why workflow redesign alone is not enough for EHR success

Addressing workflow changes has been heralded as vital to electronic health record (EHR) success. Undoubtedly, workflows will change with an EHR and should be anticipated, planned for, and carefully implemented.

When David Blumenthal, the National Coordinator for Health IT from 2009 to 2010, spoke to attendees at the Medical Informatics Association’s annual symposium on November 2009, he made an important point regarding the incentives for making meaningful use of EHRs: “It’s not the technology that’s important, but its effect.” He went on to say, “‘Meaningful use is not a technology project, but a change management project.” Blumenthal also cited as important components of meaningful use “sociology, psychology, behavior change, and the mobilization of levers to change complex systems and improve their performance.”

Given the transformative change that will result from implementing an EHR system and ensuring meaningful use of the system, hospitals and health systems should also understand the sociological, psychological, and behavioral changes that will result from EHR implementation—and redesign work flows in anticipation of these changes.

Documenting Work Flows Is Key to EHR Success

Documenting workflow is helpful in understanding and improving how people perform work. Consider, for example, sequences of tasks associated with processing lab results in a paper-based environment as compared with an EHR-based environment. By understanding how the action steps required to process lab results using an EHR will differ from those used for paper-based processes, organizations can develop new, standardized workflows for the clinicians who perform these tasks and provide education for clinicians regarding these workflows.

However, differences between paper-based and EHR environments in terms of how clinicians actually use the lab results in making diagnostic and therapeutic decisions are often not readily apparent, and they are therefore rarely documented or considered in a process improvement scenario. For this reason, clinicians attempting to adopt EHR technology often do not receive appropriate guidance or explanations as to how they might need to adapt their paper-based processes to the new EHR environment.

Suppose, for example, that a medication is ordered that may be contraindicated for a patient with certain physiological factors. The order may have been placed without regard to lab results—or the applicable lab test may not have been performed. Very likely the order will result in a call from the pharmacist suggesting an alternative drug or testing. Including an alert in an EHR that notifies the clinician of a potential contraindication is feasible. However, these types of alerts are not as commonplace as drug-drug or drug allergy
A focus on clinical thought processes, not just work processes, will likely result in improved technology.

alerts, because lab results often are not provided in a structured format and may not contain standard vocabulary. And even if such alerts were routine, many clinicians consider them annoying. Being educated as to how the alerts are generated can help engender clinicians’ trust in the alerts and belief in their value.

Impact of EHRs on Clinical Thought Processes
The impact of EHR technology on clinical thought processes is even greater than the impact on workflow. Sam Bierstock has coined the term “thoughtflow” to distinguish between understanding how clinicians work as compared with how clinicians think and then work. A focus on clinical thought processes, not just work processes, not only should ease the transition between paper and electronic processes, but also will likely result in improved technology.

Consider a physician who is challenged by how best to treat a patient for whom the drug of choice is not working. Traditionally, decisions regarding which medication will work best are made on a somewhat hit-or-miss basis. In the very least, it takes time to research alternatives. But if technology could be invoked easily to determine the most appropriate alternatives, given the patient’s condition and properties of the original drug compared with those of other drugs, the physician’s thought process would be greatly aided, and he or she would find the technology to be of value.

Even improving upon existing technology with an eye toward how clinicians think would be helpful. For example, many EHRs include preventive service reminders. Some are displayed as the chart for a given patient is opened; others require the user to enable viewing of reminders. It doesn’t take a rocket scientist to appreciate that various preventive services may be best discussed with a patient at different times in an encounter, potentially by different clinicians, and even possibly using different media outside of an encounter.

In a recent project conducted by the Centers for Medicare & Medicaid Services, quality improvement organizations were asked to study the impact of EHRs on improving the rate at which preventive services were provided. As physicians were considering how the technology might help them, several asked why reminders to discuss preventive services with a patient appeared at the time physicians were thinking about the patient’s history of present illness and conducting a physical examination, rather than during documentation of an assessment and plan of care. Physicians suggested that the alerts would be more helpful if they were received after the patients’ primary concerns—the basis for their visits—have been addressed. Then, patients would be more amenable to discussing options for preventive services, and these services could be ordered simultaneously with other orders related to the encounter.

Designing EHR Processes that Have Clinical Value
Examples such as those presented here illustrate why attention to both clinical workflows and thought processes is critical as an EHR system is implemented. Addressing clinical thought processes and workflows during EHR training programs should result in both improved processes and clinician satisfaction in using the technology. Such an approach might also result in EHR technology that is more usable because it more closely reflects clinicians’ needs.

Margret Amatayakul, RHIA, FHIMSS, is president, Margret A Consulting, LLC, Schaumburg, Ill. (margret@margret-a.com).