CPR Systems: Which One Is Right for Your Organization?

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A computerized patient record (CPR) system benefits a healthcare organization in many ways. Just a few of these benefits include:

- increased quality of patient care
- reduction in paperwork
- improved work flow processes
- immediate access to real-time information
- higher quality of documentation

These benefits merely cover the basics of what the CPR has done for health information management. In addition, they have vast reporting capabilities, a vital aspect of increasing office efficiency. This leads to more effective use of healthcare resources, as well as improved information supplied to accreditation organizations.

With so many systems and vendors in existence, where do HIM professionals begin in selecting a CPR system? The task may seem daunting.

Although vendors may imply that a CPR is a shrink-wrapped product that is immediately available for implementation, this is not the case. In reality, there is no one CPR solution for all organizations. Before thinking about what system is best for your organization, you must develop a strategic information management plan. Participants in three consecutive HIMSS/Hewlett-Packard leadership surveys ranked "lack of a strategic plan" as one of the most frustrating problems they encounter. Choosing the right CPR system requires careful planning and selection. To begin the search, the organization must create a needs assessment to establish the functional needs of the organization. This requires a comprehensive review of the operations within the organization, focusing on the administrative and service information systems and requirements.

The planning, selection, and implementation of a CPR is a process driven by strategic vision—a vision that must be well defined in a strategic plan. Organizational vision provides a blueprint for the direction your organization wishes to pursue. Furthermore, it will differentiate your organization from others. As a result, the selection of hardware and software will be based on an overall understanding of the organization's mission, goals, and daily business process requirements.

All of the key players in your organization must be convinced of the need for a CPR and committed to the lengthy process required to implement it correctly. This commitment will help ensure a successful process.

The Development Decision: Create or Buy?

Once the strategic plan is created, the decision must be made as to whether or not the organization wants to purchase a pre-built system or develop an in-house system. Key factors influencing the decision include:

- costs of in-house development vs. system acquisition
- exceptional or specialized requirements of the industry or the organization
- the number and quality of available software packages
- the amount of time needed for in-house development versus the time needed to evaluate, select, install, and modify a package
- in-house staff skills and time availability
- flexibility of the system specifications
- proprietary or confidential information associated with the organization's systems

Depending on the answers to these queries, a healthcare organization may opt to create and develop its own system. However, an organization that chooses to outsource the project would need to move to the next step: evaluating various systems and vendors.

Smart Shopping

If and when the decision is made to purchase a system, software packages and vendors must be evaluated. When looking at software packages, the following considerations should be made:

- Do the features of the package match the organization's needs?
- Does the system's functionality meet regulatory requirements?
- Does the vendor use standard development tools?
- Does the ability to modify or customize the system exist?
- Does it interface with existing systems?
- What is the relative currency of the software?
- What are the hardware, network, and platform requirements?
- What is the interoperability with the facility's current hardware?
- Are add-on products available?
- What is the number of users the system can support?
- Does it provide concurrent access by a large number of users?

When evaluating a vendor, some important considerations include:

- vendor reputation
- levels of service and support
- stability of the vendor and vendor work force
- experiences of other customers
- expectations of future related products (e.g., new versions, upgrades)
- financial solvency of vendor
- product upgrade history
- hotline support
- testing and benchmarking periods provided

It is crucial to have high levels of hardware and software support, not only during implementation, but also after installation. An important step in finding this information involves talking to other customers to determine whether they are satisfied with the support provided by the vendor. Some key components of user support include:

- quality of the GUI
- availability of training
- type of training (online training vs. face-to-face)
- quality of online help
- level and quality of the systems design
- sufficient implementation documentation

Be sure to find out whether the vendor provides training for new hires in your organization. If the system is simple enough to allow training by internal staff, this may be unnecessary.

Making the Grade

A set of evaluation criteria to provide a framework that describes and evaluates CPR systems projects was developed by the Computer-based Patient Record Institute (CPRI) Work Group on CPR Systems Evaluation. According to the work group's evaluation, "The intent is to provide a structured approach for assessing and describing significant CPR project efforts, rather than defining what specific attributes and achievements define 'success.' The criteria are grouped into the following four categories:"[1]

- *management*—addresses strategic planning, implementation, operation, and evaluation processes that guide the CPR systems project
- *functionality*—looks at users of the CPR systems and their information needs to determine the process for identifying and prioritizing functional requirements and evidence that user needs are being met
- *technology*—focuses on the technical design of the computer system, security and data integrity, use of standards, and system performance
- *impact*—looks at quantitative results in regards to the impact of the system on the care recipient, with particular concern for access to which information is needed for direct care, research, and other purposes, as well as the processes and outcomes of care delivery[2]

The work group also developed various scenarios that describe CPR systems. Their purpose is to illustrate the threshold criteria for a qualifying healthcare provider, and act as a resource "for strategic planning, requirements descriptions, and creating test sets for live systems demonstrations."[3]

Utilizing the CPR Project Evaluation Criteria guidelines, vendors and systems can be evaluated based on the four categories previously discussed: management, technical, functional, and impact. Form groups to evaluate these components via vendor demonstrations, presentations, and discussions. For instance, evaluation of business and functional capabilities of the CPR may be performed by various user groups. Remember to make technical comparisons between vendors to ensure that the system meets technical requirements. Features to look for when evaluating CPR systems include:

Security

Perhaps the most important feature of a CPR system is the need for proper security and access mechanisms to ensure patient confidentiality. Multiple security access levels should be employed. As more security options are implemented, the level of security that can be attained is increased. However, each additional security provision requires an increased level of complexity, administration, and cost. Each organization should implement security at a level that satisfies the needs of the organization, information systems, and the end users.

Compatibility

Ancillary systems (e.g., laboratory, transcription, scheduling) must be interfaced and/or integrated with the system. The system must be compatible with other departments and sites such as outpatient clinics. Information should flow quickly and seamlessly between the various departments in the healthcare institution. The health record should also have the ability to link to the institution's billing system.

User Friendliness

It is imperative that clinicians, physicians, and HIM staff have a high comfort level while using the system. User interfaces that incorporate simple keystrokes and mouse movements and/or touch screens will provide quick and easy usage. And software that is designed with the "look and feel" of the paper chart will make for an easier adjustment for providers.

Portability

The usage and incorporation of hand-held PCs and smart cards are tools that should be considered by the organization when selecting a CPR.

Storage

The CPR system must have the ability to store and back up the patient's record electronically and ensure that no data is lost. The system also should be able to handle power outages and natural disasters with no loss of data.

Remote Access

The ability to log on to a network from a distant location should be considered. The need for Internet access, along with the growing trend of telecommuting, are putting more demands on the need for remote-access equipment and management.

Ad Hoc Query and Reporting Capabilities

With the advent of more regulatory and accreditation reporting requirements, the system should provide the ability to create customized queries and reports.

Costs

When comparing prices between vendors, make sure each vendor is offering comparable features and options. There are, of course, a broad range of costs associated with the purchase and implementation of a system. The single largest cost will most likely be the investment in the system hardware. Other costs include software licenses, training and implementation, hardware and network support, and software support.

A Bit of Advice

Because the CPR field is still new, many companies are continuing to test the waters. Though it may be difficult to do, it is important to find a system that has a proven track record for performance. It is also important to remember that when you are looking for a CPR system, you are not only purchasing the system, you are also entering a relationship with the company that supports it. Visit sites and talk to customers who have the system in place—again, this is a crucial step in selecting the best system. The final choice should be based upon the product and the level of support for working through the challenges of CPR implementation.

Notes

1. "CPR Project Evaluation Criteria, Version 2.2." The CPRI Work Group on CPR Systems Evaluation. Bethesda, MD: July 1998. Version 2.2 criteria and CPR Project Scenarios are available for a fee. For more information, call CPRI at (301) 657-5918, or go to www.cpri.org/resource/cpri_products.html.
2. *Ibid.*
3. *Ibid.*

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