A guide to a successful clinical information system implementation
Selecting a clinical information system (CIS) requires looking to the future and envisioning the system’s full potential within a healthcare enterprise. Enhanced patient care across all settings; system support in managing the health status of your patient populations; and tools to assist in the engineering of care processes are among key benefits. With the system selection process now completed, the key question becomes:

How do you get from here to there?

Achieving success with the CIS requires a roadmap from early planning through system ‘go-live’. This paper will help your organization get started in organizing and planning efforts. It's intended to present helpful strategies and guidance – tools which an organization can use or adapt in developing their own unique program for ensuring success with the new CIS.

There's a long list of activities that impinge upon the success of a CIS implementation. We'll focus on five of them:

- receiving buy-in from leadership through the development of a strategic plan
- ensuring healthcare professional engagement and buy-in through strong clinical leadership, healthcare professional involvement, and a solid plan for communications
- training healthcare professionals using programs that specifically meet the needs of the different users
- enthusiastic adoption of the CIS
- post implementation support

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Step 1: Strategic planning

According to Kathleen Gaffney, a Healthcare Business Transformation Specialist at Dimension Data, successful CIS implementations have buy-in from the executive team and key people involved in leading the execution of the strategy. ‘They’ll promote the CIS if they recognize that the investment in dollars, time, and energy is likely to pay off in the long term. The strategic plan can help ensure that they see the potential for the future. If the strategy hasn’t been defined prior to the system selection process, it certainly needs to be defined prior to moving into the implementation phase,’ she says.

The CIS strategic plan contains information that is of interest to the executive team including:

- How the project is aligned with the goals of the organization. For example; is the organization interested in enhancing patient satisfaction, expanding services to rural areas, avoiding admissions in the Emergency department or becoming part of an Accountable Care Organization?
- The business case for the project. This includes financial metrics such as cost/benefit analysis, ROI analysis and a payback period analysis. Data regarding the potential market size and competitive landscape can also be desirable.
- The clinical and technical tasks and resources needed to build, test, deploy, and support the CIS. This includes detailed information on activities, timelines, deliverables and milestones.
- Metrics to evaluate features such as quality, utilization, performance, impact and satisfaction, as well as other success criteria.

Gaffney cautions that a clinical system won’t be successful if healthcare professionals believe they have the option of opting out of using the system. Therefore, the executive team must continuously communicate their support for the clinical system and their expectations of the clinical staff in regards to usage of the system,’ she explains.

Step 2: Healthcare professional engagement

Integrating a new CIS into patient care workflows and ensuring widespread acceptance is a significant undertaking. A well-coordinated implementation plan in which healthcare professionals are actively involved in decision making from the start will lay the groundwork for healthcare professional utilization and satisfaction with the system.

Implement a leadership network

An effective structure for setting expectations, facilitating communication, achieving buy-in and coordinating tasks across facilities, departments or services areas is the creation of a governance structure that includes a multidisciplinary advisory committee and clinical steering committees.

The multidisciplinary advisory committee ensures that the needs of all departments are considered during planning and implementation phases and interacts regularly with executive and senior management in Administration and IT. It includes members from each major facility, department, and service area.

The steering committees consists of a specific clinical group – physician, nurses, laboratory, etc. who act as the voice of that group when discussing new clinical protocols, workflows, alerts, product configuration, screen design, training, security, and other group specific decisions. Their role is to ensure that the clinical system supports and enhances the patient care process for the healthcare professional, patient and family members.

Throughout the planning and implementation phases members of both groups will continually monitor and perhaps reset expectations, as well as work to build the enthusiasm of their fellow co-workers.
Recruit clinical champions

Gaffney believes that dialogue is perhaps the most effective means of spreading enthusiasm and encouraging healthcare professional acceptance of the system. Consistent communication between healthcare professionals, administration, and information services ensures that the information system appropriately addresses the needs of clinical users and specific care settings,’ she explains. An effective strategy for facilitating this communication is the appointment of one or more clinical champions. Many organizations create both nurse and physician champion positions. Champions are individuals who are recognized as leaders among their peers and who recognize the value of the CIS being brought into the organization. They are the agents of change.

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The champion plays a key role in garnering nurse, physician and other healthcare professional involvement, a process which is best started during the selection phase of the CIS. Their role is:

- enhance and encourage communications among clinical staff
- help shape the implementation plan
- facilitate the identification and resolution of issues that impact patient care and healthcare
- involve and assist the clinical staff in reengineering work processes to facilitate care delivery, and improve quality and cost effectiveness though the incorporation of the CIS into the clinical workflows

Methods of recruiting a champion vary. For example, it may be that the Chief Medical Officer, Chief Nursing Officer, Chief Executive Office, and the Chief Information Officer identify the candidate. Or, if the organization has a Chief Medical Information Officer, that individual may become the champion. In other instances, healthcare professionals are encouraged to apply for the position.

Given the challenges that may come from being part of implementation planning, formal leadership training is recommended for the champion. Suggested areas of focus for leadership development include:

- change management
- Lean Six Sigma for workflow
- communication strategies for meeting facilitation, interpersonal and group communication, and conflict resolution
- project management

Communication

Communication efforts need to address the specific interests and needs of each audience. An important area of communication centers on how the CIS will benefit healthcare professionals in the delivery of patient care. Realistic expectations regarding system capabilities also need to be reinforced. In today’s rapidly changing healthcare environment, information systems assist healthcare professionals in:

- enhancing the quality of patient care
- improving efficiency in delivering care
- controlling healthcare costs
- improving patient care work processes

Additionally, leaders help plan and communicate what’s happening throughout implementation – key milestones, upcoming events, etc. Other important communication activities are setting and resetting expectations, and addressing fears or issues that will arise. A variety of options exist for getting the word out about the CIS project; newsletters, employee websites/blogs, email, digital media, and demonstrations are a few ways of communicating about the project. Formal and informal surveys are a communication vehicle for receiving feedback from employees and can help administration determine if expectations have been realistically established and whether or not fears and issues have been adequately addressed. Communication should be ongoing and not occur just before the system ‘go-live’.

Healthcare professional input

It’s imperative that throughout the planning and implementation of the CIS as many healthcare professionals as possible are exposed to the system and that their input is gathered and used in system design and workflow processes. ‘Not only does this ensure that healthcare professionals’ needs will be addressed, but it helps build enthusiasm and acceptance of the system,’ says Gaffney.
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Step 3: Training program

Widespread success with the CIS rests in large part with a successful training program. The development of a strong program begins early in the implementation process and is closely coordinated with key implementation activities. The four key milestones for a training program are: planning, curriculum development, trainer training, and end-user training.

‘Many CIS vendors provide training program guidelines but each healthcare organization is different and should determine the appropriate strategy for meetings its specific training goals and needs,’ says Gaffney.

General design guidelines

Some general guidelines when designing a program:

• Each user type - nurses, physicians, pharmacists, etc. is unique and requires a training program that is specifically designed for them.
• Identify early adopters with good technology skills and enthusiasm for the CIS. For these users, the training sessions should offer an overview of basic functionalities and move quickly toward a demonstration of the more complex functionalities and their practical application.
• Late adopters fall into two categories; those who are less skilled in technology and those who are concerned about possible negative impact of the CIS on patient interactions and clinical processes. The first group should receive training focused on mastering basic functionalities and then be partnered with mentors who can introduce them to advanced functionalities. The second group’s training should cover basic functionality and then focus on utilizing the CIS system within the clinical workflow.
• The late adopter may identify problems with the system design or workflows during the training program. It’s critical to use this feedback to improve the system design and training program.
• All data and scenarios used in training should be realistic and reflect how the system will look at ‘go-live’.

• Provide training as close to the ‘go-live’ date as possible. Depending on the total number of staff that needs to be trained, the scope of the training and the delivery method, this could be as early as four weeks before ‘go-live’, especially if classroom training is used.

Training team

The training team is identified at the onset of implementation. Typically this team is responsible for all end-user training. Members of this team can include members of an existing internal training/education group, IT personnel, other healthcare professionals, and outside contractors/consultants. Trainers must be knowledgeable about the CIS and also have a strong clinical background, understand practice patterns, be familiar with protocols and workflow, and be able to articulate the reason behind why system designs decisions were made.

This team is tasked with achieving key objectives for training including efficiently utilizing training time, increasing the number of proficient users of the CIS, and creating a high level of enthusiasm for the CIS. They’ll do this by developing answers to the following questions:

• How many users need to be trained?
• Who are the early and late adopters?
• What components will specifically address the needs of the different user types?
• What is the training timeline?
• In what form will the training take place?

Training methodologies

A program that integrates multiple training methodologies is suggested as people have different learning styles. Classroom or instructor led training, virtual training, self-led training, and just-in-time training are a few.

In many organizations, facilities and employees are spread across large campuses or even in different cities, which is why virtual training has become so popular. It reduces the need for trainers and students to travel, provides flexibility in scheduling training, and allows more students to be trained at one time. Virtual training can consist of live, recorded, or demonstration-based training sessions.

• Live virtual training sessions provide a classroom training experience and allow for active communication between the trainer and the student.
• Recorded virtual training is a recording of a live virtual training session. Recorded video training provides the end user with the flexibility of receiving training at their convenience and an added benefit of acting as a refresher course to be taken right before ‘go-live’ or even during ‘go-live’. Students also receive the benefit of hearing questions and answers from the live session.
• Demonstration-based video training is a prepared training session consisting of PowerPoint and how-to demonstrations. This type of training is great for communicating small amounts of information in short periods of time; say two to five minutes. Individuals who avoid a one-hour training program may watch a five minute demonstration and, once interest is sparked, may seek out other training opportunities or continue learning the system on their own.

All three types of virtual training should immediately be followed by hands-on exercises to provide the student with opportunities to practice what they learned in the virtual training. All hands-on exercises should be performed in a training system environment so as not to impact any of the tailoring or testing activities of the implementation team.

Just-in-time training may also be utilized in a well- designed training program. With this type of training, the user receives training at the exact moment he or she decides to use the system. Super-users who are system experts and who work throughout the organization can help train users on the fly. This approach is commonly used with physicians. Another helpful methodology is job aids such as ‘cheat cards’ that can be placed in a pocket or kept close to the workstation.
Step 4: Enthusiastic adoption of CIS

The CIS has to be adopted to the extent that it becomes a normal part of the clinical workflow. CIS should be just another part of patient care operations.

Unfortunately, some organizations are seeing little to moderate adoption of the CIS. Organizations need to do more to reduce the non-usage and maximize the value of these systems. Knowing the factors that influence a healthcare professional’s decision to use or not to use a CIS provides an organization with insights into ways to encourage members to adopt usage of the system.

Adoption strategies

Common sense and experience tell us that CIS acceptance and adoption is related to system ease of use, level of user skills, healthcare professional’s comfort using the system in front of patients, support from colleagues, and the perceived positive impacts. Additional understanding of the dynamics of CIS implementation provides insight into how else one can further encourage healthcare professionals to adopt CISs.

David Fagan, Chief Operating Officer of Dale Carnegie Training recently stated that employee engagement increases when four emotions are present: enthusiasm, confidence, empowerment, and inspiration. An organization that fosters these emotions around the CIS will be in a better position to drive engagement. This can be done by implementing a leadership network, fostering open communication, leveraging early adopters, and incorporating healthcare professionals’ feedback into the program.

A study regarding physician adoption of IT systems identified two important findings that an organization can leverage to increase adoption. The first is that physicians don’t want colleagues whose opinions they value to think of them as resistant to technology of proven value. The second, is that it's also important to them to keep up with professional leaders in their communities. This tells us that peer pressure and competition will encourage healthcare professionals to adopt CISs.

Monitoring adoption levels

Gaffney believes that an organization should continuously monitor the usage of the CIS to maximize its adoption. They can do this by tracking the proportion of healthcare professionals that are using the CIS and the extent of usage. They also need to analyze the factors that differentiate healthcare professionals who use the applications from those who don’t. This could involve comparing user and non-user data such as demographics, the profession, primary care or specialty, the type and size of the user organization (i.e., hospital or independent medical practice), and the degree of the healthcare professional’s attachment to, or identification with, the organization.

Organizations can also monitor how healthcare professionals are using the CIS to assist with their everyday tasks. Findings can be used to make changes or enhancements to the system or the associated process which will greatly increase satisfaction with and result in greater use of the CIS,” adds Gaffney.

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Step 5: Post implementation support

Healthcare professionals rank the need for training support during implementation and post go-live as the most critical task to a successful EHR. But many organizations underestimate the amount and degree of post go-live support needed. On average end users will need more than six months to adapt to the new system but it is reported that 61% of healthcare organizations maintain on-site support for 30 days post-implementation or less, suggesting that some end-users aren’t receiving the support they need.

Step 6: Conclusion

While there is no single right way to ensure a successful clinical system implementation, the strategies presented in this paper have proven effective for many healthcare organizations. We hope that this information will prove helpful to your organization as well.
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