DG
DICOM GRID

RadSite™

Streamlining Medical Image Exchange with Cloud-Based Technology

DG Suite is the all-in-one solution for your image management and exchange needs.

No Hardware. No VPNs. HIPAA Compliant.

▶ Request a Demo

Improve Interoperability: Connect patients, care providers, and facilities
Reduce Cost: Minimize unnecessary duplicate radiation procedures
Save Time: Improve productivity and stop waiting to receive images
Grow Network: Accept imaging information from out-of-network facilities

Key Features


Image Share


CD Ingestion


Image Transfer


VNA/Storage


Work Flow


Mobile Viewing

Contents

Introduction to Cloud Based Image Exchange.....4
Introduction.....5
What Is Medical Image Management?.....6
Medical Image Management Challenges and Solutions.....7

Challenges and Solutions.....8
Top 5 Medical Image Management Challenges and How You Can Solve Them.....9
Image Acquisition.....10
Exchange Capabilities.....12
Image Accessibility.....13
Vendor Neutral Archive.....14
Patient Access.....15

Medical Image Exchange VS. PACS.....16
What Is Medical Image Exchange?.....18
When Should You Consider Medical Image Exchange?.....19

Conclusion.....20

Chapter 1

Introduction to Cloud Based Image Exchange

Introduction
What Is Medical Image Management?
Medical Image Management Challenges and Solutions

Introduction

The good news is that cloud-based technology can streamline im- age acquisition and transform the image management process to eliminate the need for CDs. When implemented, an image man- agement system reduces costs and improves staff productivity.

In the following pages you will read about the top challenges institutions face when it comes to medical image management and about how to combat them. You will also learn about the tools you need to create a comprehensive image management system within your organization. Whether you are a new prac- tice looking to invest in a PACS, or an established organization with a full-fledged system, use the tips shared here as a roadmap to your medical image management success.

Medical centers are inundated with images and patient CDs.

What is Medical Image Management?

Medical image management is more than just archiving your images in a database. Medical image manage- ment is a strategy and set of corresponding tools that helps you better utilize patient imaging data through the lifecycle of your patient's care and beyond. It not only assists with your first interaction of acquiring images and securely storing archives but also all the transfers, sharing, and referrals that take place throughout the entire cycle of patient care. This process necessitates a secure and scalable solution that can accommodate growing networks and increasing image volumes.

"Medical image management is a strategy and set of corresponding tools that helps you better utilize patient imaging data through the lifecycle of your patient's care and beyond."

Getting Your Hands on the Right Tools

In order to implement a medical image management strategy from the ground up, you are going to need the proper tools.

Medical image management and exchange software like DICOM Grid's cloud solution provide a platform to access, view, share, and store images online. DICOM Grid's medical image exchange platform can be used as a complete stand-alone image management system, or it can seamlessly integrate with any PACS.

Medical Image Management Challenges & Solutions

Advances in medical imaging have drastically improved patient care by making di- agnos- ing quicker, easier, and more accurate. They also lessen the need for invasive procedures, which always carry some level of risk. Until recently, the advancement in technology used to transport these images paled in comparison. Unfortunately, an all too common result of these technological incongruences is delay in patient care.

Traditional methods of image exchange require expensive hardware, the mapping of VPNs, and the burning of CDs. New cloud-based technology and software business models offer a much more effective, timely, and affordable way to manage images.

Chapter 2

Challenges and Solutions

Top 5 Medical Image Management Challenges and How You Can Solve Them

Image Acquisition

Exchange Capabilities

Image Accessibility

Vendor Neutral Archive

Patient Access

Top 5 Medical Image Management Challenges and How You Can Solve Them

In this chapter we will focus on the top five challenges your institution faces when it comes to medical image management and suggest some ideas on how you can address the issues.

1 Image Acquisition
Processing image data and getting it into your system

2 Exchange Capabilities
Sharing and transferring images

3 Image Accessibility
The ability to view images from any location

4 Vendor Neutral Archive
Storage and backup

5 Patient Access
Providing patients with access to data

1 Image Aquisition

Processing data and getting it into your system

Challenge

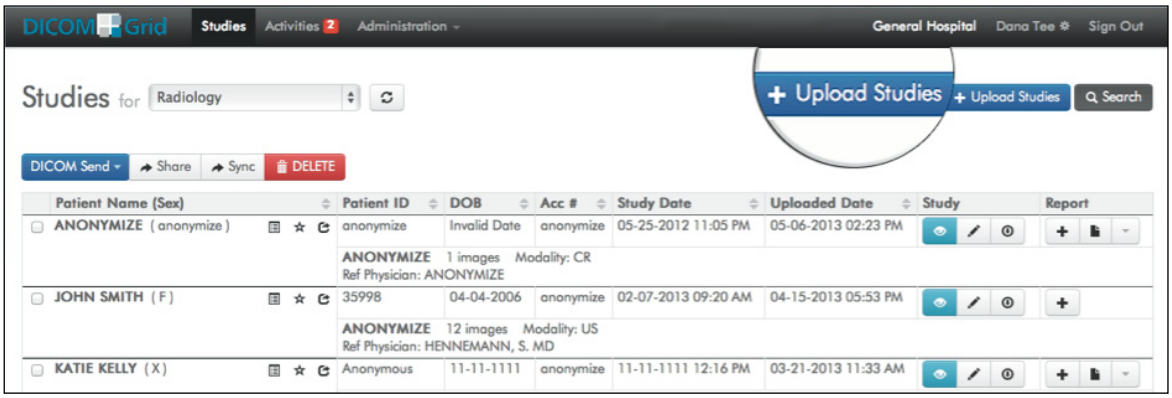
In a fast-paced medical environment, unreadable patient CDs should be the least of your issues. Often though, this is not the case. When patients come to specialists' offices from referring doctors, they usually bring their medical images on a CD. These CDs however, are not compatible with all systems and are difficult to upload as a result. Additionally, there is the risk of the patient losing or damaging the CD before he/she even walks through your office doors. This frustrating and time consuming process for the medical staff also translates to burdens for the patient as they are required to undergo repeat imaging procedures that expose them to unnecessary radiation.

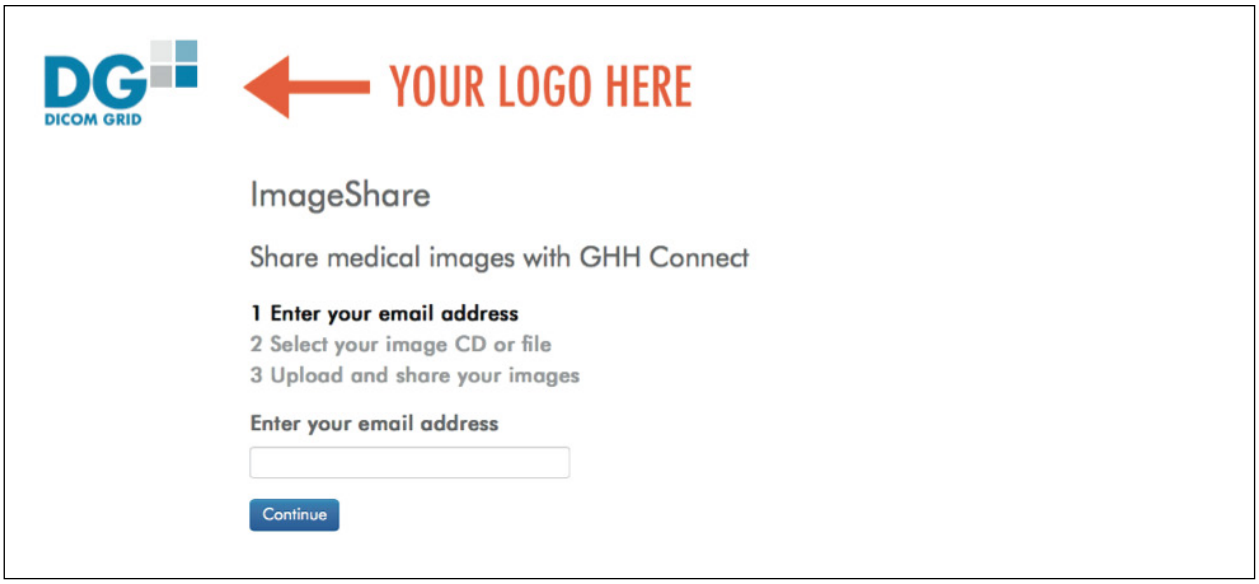
Solution

As a medical practice, you need to find a way to streamline the management of incoming CDs. By enabling front desk staff and medical assistants to easily upload patient images you can allow the attending physician to focus on patient care.

A CD upload tool allows you to integrate CD content with any system, instantly upload and view the contents of patient CDs and thumb drives, and standardize and approve referred patient information before importing it into your PACS.

Below is a picture of DICOM Grid's upload tool, which can be used to ingest CDs.





You can send patients a link to your branded webpage that they can use to upload and share their studies with your practice. This means you can receive access to images prior to a patient's appointment.

Solving CD ingestion challenges is part of the battle. But, wouldn't it be nice to completely rid your practice of CDs?

Ultimately, you should be trying to eliminate the use of patient CDs entirely. This is easy to do with DICOM Grid's cloud-based platform. Rather than sharing and transporting images on CDs, studies are shared through secure web links.

2 Exchange Capabilities
Sharing and transferring images

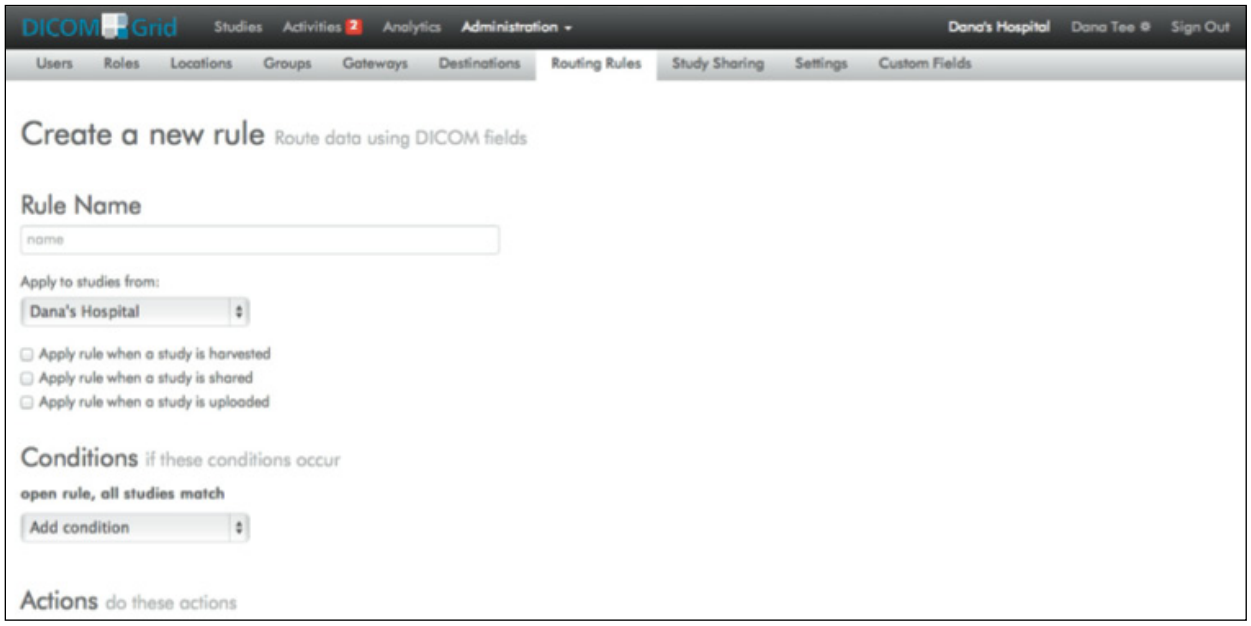
Challenge

Exchanging medical images is complex due to the extremely large size of these files. As a result, the digital transfer of these images can be a daunting and slow process. While most PACS have perfected moving these large images within the medical facilities' walls, often this information needs to be shared with sources outside the network. The digital sharing of large medical image files using VPNs can slow down a network and require an extremely large download window.

Solution

Your institution needs the ability to quickly and efficiently exchange medical images, whether they are being sent across the world or right down the hall. Look for a solution that does not require any hardware or VPNs.

Automated routing rules are another key to guarantee images are getting to the proper location based on a certain set of criteria. With technology like automated routing rules, studies can automatically be pushed to any modality, ensuring the study goes to the appropriate physician while simultaneously unburdening medical staff with this monotonous task. In the administration panel of DICOM Grid's interface, routing rules can be created based on certain criteria sets. For example, you can automatically send images from one location to another as soon as they are uploaded.



3 IMAGE ACCESSIBILITY
Viewing images from any location

Challege

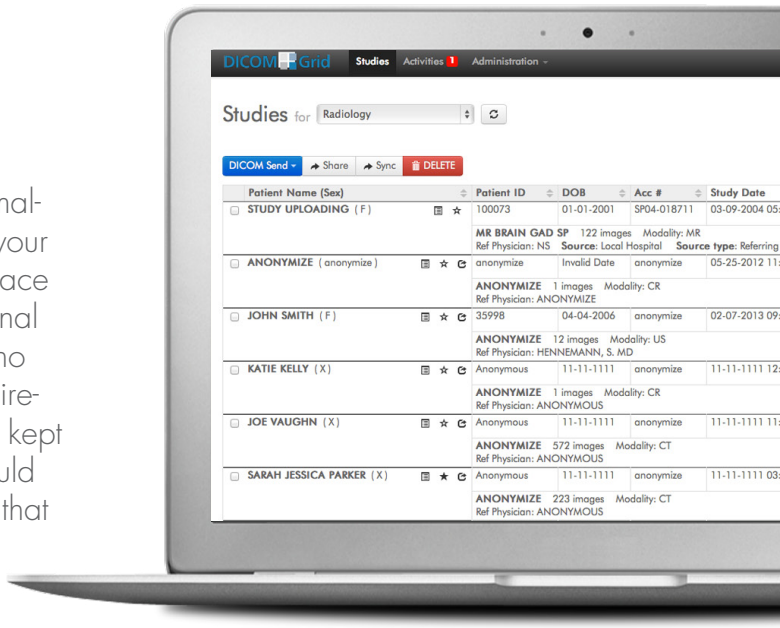
In an increasingly digital world, doctors are beginning to require information at their fingertips when and where they need it. In our current state of technology, many doctors are required to drive to their offices in order to view patient images. On weekends, when a patient comes in as an emergency, doctors are unable to make a preliminary assessment from their homes. Instead, they are forced to drive into the office in order to even see the x-ray or medical image for the first time. The key now is allowing doctors to view images as they are received in real time, from any location and on any device.

Solution

Transferring images between various PACS and modalities can be a nightmare due to the myriad of vendors in the medical world. Your medical practice needs a system that can break down silos and coordinate patient care across an expansive network, regardless of vendor. Additionally, having timely access to patient studies is critical. Because of this, you should also look for a solution that enables mobile viewing for physicians. Mobile viewing is one of the key benefits of real-time image exchange and offers streamlined communication across the entire healthcare system.

A mobile viewer, like DICOM Grid's (featured on the right) can also be used as an interactive tool when meeting with patients. Tablets facilitate a collaborative ap- proach based on visuals and can enable care providers to explain procedures in a more comprehensive manner.

4 Vendor Neutral Archive
Storage and backup



Challenge

Technology is great, until it fails. In the case of a malfunction with your PACS, you want to ensure that your office can continue running smoothly, even in the face of an emergency. It is essential to have an additional copy of all patient images in order to ensure that no historical images are lost. In fact, it is a legal requirement that a second copy of each patient image is kept offsite to avoid permanent loss. These images should also be stored in a vendor neutral environment so that medical staff has the ability to analyze them on any viewing station, regardless of the make, model, or brand.

Solution

To comply with HIPAA regulations, organizations must keep at least two copies of image data on file. This can be costly! Look for a solution that has its own cloud; usually, this ensures that the digital storage will be less expensive. Additionally, a solution with its own archive warehouse ensures maximum security of patient data. One of the most secure methods of storing patient data in the cloud is split-merge technology. This technology anonymizes image studies by removing protected heath information from the imaging data. The protected health information is then separately encrypted and stored, creating an Internet-safe image study.

Split

Anonymize image studies by removing patient health information (PHI) from imaging data.

Encrypt

The PHI is separately encrypted and stored, creating an Internet safe image study.

Merge

The original study is recreate by decrypting and unifying the PHI back with the image data.

5 Patient Access

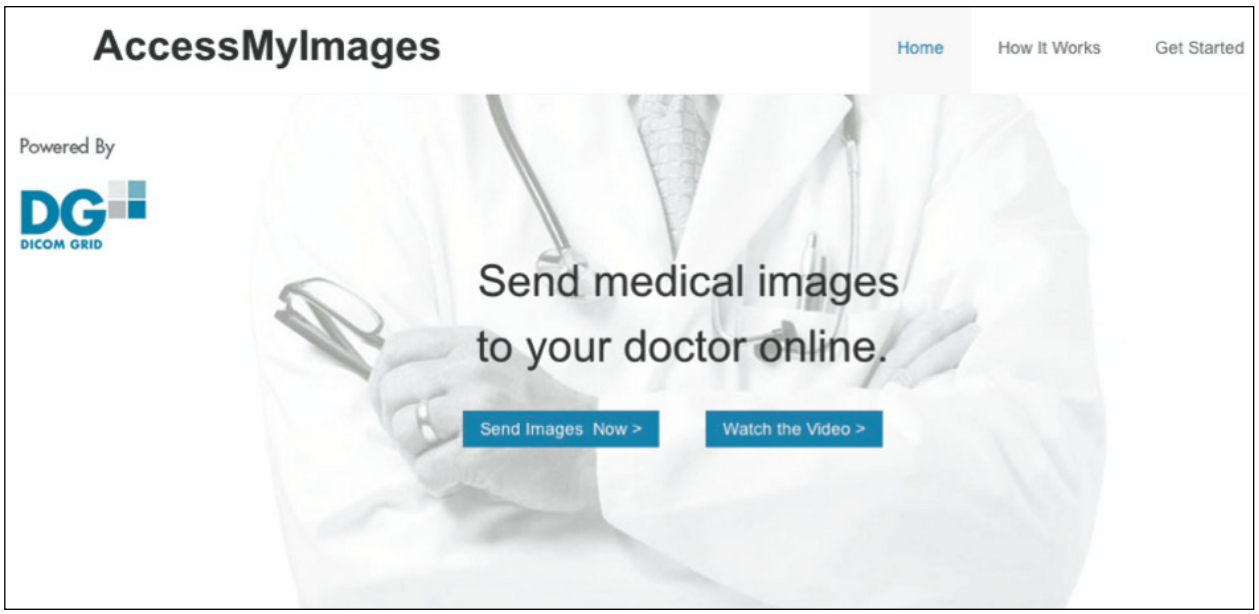
Providing patients with access to data

Challenge

In the twenty-first century, it is time patients took control of their health and their medical images. In our digital society, there is no reason patients should have to rely solely on their doctors to exchange their medical information. Patients should be able to have control and ac- cess over their medical images and should be able to send them to the specialists they would like to. This is also beneficial for the physician because patients are granted the opportunity to send their medical images prior to their appointments. After all, it is the patient's data; don't they deserve to have control over their own information?

Solution

Give your patients the chance to take control of their medical data with a personalized patient health record (PHR) for images. DICOM Grid's public patient portal (accessmyimages.com) is free for patients to use! PHRs for images allow patients to share studies with specialists, easily access their images, and avoid duplicate radiation from unnecessary repeat procedures. Patient portals and PHRs offer your organization an amazing channel to communicate and share data.



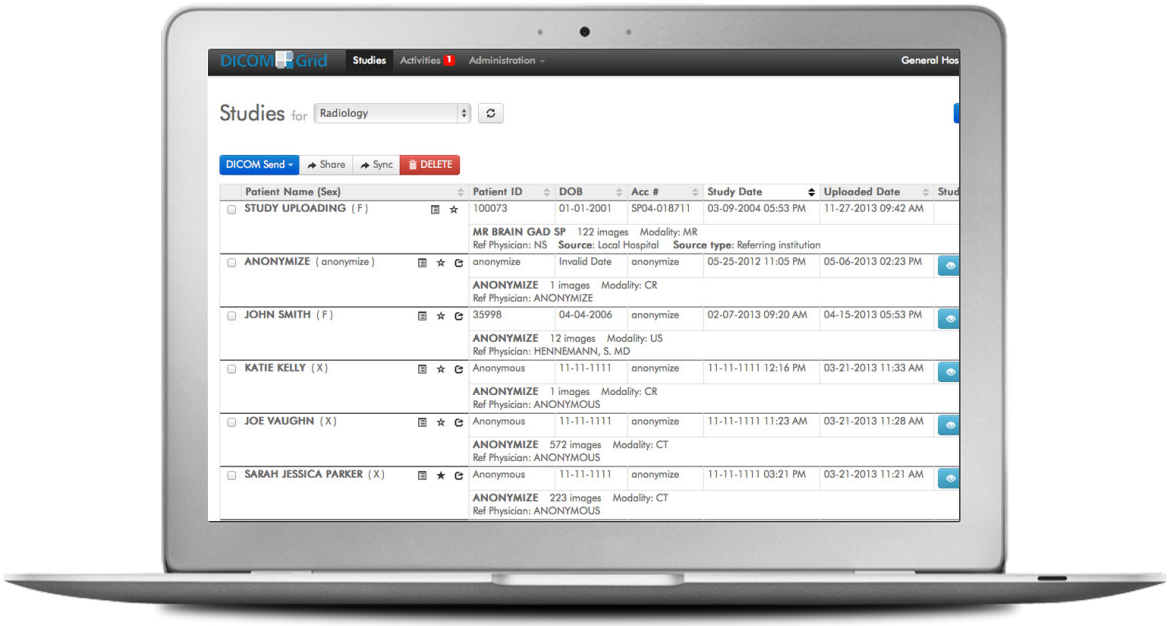
Chapter 3

Medical Image Exchange vs. PACS

What Is Medical Image Exchange?
When Should You Consider Medical Image Exchange?

What is a Medical Image Exchange?

Medical image exchange solutions, like DICOM Grid's, are web-based platforms used to access, manage, view, and store studies. They also include a suite of features for image sharing, transferring and distribution. This type of solution only requires that you have a Web-browser and an Internet connection so that you can access patient studies online.



Traditional PACS vs. Medical Image Exchange

Generally speaking, traditional PACS applications have been focused on solving the departmental issue of medical image management. They often do not solve the greater issue of image distribution across facilities or even between various departments within a single organization. Traditional PACS applications tend to be hardware and network intensive. The upfront investment of purchasing the hardware and the maintenance fees associated with a traditional PACS can be costly for many medical centers. Institutions that can afford the price tag then must choose between PACS vendors.

A core advantage of a medical image exchange platform is that because there is no great capital investment in hardware or infrastructure, buyers do not have to worry about the hardware becoming obsolete or getting "locked in" with a specific vendor

Traditional PACS Disaster Recovery vs. Cloud Platform

Safe/Secure	Safe/Secure
HIPAA Compliant	HIPAA Compliant
Image Aquisition	Image Aquisition
Image Distribution	Image Distribution
Image Management	Image Management
Client Viewer	Client Viewer
	+CD Upload
	+Image Sharing
	+24/7 Access
	+Free Archiving
	+No Hardware
	+No VPNS
	+Quick Set-up

As we demonstrated so far, the ability to distribute and exchange studies is critical for efficient medical image management. Traditional PACS typically do not adequately address these challenges. Today's medical centers need all the functionality of a traditional PACS and more. This is the reason why DICOM Grid built a number of exchange features into its platform.

When Should You Consider Medical Image Exchange?

Organizations of all sizes, from the stand-alone medical center to the healthcare enterprise, turn to cloud-based solutions to solve their medical image management challenges. Below we have outlined a few scenarios your institution might fall into. If someone in your organization has uttered the following words, you should consider a medical image exchange platform a viable addition to your strategy.

"We need a PACS"

If you are a new practice looking to invest in your first PACS or image management solution you will find a medical image exchange to be much more affordable and easier to implement.

"We need a new PACS"

If you are in the market for a new PACS, now is the time to look at forward thinking solutions. A medical image exchange gives you all the functionality of a traditional PACS and includes more features.

"Our PACS needs more functionality"

If your practice already owns a PACS but needs more capabilities, (CD ingestion, mobile viewing, sharing, transferring, archiving) then supplement your current system with a medical image exchange.

"We need a back up PACS"

If your practice owns a PACS but needs a disaster recovery plan, you can utilize a medical image exchange platform's resiliency features to keep your organization performing as usual in face of any PACS malfunction.

Conclusion and Resources

In this eBook we discussed several of the challenges you will most likely face with your medical image management strategy and suggested ways to solve them. We also covered the difference between traditional image management solutions (PACS) and new cloud-based technology (medical image exchange). Lastly, we talked about when it's time to consider a medical image exchange platform.

If you are interested in learning more about cloud-based solutions check out DICOM Grid's Resource Library for eBooks, webinars,and case studies.

Eliminate CDs, cut PACS expenditure costs, and improve your image management strategy.

▶ **Request a Demo**