

# Image Sharing: Making It Real Today

*A Draft Proposal from the RSNA Image Share*

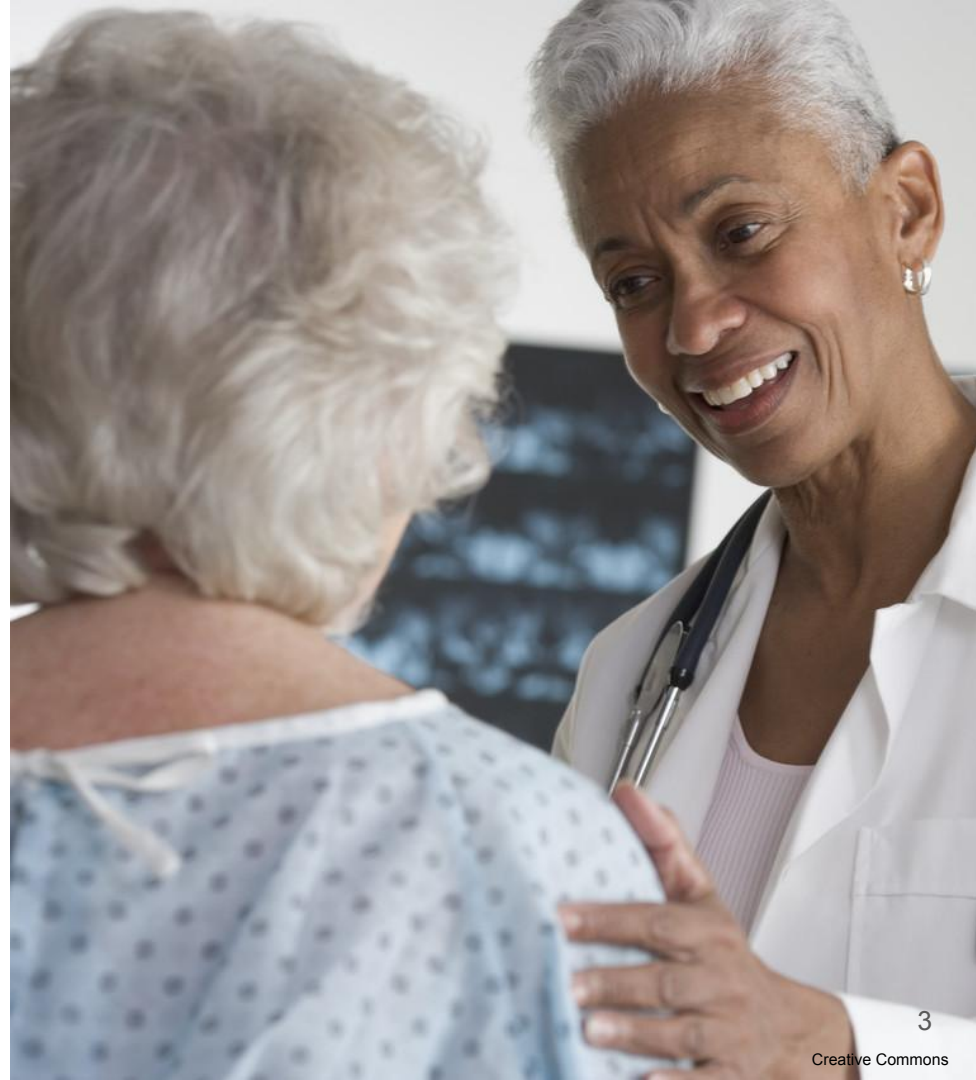
Chris Carr, Didi Davis, David Mendelson, MD

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# Outline

- Why We Need To #DitchTheDisk & Share Images Electronically
- Proposed Image Sharing Implementation Guide
- Overview of Carequality
  
- What's Next

Why We Need  
To  
#DitchTheDisk  
&  
Share Images  
Electronically

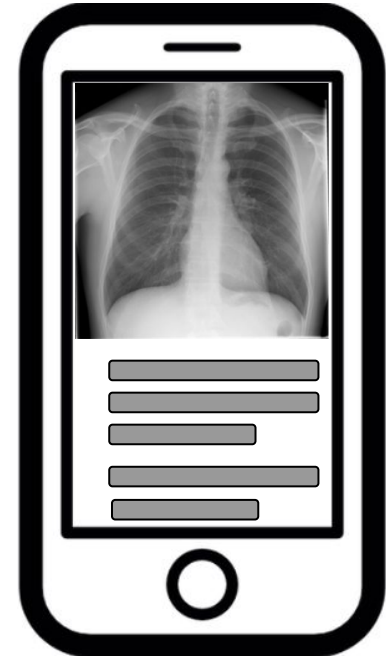


# Why Share Images Electronically?

- Physical media are slow and expensive
- Care providers need data
- Patients also want their data
- We're behind in providing it



#DitchTheDisk



# Why Aren't We Sharing Digitally Today?



- Lack of interoperable digital health systems
- Technology and technology standards aren't ubiquitous or uniform
- Business incentives aren't aligned
- Trust frameworks and agreements don't accommodate imaging - **yet**
- New technologies are fundamentally changing the way people interact with health care.

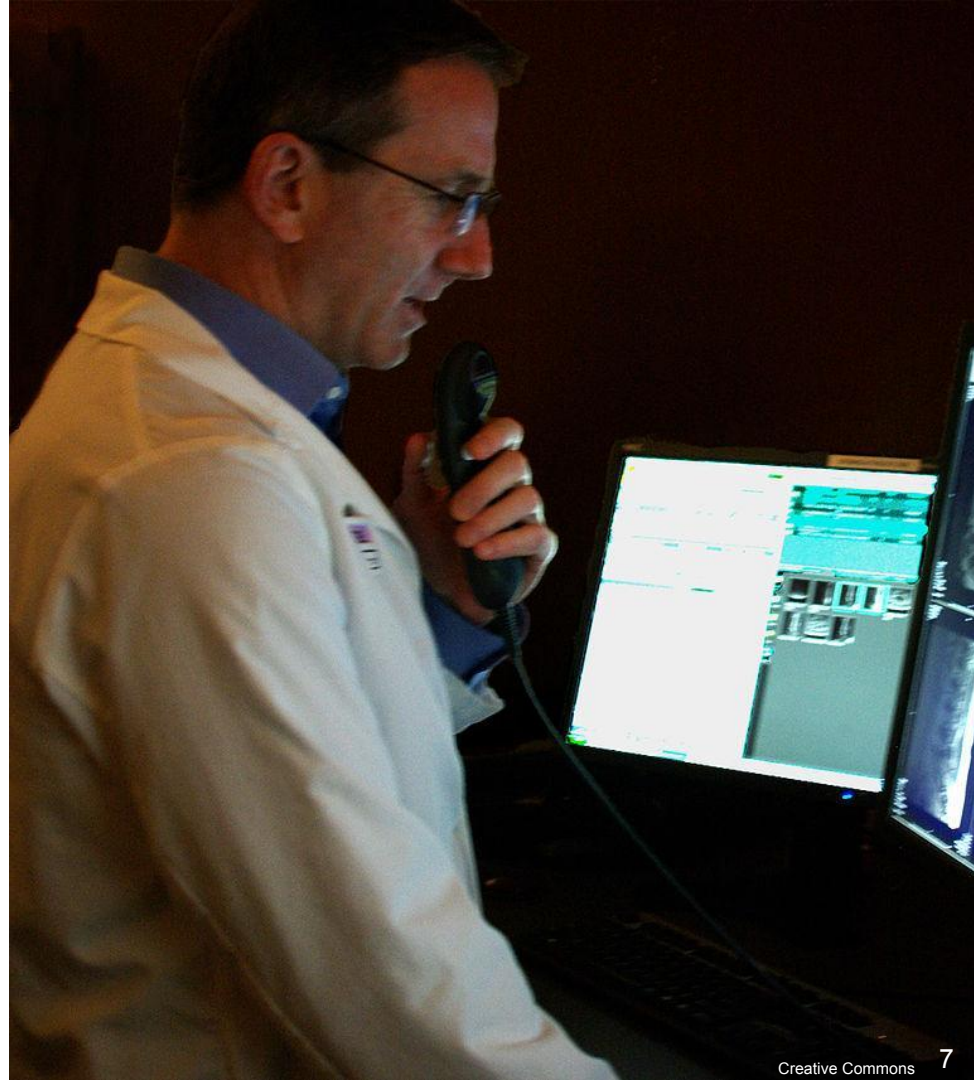
# How Do We Make Electronic Image Sharing Real?

- Documented standards-based implementation guide
- Validation testing process
- Trust framework and standardized data use agreements
- Promotion to medical imaging community and patients and leveraging work underway...
  - Join with ACR/“Ditch the Disk Effort”

“Historically, the process of exchanging radiology images has been expensive and time-consuming. This survey indicates that progress has been made in HIEs supporting the exchange of imaging information and reports, with only 15% of respondents reporting difficulty. **Respondents with 3 million or less members are having less difficulty (7%; n=30) than respondents with more than 3 million to 10 million members (25%; n=12).”<sup>1</sup>**

1) [https://www.ehdc.org/sites/default/files/resources/files/2019%20HIE%20Survey\\_eHealth%20Initiative\\_final.pdf](https://www.ehdc.org/sites/default/files/resources/files/2019%20HIE%20Survey_eHealth%20Initiative_final.pdf)

# Proposed Image Sharing Implementation Guide



# What is an Implementation Guide?

An implementation guide identifies and summarizes technical requirements for organizations that want to connect to share health information

A Successful Implementation Guide Needs:

- Stakeholder Input
- Collaborative Consensus
- Specific details (e.g., “Constrained” standards)



# Carequality Image Sharing Implementation Guide (IG) Supplement

- RSNA is drafting a supplement to the Query-Based Document Exchange IG that will outline standards to be used for DICOM image exchange, under the general framework and policies for document exchange already in production use
- There are minor clarifications needed here and there on existing policies, but the proposed supplement is very straightforward with the exception of the actual standards specifications
- The specifications generally point to other, existing work (e.g. IHE Radiology Framework of Standards)

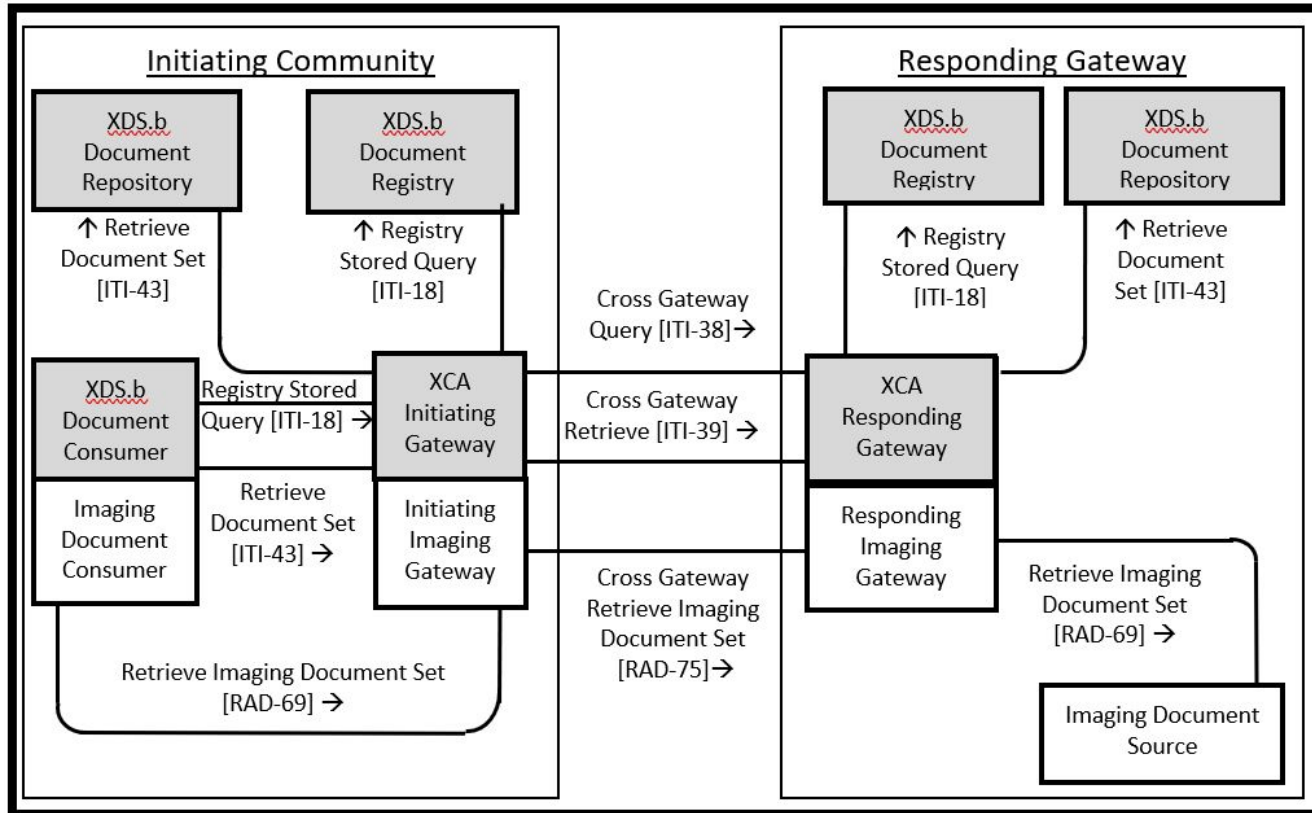
# Carequality Image Sharing IG Supplement

- Foundation is IHE XCA-I profile that defines network to network connections
  - Networks can be based on IHE XDS-I or some facsimile
  - Some flexibility for variations in local patient ID management and exchange protocols
  - Looks like XDS-I from the outside

*Low bar of entry to participate*

We are hopeful that this will offer a way to empower DICOM exchange under the Carequality Framework with **National Impact**

# IHE Radiology Technical Framework (IHE XCA-I)



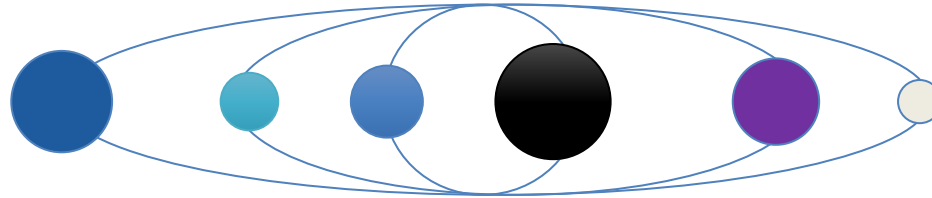
# Overview of Carequality

*Why Partner with Carequality for the Image Sharing IG?*



# The State of Health IT Networks

Communities of data sharing partners have formed, brought together by specific needs.



**Some are geographically based, but other types of data sharing communities also exist.**

# The Carequality Framework Solution

Carequality creates a standardized, national-level interoperability framework to link all data sharing networks.



Carequality is creating a web of interconnected communities.



# The Power of Connecting Communities

*How do you get nationwide connectivity?  
Clinic by clinic, hospital by hospital?*

Data sharing networks have already connected many participants within communities. The connections grow exponentially by connecting these networks.

➔ If you connect six clinics, you might reach a few dozen physicians.

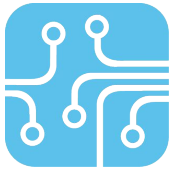
➔ If you connect six communities, you can reach thousands of physicians.

# Essential Elements



**Common rules of the road:** In order for the varied participants to trust each other with health information, everyone needs to have a legal obligation to abide by the same rules.

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**Well-defined technical specs:** Shared rules are not enough; clear standards must be laid out in an implementation guide that all implementers can follow.

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**A participant directory:** To connect using the common standards, systems must know the addresses and roles of each participant.



# Current Carequality Connected Agreement Signees

## HIE



## Technology Vendors



## Service Providers



## Consumer Apps



## Other

# In Production:



eClinicalWorks



**36 Million documents per month (as of April 2019)**

**Estimated 220 million clinical documents exchanged since July 2016**

# What's Next For Carequality?

- Work In Progress
  - Automating directory services
  - Improving document content
  - Expanding consumer access
  - Coordinating care team notifications
  - Governance for FHIR-based data element access
  - *Image sharing*
- Future
  - Additional care coordination support



If you'd like to join the conversation, please contact [admin@carequality.org](mailto:admin@carequality.org)

# Carequality Imaging Data Exchange Implementation Guide Overview

- Describes Use Case
- Defines Roles and Technical Requirements
  - Query Workflow
  - Directory Services
  - Security and Transport
  - Patient Discovery
  - Record Locator Services
  - XCA/XCA-I Gateway Requirements
- Systems Affected
  - PACS or RIS Systems
  - EMR's and other patient management systems
  - HIE's
  - Image Exchange Systems
  - VNA's

<https://carequality.org/wp-content/uploads/2019/06/Imaging-Exchange-IG-20190620-DRAFT-v1.pdf>

# Roadmap to Make Image Sharing a Reality

1. Stakeholders (YOU!) Refine Proposed Imaging IG
2. Carequality Adopt Final IG
3. Imaging networks Onboard to Carequality

# A Closer Look At What's Next for the Proposed Carequality Imaging IG

- Review our work: Is this the right approach?
- Refine and publish Implementation Guide  
<https://carequality.org/wp-content/uploads/2019/06/Imaging-Exchange-IG-20190620-DRAFT-v1.pdf>
- Start validation testing and onboarding process
- Support and Promote efforts through #DitchtheDisk and all ACR and RSNA channels
  - Series of communications and events at annual meetings
  - Incorporation in Future Radiology Demos
- Begin work on next phase: implementing emerging standards (DICOMweb and HL7 FHIR)

# Questions



Carequality Implementor Questions: [admin@carequality.org](mailto:admin@carequality.org)

Imaging IG Questions: [imaging@carequality.org](mailto:imaging@carequality.org)

RSNA Image Share Validation Testing Questions: [testing@sequoiaproject.org](mailto:testing@sequoiaproject.org)

# Appendix



# Sequoia's Role for RCE and TEFCA

A Joint Proposal by Sequoia Project, Carequality,  
Gravely Group and RTI

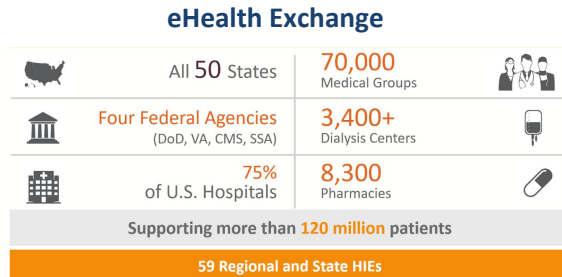
<https://sequoiaproject.org/resources/tefca-response/>

# RCE Application Update

- Carequality plays an important role in the joint Sequoia-Carequality-RTI-Gravely Group application for the RCE cooperative agreement
- Specifically, Carequality is slated to provide the operational support for QHIN application and designation processes, and exchange activities
- This activity will be overseen from a budgetary and strategic standpoint by the Carequality Board
- The RCE Strategic Planning Committee – a joint effort of the Sequoia and Carequality Boards – has provided clear guidance that Carequality’s existing operations must be protected and must continue
- Over time, as the future of the TEF ecosystem clarifies, we will determine the appropriate strategic path re: convergence (or not) of Carequality Framework exchange with TEF ecosystem exchange

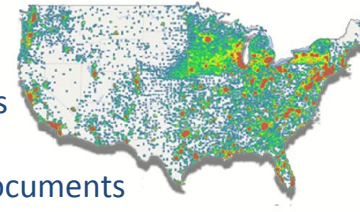
# eHealth Exchange to Connect to Nationwide Networks

- Already connected to eHealth Exchange network, with California connections, and ability to connect nationwide
- Connectivity will be expanded through Carequality



## Carequality

40,000+ Clinics  
1,500 Hospitals  
600K+ Physicians



36M+ Clinical Documents  
Exchanged Monthly (May  
2019)