quality improvement initiative, the results or changes resulting from the implementation of clinical practice guidelines should be monitored and measured. A key step in the implementation process should be to capture baseline measurements for certain key clinical and/or operational processes. To quantify the impact of guideline introduction, pre- and post-implementation measurement is recommended to assess any resulting change in performance or process. Measuring results should be a key consideration to implementation planning.

[13] Conroy & Shannon, ibid.

In a study commissioned by the Brain Trauma Foundation, Artemis March and her colleagues researched change processes in clinical environments related to the implementation of clinical guidelines for traumatic brain injury (TBI). Through interviews with clinicians, policymakers, academics, and consultants, the researchers identified barriers to compliance with clinical practice guidelines, and detailed how three trauma centers overcame such barriers. In addition to the patient outcome improvements they observed, the study identified improvements in collaboration, communication, and coordination of care among clinicians from different specialties treating this very costly and complex condition. While these changes may not be precisely measurable in terms of dollar value, such operational improvements may contribute to improved clinical quality and ultimately streamline care, thus improving the cost-effectiveness of treating TBI.[14]

The implementation plan should also consider the type of feedback that providers will receive, and what comparisons it will present. The information should be actionable, and leaders should try to deliver it in a customized way for maximum impact.[15] Facilities with higher guideline adherence tend to deliver feedback in a more timely, individualized, and non-punitive way than others with lower compliance.[16]

Post-implementation results—measured in clinical outcomes, guideline compliance, and/or process improvement—should be shared with decision makers who use the clinical practice guidelines. Feedback on performance is known to be an important component to any behavior change, and physician adoption or adherence to clinical practice guidelines often requires behavior change. Monitoring physician compliance with guidelines and providing comparative feedback in an educational manner can be an effective approach to ensuring and improving guideline adherence.

PERFORMANCE IMPROVEMENT USING EVIDENCE-BASED GUIDELINES

A key element in introducing any change is to demonstrate that there is a performance gap. Until individuals and organizations acknowledge that there is a certain level of dissatisfaction with current practice, physicians and others will not likely pay attention to the solutions offered to these particular problems.[17] Hospitals elect to implement clinical practice guidelines to address a variety of *performance gaps*, but the general goal is to improve the quality, efficiency, and effectiveness of medical care they deliver.

Hospitals are complicated organizations that deliver care to patients with increasingly complex illnesses. With so many moving parts, the potential for fragmented care is significant. Introducing evidence-based guidelines will provide clinical staff a standard for decision making, a clinical pathway that describes an optimal course of treatment, and a general direction for hospital care management and discharge planning. Inevitably, as staff applies benchmark guidelines in its care for patients, variations from the guidelines will begin to be identified in the care they are delivering and/or the response of their patients. These can broadly be called variances and can be further delineated as either medically necessary or potentially avoidable.

Medically necessary variances reflect the clinical acuity of the patient being treated. Despite optimal treatment, the patient's condition is not progressing as expected, and therefore the variance cannot be avoided. On the other hand, potentially avoidable variances signify opportunities for improvements in quality and efficiency. These are sometimes operational issues, such as service availability or test results reporting. These can be physician-driven, if an attending physician does not write orders or make rounds in a timely way. This deviation from the evidence-based standard can potentially expose the patient to avoidable harm and the facility to the risk of non-payment and/or adverse audit results. When hospitals apply evidence-based guidelines, the results can identify opportunities for performance improvement in these types of processes. Commitment to ongoing continuous improvement activities will serve to decrease this type of variance over time.

Many facilities initially choose to implement evidence-based guidelines so they can make better clinical decisions and reduce variation in care. Ultimately, there are corresponding improvements to overall processes as care is realigned around the guidelines. This realignment improves what March refers to as the *three Cs of patient care*:[18]

- **Consistency of care**: low variability in care from shift to shift, day to day, nurse to nurse, etc.
- **Continuity of care**: each shift transitions smoothly, and the next group of caregivers is well informed about what has been observed and what will need specific attention
- **Coordination**: working across disciplines to provide unified and optimal care for the patient

March tells us that evidence-based guidelines "comprise a powerful set of tools for reducing variations in care, weeding out harmful practices, getting people to pay attention to the same critical variables, and preventing inappropriate redundancy." Further, she writes that they are healthcare's "equivalent to quality assurance processes in manufacturing. By keeping treatments within a narrow range of practice, the process becomes more efficient and the quality of the product—patient outcomes—improves."

14 March, A. (June 2006). Facilitating implementation of evidence-based guidelines in hospital settings: Learning from traumatic brain injury. The Commonwealth Fund.

15 Carey, M., Burton, H., & Sanson-Fisher, R. (2009). The cycle of change: Implementing best-evidence clinical practice. *International Journal for Quality in Health Care* 21(1): 37-43.

16 Hysong, Sylvia J., Best, Richard G., & Pugh, Jacqueline A. (2006). Audit and feedback and clinical practice guideline adherence: Making feedback actionable. *Implementation Science* 1: 9 doi: 10.1186/1748-5908-1-9.

17 Greer, A.L. (1988). The state of the art versus the state of the science. *International Journal of Technological Assessment in Health Care*: 4: 5-26.

18 March, ibid.

EVIDENCE-BASED GUIDELINES: IMPACT ON REIMBURSEMENT

Historically, attempts to improve reimbursement have tried to manage utilization through fixed payments, discounted fees, and capitation, but there has been little if any consequence for poor clinical outcomes. These models have served to "treat every provider the same regardless of clinical quality outcomes, and, in fact, may have the perverse effect of rewarding poor quality performers for adverse outcomes requiring additional patient care."[19] There is profound change happening in reimbursement practices, with a new emphasis on the relationship between quality and revenue.

With hospitals and insurers alike under increased public scrutiny, considering quality in calculating reimbursement is gaining tremendous momentum. This trend toward quality-based reimbursement has been taking shape for several years:

- Initially, some large private insurers introduced pay-for-performance (P4P) programs, which created a methodology for physician and hospital reimbursement based on quality measurements and performance. Instead of every doctor or facility receiving the same payment regardless of performance, P4P programs aim to pay more to those who operate more efficiently and achieve higher quality at a lower cost.

- The Centers for Medicare and Medicaid Services (CMS) launched the Hospital Quality Initiative in 2003, which created a standard set of quality measures for hospitals. Hospitals were not required to become involved in this program at first, and participation and high performance were linked to bonus payments for services provided to Medicare beneficiaries. Now the program is mandatory, and those facilities that do not achieve acceptable levels of quality receive significantly lower reimbursement than those that adhere to the quality standards and achieve good clinical outcomes.[20]

- More recently, legislation has created a number of auditing entities that will scrutinize Medicare and Medicaid payment to hospitals to ensure payment for only appropriate, covered services. In its *war on waste*, CMS requires hospitals to implement scientifically based guidelines and document best practices to support appropriate coding. In addition, CMS has created five separate programs to identify waste, fraud, incorrect payments, and quality issues.

- In 2009, Blue Cross and Blue Shield of Massachusetts contracted with one of its key multi-facility providers in a model that pays physicians and hospitals to avoid care that adds costs but doesn't improve patient health. These six hospitals and the 1,100 physicians they employ are paid to keep 60,000 members healthy. There are quality and revenue targets, with facilities and practitioners sharing upside and downside risk with the payor. Proponents say this will be different from the capitation programs of the 1990s, because improved information systems will enable providers to better track the care they are delivering and more quickly make adjustments if quality or costs appear to be problematic.[21]

For each of these programs, payment is dependent on quality. It seems to follow that implementing clinical guidelines to help define standards of care can serve to improve quality and efficiency, thus bringing higher reimbursement to hospitals.

With the new and multi-layered CMS audit activities, hospitals find themselves under a microscope. In the face of this scrutiny, evidence-based guidelines can help determine the appropriateness of admission, prompt clinicians to document the medical record, and provide supporting evidence in the case of an appeal. As hospitals use guidelines for decision support and to guide documentation in the patient record, they are cumulatively building a case for getting reimbursed for every patient, every day. As noted in a recent Milliman Care Guidelines case study, "... this makes medical decision making much easier, giving more context and clinical evidence to cases, typically leading to approval of coverage."[22] Well-researched evidence-based guidelines specify information to support level of care, treatment decisions, and clinical status milestones in the patient's recovery. This specificity serves to guide documentation in the patient record. Because the guidelines are based upon a rigorous review of the scientific literature and the supporting evidence is accessible, if and when a denial does occur hospitals can defend their decisions based upon documented best practices.

As payors and auditors interact with hospitals that are using evidence-based guidelines for decision support, they recognize the facility's commitment to reduce underuse, overuse, and variations in care. In fact, in some markets, this commitment has motivated payors and quality improvement organizations to move to the same evidence-based guidelines to guide payment authorizations.

Despite the pressures to maximize reimbursement, facilities must be cautious to balance the focus between quality and revenue. If a hospital views guidelines exclusively as a managed care tool, they risk limiting the use of guidelines to those hospital departments whose focus is reimbursement rather than clinical care. As a result, most physicians, nurses, and clinical departments may view guidelines as a tool to be used only by case/care managers, discharge planners, and those who manage denials and handle appeals in the facility.

Karen Corrigan and Robert H. Ryan, in their article for Healthcare Financial Management, *New Reimbursement Models Reward Clinical Excellence*, assert that if the clinical side of a healthcare organization performs well, revenue will increase, and that under quality-based reimbursement models, financial managers and those who ensure clinical quality can no longer work in isolation.[23] By focusing on quality of care, hospitals can optimize the value they

19 Corrigan, K., & Ryan, R.H. (November 2004). New reimbursement models reward clinical excellence. *Healthcare Financial Management*, 1-5.
20 Zhang, J. (Aug. 17, 2009). Medicare test pays for hospital performance. *Wall Street Journal*.
21 Martinez, B. (Nov. 30, 2009). Insurer aims to alter health-care fee model. *Wall Street Journal*.
22 Milliman Care Guidelines Case Study. MultiCare health system: Milliman Care Guidelines help hospital group save nearly $20 million a year.
23 Corrigan & Ryan, ibid.

receive from evidence-based guidelines and avoid the limiting notion that guidelines are a tool primarily designed for payors and auditors to approve or deny reimbursement.

CONCLUSION

The future of healthcare reform, even with the recent passage of the new law, remains unclear. Yet many reform concepts do not need to be legislated. Convergence may be one of those concepts. Improving quality is worth doing in its own right, and the fact that certain quality improvements also reduce waste in the system makes it that much more attractive. Even with all the complexity and disagreement over healthcare reform, few dispute the worthiness of these two goals, making convergence the rare *win-win* situation in healthcare.

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