



## Clinical Informatics in Physiatry

# Electronic Health Record Transition Considerations

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### Abstract

After an initial phase of electronic health record (EHR) solutions for both independent practices and larger health care organizations, we are now entering a period in which transitioning between EHRs is becoming more common. Many of the decisions and implementation processes for an EHR transition are similar to those encountered during the transition from paper records to an EHR. Detailed project planning and management are essential to keep the effort on track and within budget to a successful conclusion. One major difference between the 2 situations is the possibility of migrating patient data by using automation. Understanding the implications of structured and unstructured data to manage the data migration between EHR systems is important to ensure success of the effort. Access to legacy data after the transition for both patient care and release of information to external parties is also critical to understand and manage proactively.

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### Introduction

During the last 10-15 years, provision of medical care in the United States has transitioned from primarily paper-based systems to the use of electronic medical records (EHRs). Although there were facilities that pioneered the use of EHRs before 2000, these were minority cases. Through the economic and regulatory stimuli provided by the HITECH Act, Meaningful Use program, and quality reporting requirements such as the Physician Quality Reporting System (PQRS), there has been a rapid adoption of this technology so that now use is nearly universal [1-3].

After an initial explosion of vendors offering EHR products resulting from the rapid adoption of Meaningful Use, we are now in a phase of vendor consolidation. In some cases, this has been through acquisitions and mergers, and in other cases vendors have gone out of business. This has resulted in both physician practices and health care systems seeking to replace their EHR [2-5]. Another consideration for all venues of care is the realization that expertise for the technical support of the EHR infrastructure may not be readily available within the organization.

Recent market offerings like Software as a Service (SaaS) have emerged to address this issue. SaaS is in short software that is provided on a subscription basis and accessed through a Web browser interface. SaaS is

one of the foundational components in the recent adoption of cloud computing. Recent dissatisfaction with EHR usability and ever-increasing regulatory requirements are factors likely to continue the trend towards EHR replacement. Improved billing and a more efficient revenue cycle with newer technology is a consideration [4]. The focus on value-based payment and population health management that the era of Medicare Access and CHIP Reauthorization Act/Merit-based Incentive Payment System (MACRA/MIPS) will bring makes robust electronic systems that can support the necessary analytics to understand an organization's business essential to survival [6,7].

There is scant peer-reviewed literature to inform the process of EHR transition [5,8-10]. A recent panel discussion at the American Medical Informatics Association highlighted this trend towards conversions [11]. Otherwise, guidance is available through engaging external consultants. An Internet search readily will produce a number of firms offering this service. Most of those firms offer guides regarding how to approach EHR transition, but these are proprietary documents available once the firm is engaged.

### Decision Making Regarding EHR Transition

Simply put, the decision to transition to a new EHR comes down to realizing that the status quo has become

untenable in some manner. Given the initial investment in adopting an EHR, sunk costs in hardware and ongoing maintenance, and the disruption in making such a change, it is understandable that most organizations, whether small practices or large integrated health care networks, would prefer to avoid a transition. The current EHR vendor, however, may be going out of business, be unable to react quickly enough to regulatory changes, or be anchored in technology that cannot support more modern patterns of practice such as use of mobile devices. It may be that a multispecialty practice or larger organization has grown through practice acquisition but now is unable to communicate between disparate EHRs that the individual entities brought with them (ie, lack of interoperability). The costs of maintaining multiple systems may no longer be sustainable as reimbursement models change. Whatever the driver, the decision to consider a transition has been reached.

Once the organization seriously is considering a transition, the process is quite similar to that used in initial selection and implementation. Determining required and desirable functionality, narrowing the slate of potential candidates, in-depth investigation of final candidates, and contract negotiation are essentially the same as with initial EHR implementation, although at this point the organization will probably have greater internal expertise to guide the process. This paper assumes that background is understood [12] and will focus on the specific issues involved in transitioning from one EHR to another.

### EHR Transition Process

The initial consideration is whether the transition project will be managed with the use of internal or external expertise. By definition, an EHR transition entails switching from one electronic-based process to another, which implies some degree of internal expertise in use and management of the EHR. The scope and effort of transitioning between systems, however, can approach that initially encountered in the transition from a paper-based system. An honest assessment of whether the ability to manage the transition exists in-house can be supplied by the new EHR vendor or needs to be engaged through a third party is effort that will pay off over time. The process of project management per se is beyond the scope of this article. The discussion that follows assumes typical industry project management techniques are in place. The general steps in this process are outlined in [Table 1](#) but is not a substitute for the robust project management that would be required to keep an EHR transition project on track.

The transition between EHRs is an opportunity to assess how the business is functioning and identifying opportunities for improvement. Just as automating suboptimal paper-based systems usually fall short of achieving expectations, replacing one automated

**Table 1**

Electronic health record transition steps

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- Assess need for external project management
  - Workflow assessment
    - Current state analysis
    - Desired future state analysis
    - Gap analysis
    - Stop-start-continue plan
  - Develop data migration plan
    - Identify structured and unstructured data elements
    - Profile structured data to determine quality
    - Determine extent of unstructured data to migrate
    - Define process for data migration by data type
    - Monitor data migration for accuracy
    - Provide solution for access to legacy data
    - Formal definition of the legal medical record
  - Build and testing
    - Unit testing
    - Integrated testing (may be 2 iterative events)
  - Implementation
    - Training and go-live support
    - Track success factors
    - Remediation of go-live issues
- 

system with another without careful analysis and transition planning will not achieve the expected outcome. This analysis should start with carefully capturing the current state of patient care processes throughout the entire engagement, from scheduling through the revenue cycle. It is important to understand what is really happening in the current state, rather than what was expected after the initial EHR implementation. Variations in use of the current EHR are likely, particularly in multisite organizations. These variations can have profound consequences in whether it is possible to migrate data between systems and must be understood.

Next, the desired future state should be specified. The first step in defining the future state is an assessment of the current state in as much detail as feasible. It often is apparent to the clinic management and staff that some present processes are suboptimal. One challenge in this exercise is that some steps in the current state will have developed over time without being explicitly defined or articulated. Diagramming the current workflows will help ensure they are captured completely. Often, this is an iterative process until agreement is reached regarding the current state. Aspects of the current processes that cannot change in the future state also need to be specified. Furthermore, being able to capture additional information for patient care or process improvement may have been already identified as a goal. The desired future state is then outlined, again diagrammed with as much detail as possible. This will be a combination of changes in process possible through additional functionality the new EHR brings and nontechnological improvements in workflow identified as needing improvement in the current state assessment. For example, if the new EHR allows capturing information as structured data from a

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