Success Factors for Clinical Information System Implementation
By John Glaser

What's needed to ensure the success of an organization's EMR or CPOE system? It starts with a compelling organizational vision.

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Implementing systems such as the electronic medical record and computerized physician order entry is a complex and difficult organizational undertaking. These implementations require political mobilization of the medical and nursing staffs, reengineering of clinical processes, significant capital commitments, management of large-scale projects and major changes to the IT infrastructure.

The magnitude of this undertaking leads to a high failure rate, which some estimate to be as high as 50 percent. Still, some organizations have succeeded thanks to a combination of clear goals, partnership and implementation skills:

Strong organizational vision and strategy. Successful organizations have developed a vision of patient care and a strategy to achieve that vision that is compelling, clear and understood by the members of the organization. This vision describes the critical need for excellence in care delivery and points to clinical systems as essential, strategic contributions to the vision.

Most information systems initiatives do not require the bedrock of a compelling organizational vision, but clinical information system implementations do. These systems require the commitment and efforts of virtually all staff. They require deep change in operational and clinical processes. And, they require that other investment opportunities be put off, often for several years.

For information system implementations of this significance to succeed, the organization must understand why it is doing so and believe that success is essential.

Talented and committed leadership. Systems implementation and the related changes in the organization must be guided by senior leadership. This leadership must come from the board and all senior members of the administrative and medical staffs.

These leaders must have the ability to inspire and mobilize others to get things done. They must actively engage in changing the organization, and once committed, they must have the strength to thoughtfully stay the course. These leaders must ask hard questions about the systems and their implementation. And they must be pragmatic--superb practitioners of the art of the possible.

A partnership between the clinical, administrative and information technology staffs. Across the strata of the organization, many effective, multidisciplinary teams will be needed. These teams will design information systems, develop new ways to do the work, revise policies and procedures, craft implementation steps, develop training materials and create approaches to resolving inevitable problems.

Team members must view their efforts as a partnership. They must illustrate the attributes of high-performance teams: skilled, honest, dedicated, willing to compromise and focused on the overall goal.

Thoughtful redesign of clinical processes. The implementation of a clinical information system should be accompanied by an examination of care processes and efforts to redesign them to reduce steps,

errors and inefficiencies. Often, the desire to make such changes leads to the decision to pursue the clinical information system.

Effecting significant changes in care processes is difficult because staff and departments can lose power, behavior change is hard and process designers often have a limited ability to accurately envision a world that is much different than the one that they currently inhabit.

Nonetheless, it does not serve an organization well to automate ineffective and inefficient processes.

Excellent implementation skills. The implementation of complex information systems requires deep skill. These skills need to occur in two critical areas:

- **Project management** is needed to define, manage and monitor the large number of tasks, staff and resources that are being brought to the implementation. Good project management requires clear definitions of scope, well-reasoned delineation of tasks, astute assignment of accountability for task performance, flexibility in addressing problems and necessary changes in direction, and the ability to identify and resolve problems.
- **Support** is the set of activities that causes an application to "stick," that is, to become an integral part of the fabric of practice. Support includes training, responsive enhancements, ongoing communication, discussion of status and problems, and crafting the evolution of clinical policies and procedures.

Good to excellent IT. No information system is perfect, and users will find limitations in any clinical information system. Nonetheless, the applications need to be good enough to support the work that needs to be done. These systems must be able to handle critical changes in functionality that are required to address desired workflow and reporting needs. These systems should improve the work lives of providers rather than hinder them.

The IT infrastructure needs to be well-designed and supported. Slow response time and uneven reliability can cripple a clinical information system implementation in a remarkably short time. There are few things as damaging to the credibility of an IS organization as wounded infrastructure.

In many ways, these success factors seem like slogans. Perhaps even trite. In an analogous fashion, a parent might be told that the keys to raising healthy and happy children are to love them, feed them, teach them and protect them. Such advice masks the true challenge of raising a child.

However, these factors have been demonstrated to be essential to the successful implementation of clinical information systems. They serve as a roadmap for the leadership of the organization. The organization would be well served, as it contemplates embarking on this journey, to examine itself and ask questions such as, "Do we have a strong vision and strategy? Is it well understood and embraced by the organization? Do we need to take steps to strengthen this factor?"

Many organizations would be better off taking time to strengthen these factors before they plunge headfirst into a complex and difficult implementation. And once strengthened, these factors must be continuously reinforced; they'll need to be present throughout the implementation.

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