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Making the Most of Healthcare EHR Opportunities

eGuide

In the first part of our series on EHR applications, we looked at how electronic health records have changed the medical industry and redefined the relationship between physicians and patients. We highlighted some of the challenges facing EHR developers and how they can better position their software applications to meet the evolving demands of the healthcare market. For part two, we'll take a closer look at some of these opportunities and explore how the right software integrations can help developers build the next generation of EHR applications.

EXPANDING EHR FUNCTIONALITY

Since many EHR systems evolved from practice-focused EMR software, many of them have had difficulty adding the type of features that make true interoperability possible. The combination of the rush to expand the use of EHR platforms and the development heritage of those programs has also left many modern EHR systems saddled with a user interface that looks like it belongs in the early 2000s. One of the most frequent complaints leveled against healthcare applications is that they are unwieldy to use and difficult to learn. In fact, a 2019 study published by the Mayo Clinic even found that poor EHR UX-design is strongly associated with physician burnout.

As developers work to expand the features and capabilities of EHR systems, they need to keep in mind the specific needs of the primary users of those applications. Ultimately, an EHR platform is supposed to help healthcare providers deliver better care and allow patients to make better decisions regarding their health and medical treatments.

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IMPROVING EHR FOR PHYSICIANS

Physicians stand to benefit significantly from well-designed EHR systems. Healthcare interoperability should allow them to easily access the clinical and test information they need to make a better diagnosis and devise more effective treatment plans. They need technology that is fast and easy to use. If they want to call up a patient's medical history or test results, they should be able to access it quickly, without having to dig through multiple menus or folders. With that information readily available, physicians can make better decisions that are informed by a comprehensive view of the patient's health history. Ideally, they also shouldn't have to spend hours each day entering clinical notes into their EHR system.

IMPROVING EHR FOR SUPPORT STAFF

The ability to efficiently manage appointments, track insurance claims, and follow up with patients is essential for any successful medical practice. A good EHR system should enable office support staff to do all of this and more. Document management and data extraction tools that allow them to quickly and easily organize the various file types that flow into the office each day can streamline office operations significantly. Automating administrative tasks like scheduling and billing frees up valuable time to focus on other areas of the practice, such as providing a more responsive patient experience that improves retention, promotes better physician-patient communication, and generates better care outcomes.

IMPROVING EHR FOR PATIENTS

A huge selling point of the government push to expand EHR implementation was the idea that such systems would allow patients to easily access their medical records at any time, no matter which provider they were seeing. By simply logging into an online portal, they should be able to securely view physician diagnoses, lab test results, medical scans, and clinical notes from any provider they've visited.

This information should make it easier for them to manage their health over time. To help them make sense of their medical history and understand what options are available to them, patients also need access to various healthcare resources that provide valuable context and lay out potential next steps if additional care is required. Streamlining all patient-facing aspects of care, including billing, scheduling, and insurance information, will help patients to regard EHR systems as a "one-stop" hub for everything related to their medical needs.

EHR CHALLENGES FACING DEVELOPERS

Building a successful EHR application is a huge undertaking. These systems must be able to meet a complex array of regulatory requirements to ensure that confidential health information is not compromised, which makes them uniquely dependent upon their built-in features and capabilities. Due to the nature of the data they work with, EHR systems typically cannot turn to external solutions when additional functionality is required. Furthermore, they also need to be able to interface with other EHR applications to meet interoperability expectations.

When it comes to managing documents and images, for instance, there are a number of capabilities that can significantly enhance EHR user experience and security. They may not be the first features that come to mind when thinking about health records systems, but their absence can substantially undermine the viability of an EHR application.

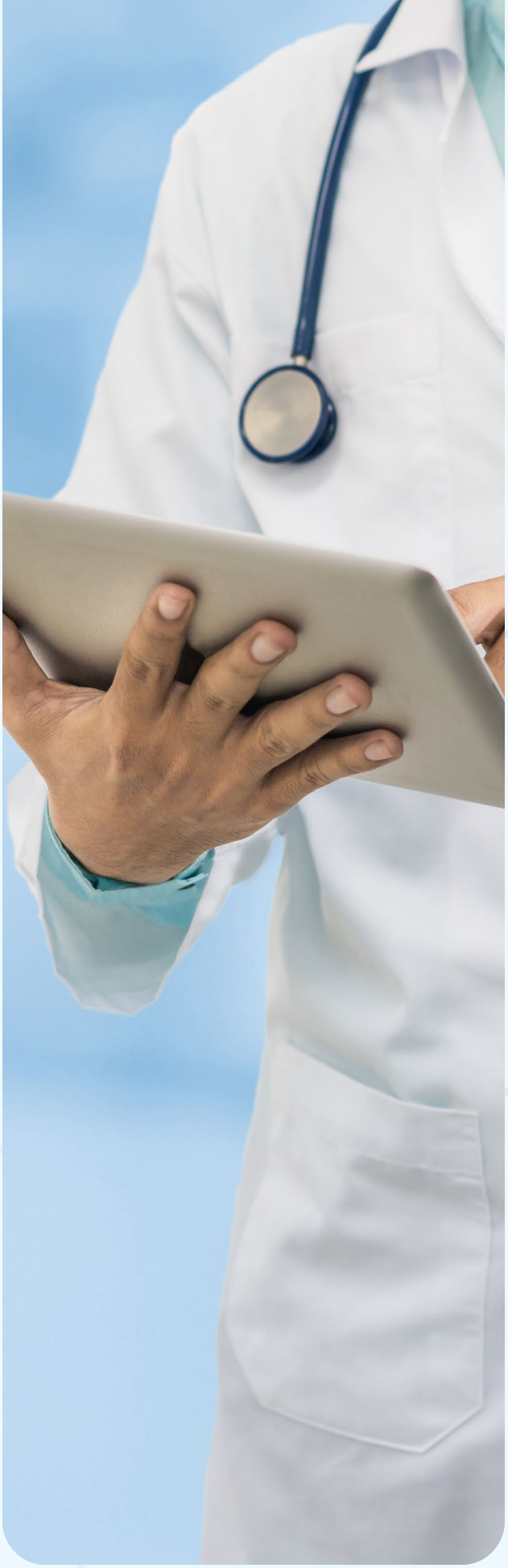
SPLITTING AND MERGING DOCUMENTS

Healthcare providers don't always receive documents the way they would prefer to get them. This is especially true when it comes to scanned copies of files. Several documents from a patient's medical records could arrive scanned into a single, multi-page PDF file. Assuming that the pages were arranged in the correct order (which is not always a given), someone in the office will need to go through the document and laboriously separate out each document manually.

In other cases, multiple pages of a diagnosis or other report may be sent individually, increasing the risk of pages being misplaced as they're moved through the system. With no way to fix these documents within the EHR system, support staff will be forced to rely on external applications to arrange them properly, which is both inefficient and potentially insecure.

Developers can help providers save valuable time managing these documents by incorporating splitting and merging tools into their EHR applications. Rather than copying and pasting or rescanning documents, employees can simply disassemble or reassemble them programmatically. This allows them to quickly consolidate patient records, combining relevant documents into a single, comprehensive PDF that's easier to track and manage.

Conversely, they can break out specific pages from a longer document and use it to create a new PDF, which makes it easy to send only the requested portions of a patient's health records to minimize how much private information is being shared at any time.



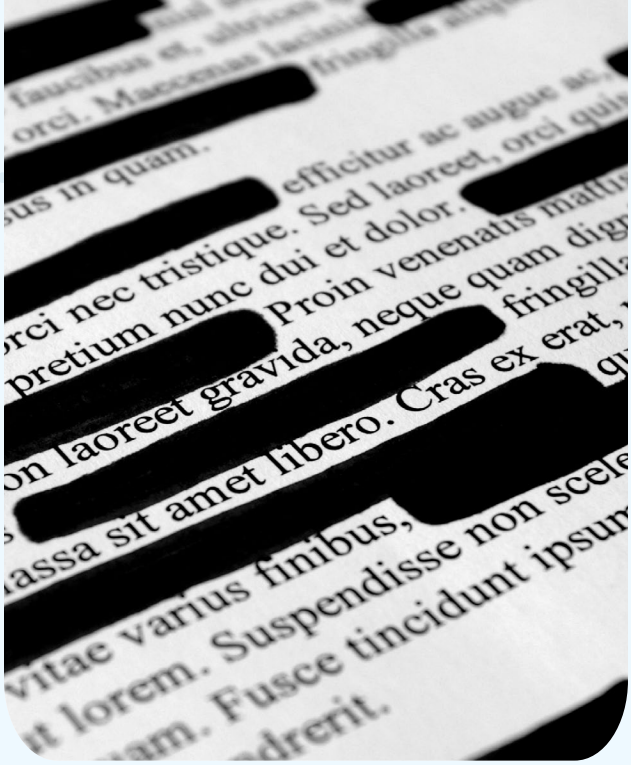
MEDICAL IMAGE VIEWING

Managing medical diagnostic images within an EHR has always posed challenges for providers. That's because EHR systems don't typically have strong support for DICOM files, which are the industry's standard format for high-resolution medical scans. These files are not only very large, but also contain patient data along with the information needed to render medical images.

Critically, Microsoft Windows doesn't recognize DICOM as an image format, which is why special software is often provided along with the viewer. For a physician who wants to quickly review a CT Scan or a patient who wants to look over their X-rays, it may not be possible to do so easily within the EHR system.

If the EHR has file conversion capabilities that support the DICOM format, developers can build a dedicated viewer that can easily open and display DICOM files. An EHR application can also be set up to route an incoming DICOM file's data and images into the practice's database for future reference.

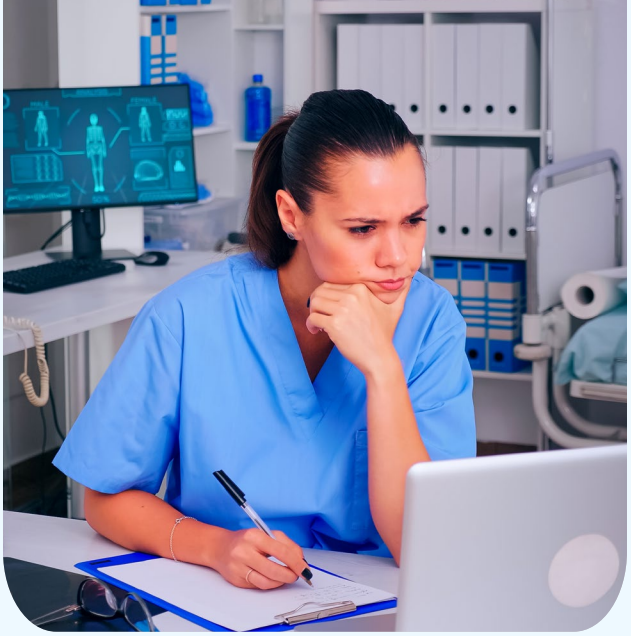
An EHR system with DICOM support can also compress these files to make them easier to transfer or convert them into smaller formats with very little resolution loss. This is critical for highly-detailed medical images, where even the slightest detail could reveal important diagnostic health information. Developers can also provide the tools to manage the header information in DICOM files, which is coded to specific images and contains identifiable patient data. Removing these headers is critical for anonymizing images in research studies.



DOCUMENT REDACTION

Protecting privacy is one of the foundational pillars of healthcare information technology. Although physicians and specialists need access to a patient's personally identifiable information (PII) during care, that privilege doesn't exist in perpetuity or extend to associates. If a physician wants to refer to a patient's medical situation in a presentation, for instance, or if they need to send test results to another specialist not involved with the patient's care for some reason, steps need to be taken to protect the patient's privacy.

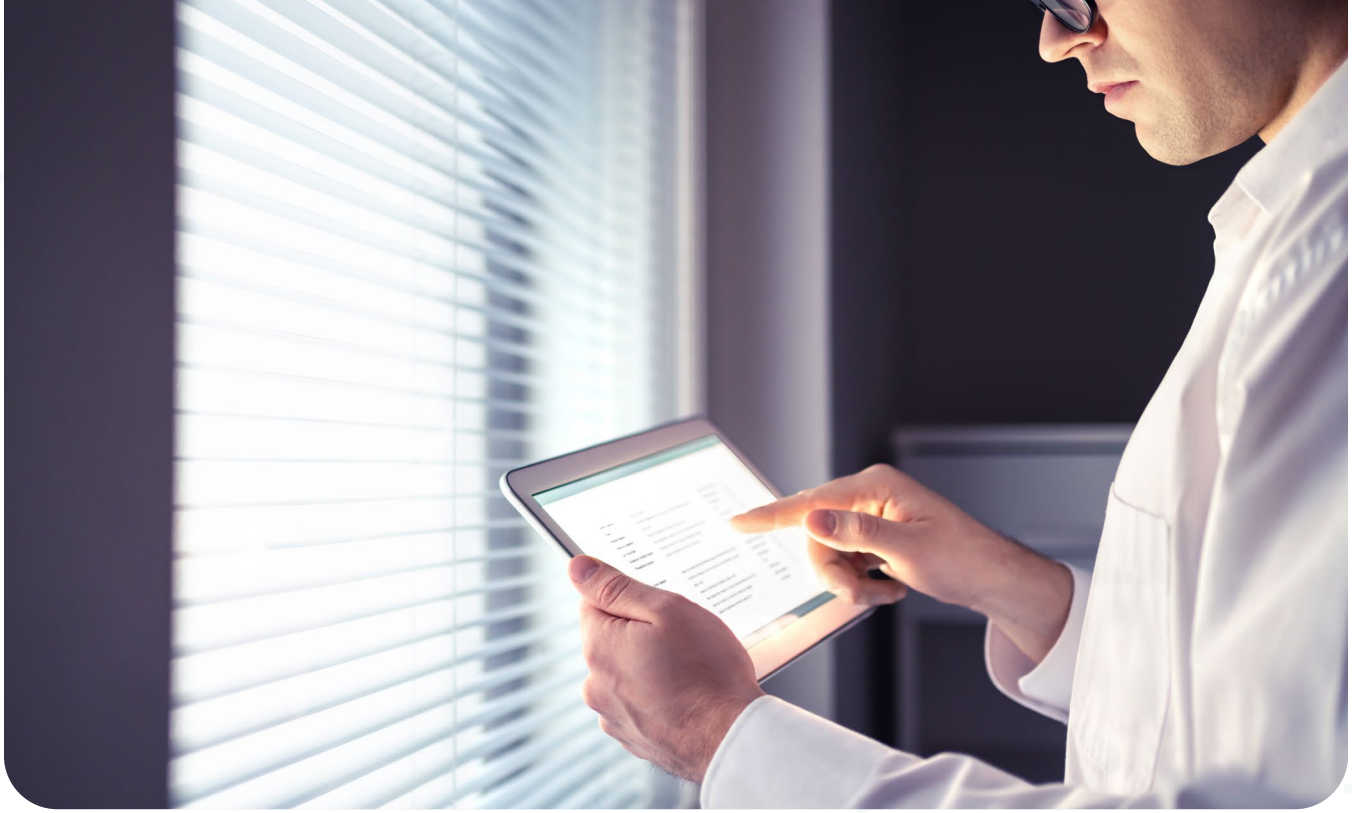
Incorporating redaction capabilities directly into the EHR system's document viewer is one of the simplest ways to ensure that confidential data remains private. Automated tools can be set up to redact obvious identifying information like names, addresses, or identification numbers, but they should also be able to be applied manually as well. This ensures that any detail contained within a medical record can be removed from the document before it's sent to another provider or EHR system.



DOCUMENT ANNOTATION

Providing medical care is an ongoing process that often requires significant communication between healthcare professionals. Whether it's making notes during a patient visit, indicating areas of concern on a medical image, or marking up documents and images for educational purposes, physicians can collaborate more effectively when they're able to make annotations on documents. Rather than creating an endless array of new documents with comments or changes, simply making an annotation that anyone who views the file will see immediately can greatly improve efficiency and enhance collaboration.

By integrating annotation features into their EHR applications, developers can provide physicians with a powerful communication tool that saves them time and improves clarity. The ability to share annotated medical images or test results with patients puts better information in the patient's hands as they're learning about a potential diagnosis. When that functionality can be accessed directly within the EHR, it's a simple matter for a medical professional to provide notes or instructions before passing documents and records along to the next clinician.



OPPORTUNITIES FOR ADVANCED EHR SOLUTIONS

As the EHR market continues to grow, developers must be able to identify opportunities to deliver enhanced functionality to platforms that make them easier for healthcare professionals and patients to utilize. Many of these features fall outside the expertise of many EHR developers, and building them from the ground up can pull valuable engineering resources away from working on the unique characteristics of EHR systems. By turning to SDK and API integrations, it's possible to quickly implement a broad range of specialized tools EHR users increasingly regard as "must-have" features.

DOCUMENT MANAGEMENT AND CONVERSION

Having access to health records and patient medical data doesn't do much good if that information is contained in document formats that can't be opened. Without the ability to easily convert documents from one file type to another within the EHR system itself, users are forced to remove the file from the secure environment to manage it elsewhere. In addition to being a compliance problem waiting to happen, this situation also undermines efficiency and increases the likelihood of errors or version confusion.

With the right SDK tools, developers can integrate conversion and compression support directly into their EHR applications. That not only allows them to easily convert files into their preferred formats, but also ensures that when they need to open compressed files, they will be able to preserve the integrity of those files during extraction. Using a software integration that offers proven functionality allows developers to focus on other aspects of their EHR application, such as practice management tools or medical records databases, so they can get to market faster.

SECURE VIEWING AND COLLABORATION

The push for interoperability has led many EHR developers to build platforms that are as easy to access as possible. But ease of use cannot come at the expense of security. Even in the case of a depository of records, developers need to be able to control who has the ability to download or print files when they access them. That means building powerful viewing capabilities directly into the EHR portal rather than relying on external applications.

Incorporating an HTML5 viewer into the EHR system addresses both concerns thanks to its ability to view multiple file types, conduct rapid searches, and track annotation comments all while maintaining the integrity of the original file. Developers can utilize APIs to manage access privileges, making it difficult for anyone without authorization to obtain their own copy of the documents they're reviewing. Rather than building these features from scratch, they can deploy ready-made code and turn their existing resources towards designing a better user experience for providers and patients.

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BUILT-IN ANNOTATION AND REDACTION

As we detailed in a previous section, annotation and redaction capabilities are especially important for healthcare professionals looking to markup medical records and images and share them without compromising patient privacy. Relying on an external tool for these features makes it almost impossible to track what changes have been made or determine who made them. It's also difficult to retain all versions of a redacted document when redactions are made outside the EHR system. And then there's always the risk that someone will use improper redaction techniques, which can put patient privacy at risk and expose providers to substantial regulatory fines.

The best way to avoid these problems is to simply build annotation and redaction tools into the application in conjunction with HTML5 viewing capabilities. This ensures that all changes to the document are tracked within the EHR application. Redacted versions of files can be shared while still preserving the integrity of the original files. Both annotation and redaction are complex document features, so implementing an existing API solution is often the most efficient and effective means of adding these tools into an EHR application.

BARCODE DATA CAPTURE

Healthcare organizations have long used barcodes as a way of tracking various types of information, but they are increasingly using them to capture vital patient data. Prescriptions, vaccinations, and medical devices can all be tracked easily using barcode data capture software. Barcodes are an excellent tool for quickly identifying and managing documents, which can significantly streamline practice workflows.

Integrating a barcode recognition SDK into EHR applications is a great way of expanding functionality and improving efficiency when it comes to document management. Barcodes make it easy to search records quickly and capture patient data to improve accuracy, which is especially important when patients move between providers. And as the recent COVID-19 vaccination initiatives have shown, barcodes can do a great deal to promote interoperability throughout the healthcare system as a whole.

CONCLUSION

Today's EHR applications are expected to cover quite a broad range of functionality to meet the needs of physicians, office support staff, and patients. Fortunately, developers don't have to take on the challenge of building all of those features from scratch. By implementing versatile SDKs and APIs into their platforms, EHR developers can quickly deploy the tools their customers want and expect without pulling too many resources away from designing their core EHR features. It's an ideal solution that allows them to get their products to market faster and rapidly iterate to continue improving in the future.

In our next guide, we'll explore how Accusoft's collection of SDKs and APIs can provide healthcare technology developers with the features they need to create the next generation of EHR applications.

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