REDOX^

Working with EHR Vendors

How to Plan your Integration Projects with EHRs

No two EHRs are the same, even when they're sold from the same vendor. This system variance can make it difficult to forecast integration projects accurately—unless you understand the nuances of each system.

In this guide, we'll cover the basic differences among the most common EHR vendors and explain how they can impact integrations and project timelines.

At Redox, our goal is to help your team integrate your product more efficiently with a wide variety of EHR vendors—without requiring significant vendor-specific changes to your product. However, when it comes to selecting and kicking off a project, it's important to know that there are some key nuances in vendors that may impact timelines and development options.

There are three main categories of EHR vendors: Enterprise EHRs, Clinic-focused EHRs, and Niche EHRs. Let's dive into the commonalities—and the key differences—between each.

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Enterprise EHRs

Examples: Cerner, Epic, McKesson, Meditech
Common Integration Methods: HL7, API, FHIR

Enterprise EHR vendors typically have products that can be used across the entire spectrum of patient care—clinical (outpatient, inpatient, emergency), patient access (scheduling, registration), revenue (billing), and many more. Given the breadth of workflows and business areas these systems cover, it's fairly common that they have a full suite of HL7 interfaces already available that can be leveraged for your Redox integration project. Enterprise EHR vendors may also have API or web service capabilities that can be used depending on your workflow and integration needs, but not all enterprise EHRs provide this method of integration in a robust manner.

Usually, the health systems that use enterprise EHRs have their own IT staff that is responsible for handling any work that needs to be done with the EHR or interface configuration. However, if you're doing a complex integration, building a brand new interface, or running into issues that the local IT team can't resolve, they may pull in the vendor for additional support. In many situations, this support is a part of the annual maintenance fees that the health system is already paying. However, if a significant amount of work is needed from the vendor, such as installing a new interface, there may be additional costs the health system incurs.

Many health systems using these EHRs are extremely well versed in HL7, but their knowledge and implementation of other integration methods such as APIs or FHIR can range from expert to novice. If necessary, they may choose to implement new integration methods to support your product, which may require involvement from the EHR vendor to either enable new features or to support and train the local IT team on the set-up. These may lengthen your install timelines.

Clinic-focused EHRs

Examples: *AdvancedMD, Allscripts, Athenahealth, drchrono, eClinicalWorks, Flatiron, GE Centricity, Greenway, Kareo, NextGen*
Common Integration Methods: *HL7, APIs*

Clinic-based EHRs tend to get the majority of their business from clinics that only require a basic outpatient EHR. This allows them to provide a lower cost product with a smaller set of functionality. Clinic-based EHRs may be used in conjunction with an enterprise EHR at health care organizations, particularly ones that are going through a merger or acquisition process where systems have not yet been consolidated. Additionally, independent practices that don't have a dedicated business relationship with a particular hospital or health system often choose one of these lighter-weight EHRs.

Because the workflows that need to be performed are mostly done from start to finish within the clinic, it's less common for these practices to have experience with integration. From a clinic perspective, one of the benefits of these systems are that they often only need limited, or no, local IT staff to support the EHR. This means that they often need their vendor involved to start (and complete) any integration project, especially if it involves workflow changes within the EHR system.

Clinic-focused EHRs further break down into two categories: EHRs who primarily use HL7, and those that have APIs available. For EHRs that use HL7 as their integration method, you can expect that there will be costs that the clinic will be charged to implement the needed interfaces. For EHRs that have an API, you may be charged to have access to their documentation and based on their fee structure.

Primarily HL7

Examples: *eClinicalWorks, GE Centricity, Greenway, NextGen*

In Redox's experience, the example EHRs above usually have HL7 as the primary option to complete a non-real-time integration, but they may also support other non-real time types of integrations such as SFTP. Many of these EHR vendors have reported plans for API or web-service-based integrations in the future, though timelines and available functionality is still very unclear.

Clinics using these EHRs often have limited interfaces already installed, if any, and they typically need to initiate a work order with the vendor and receive a price quote or statement of work on the interface to be completed. For the majority of practices using these EHRs, they are aware of the process to follow and the potential charges they may incur to implement the EHR-side of the integration based on the terms of their contract with the vendor. After the quote or statement of work is signed by the clinic, the EHR company will assign a resource to complete the interface installation who will be the main point of contact for any interface work that needs to be completed.

There may also be a mix of vendor and health system resources that will be responsible for any configuration that's needed within the EHR, which often increases the timeline of the project. If you're using Redox, our team of integration experts helps facilitate these conversations and assists in filling out information about the integration requirements. Additionally, our experience working with these vendors means we have a solid starting point created to match their base specifications and can conform to the vendor's preferences.

This flexibility often reduces the amount of interface configuration that the vendor needs to complete, allowing the project to move more quickly.

APIs Available
Examples: *AdvancedMD, Athenahealth, Allscripts, drchrono*

These EHRs are more likely to exclusively use a vendor-specific API to integrate with their product. Vendors that have robust APIs typically prefer that method of integration, as the technical lift is significantly lighter for both them and their health system customers. In some cases, you may find that you need HL7 in order to achieve specific components of your integration. When this happens—and HL7 is offered by the EHR—the process outlined in the HL7 process from the previous email typically applies to these groups as well.

In order to connect to the vendor's API, you'll need to start by having the health system grant you access to their system. In some case, the health system will have to initiate the request and in others you will need to make the request through the vendor's API process and wait for approval from the health system. Your health system counterparts are typically familiar with this process and can always reach out to the vendor with questions. Once the vendor processes the clinic access request, they will provide authentication information, such as a URL or password, that will be used to complete your connection to the EHR.

One of the tricky parts of going between different vendor API programs is that there aren't really any standards across EHRs. You can expect different authentication methods, different formats ranging from JSON to XML, and different capabilities. What is a single call in one EHR may be multiple calls in another.

Redox is designed to help abstract away this differences so that you don't need to continue to change your product to meet the variances across EHR APIs. For EHR vendors that Redox has connected to previously, we already have the appropriate credentials needed to move forward with the connection. For vendors that we haven't worked with before, we do the scoping work for you via vendor-provided specifications or a call with the EHR vendor.

In some cases, the vendor may also require you to sign up for their API services or offer optional programs that can allow you to initiate the integration project request, help get your project expedited, gain access to a sandbox environment, or provide dedicated support from the vendor for product marketing. If the vendor does require you to sign up for their API program, there may be additional fees involved that will be outlined by the EHR vendor. Some vendors use revenue share models and others base it pre number or type of calls.

One other key thing to note is that clinics using EHRs from vendors whose primary method of integration is APIs may not have a formal testing environment.

Niche EHRs
Examples: NetSmart, Orchard LIS, Phoenix Ortho
Common Integration Methods: HL7

In addition to the traditional EHR vendors, there are a number of specialized EHRs that you may need to integrate with. These may be EHRs that are used for specific services, workflows, or specialties. In our experience, some of these EHRs support HL7 or API integrations while others have limited or no integration capabilities and may need to complete EHR development in order to allow an external system to connect to their product.

For vendors that we haven't worked with before, we'll need to complete scoping via vendor provided specifications or have a call with the EHR vendor to understand their integration capabilities (and to identify any development needs required to facilitate the connection). Your Redox Sales Rep or Account Manager can let you know whether or not we have experience with the EHRs you're targeting.

Other Nuances and Terms to Know

Outsourced IT Teams
Some health systems choose to outsource their IT teams to consulting companies. From onsite and immediate support to ticket or work-order based support, there's a lot of variance in the types of contracts and relationships a health system has negotiated with their consultants. If the health system you're working with outsources their IT shop, work with your Redox contact to understand how the health system requests support and what their expected response timelines are.

Resellers
Some EHR vendors may allow their product to be sold by resellers. In these situations, the support for the EHR will go through the resellers and not directly to the EHR company itself. This can make getting the necessary support more time consuming.

On-premise vs Hosted vs Cloud
There are three primary methods in which EHR vendors deploy their software. An EHR vendor may offer only one option or all three.

> **On-premise:** The EHR software is installed on a server owned and maintained by the health system. This is a unique instance of the software owned and configured by the health system to meet their specific needs. This is the most common deployment method of enterprise EHRs.

> **Hosted:** The EHR software is installed on a server owned and maintained by the EHR vendor, but it's a server dedicated to that specific health system. For enterprise EHRs, this is usually a unique instance of the software owned and configured by the health system. For clinic-based EHRs, this can either be a generic version configured and maintained by the vendor or a unique version configured and maintained by the health system with assistance from the vendor. Hosted instances may have regional divisions that require their different connections.

> When a health system uses a hosted solution, there is usually a queue maintained by the vendor to address interface additions and updates. Each EHR vendor has their own process and timelines for working their queue. If you're working with a health system using a hosted EHR, work with your Redox contact to understand how the health system requests new interfaces and what the expected timelines are for the EHR vendor to complete the interface install.

> **Cloud:** The EHR vendor software is deployed from a central cloud server to all health systems using the product. While the health system has the ability to make certain customizations (such as list values or tables), the core features and functions of the software are deployed uniformly across all systems using the EHR. This is most commonly used by clinic-based EHRs.

Integrate Confidently

There are many nuances and variations across EHR vendors that must be considered when thinking about (and executing) an integration project. Though what we've outlined above covers a lot of information and accounts for the most common variations we've seen across our interoperable network, there will continue to be nuances and changes that can only be accounted for during project scoping.

Leveraging the knowledge of integration experts is the best and most efficient way to account for variation across systems. That's why partnering with us can help you navigate complex projects and make the best use of your time, resources, and talent.

Get more support

Whether you're working with us already or are brand new to integration, we're always here to answer your questions and support your integration project from kick off to go live and beyond. Reach out to us today or check out our website for more.

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