Imaging Protocol Management at a Large Multicenter System: A Document Library Cloud Based Solution
Authors:

Kevin Smith, MD
Jeffrey Dunkle, MD
Vasantha Aaron, MD
John Burns
Karl Mockler
Mark Frank, MD, MBA

Disclosures: None
Our Enterprise

• Complex, multi-site provider network with several hospitals and imaging centers
• Geographic span of more than 10,000 square miles
• 130 radiologists
• 500 technologists
• Over 1,000,000 exams per year
• Over 220,000 CT exams per year
• Over 60,000 MR exams per year
• 45 CT scanners, 35 MR scanners from multiple vendors
High-quality care depends on consistent use of appropriate imaging protocols on all modalities at all sites.
Our Challenge

Provide a compendium of imaging protocols that are:

• Up to date
• Easy to access and use
• Everywhere available
• Always and immediately available
• Accessed from single source
• Customized per subspecialty
• Easy to maintain
Our Strategy

A cloud-centric content management system configured as a document database...

...offering convenient, user-friendly, "just in time" web-centric access to imaging protocols for multiple modalities
Desirability Checklist

• Use existing enterprise IT resources
  • No new in house software development
  • No new software purchases or licensing

• Content easy to create and maintain as well as easy to access

• Authentication for access integrated with enterprise IT security

• Access levels for users, content managers, and administrators

• Document version management
We Use Microsoft SharePoint

- Enterprise-wide availability already in place at our institution
- Built-in capabilities for document storage and management
- Seamlessly integrated with Microsoft Word for editing
- Data dictionary enables flexible categorization and tagging of documents
- Web-publishing capabilities fit our needs well
  - Built-in specialized web-page elements to display and filter lists of documents
    - Modality-centric lists
    - Subspecialty-centric lists
    - Automatically populated per categorization & tagging of documents
  - Standard web-page elements for stylistic design with graphics, hyperlinks, etc.
Hyperlinks to categorized drop-down menus

Single-click buttons to modality-centric protocols
CT Protocols Page:

Expandable lists of categorized protocols

Adult CT Protocols

- Find a file

- Name

- Anatomy: Brain (4)
- Anatomy: Chest (4)
- Anatomy: Face/Orbits (5)
- Anatomy: GU (7)
- Anatomy: Lower Extremity (11)
- Anatomy: Neck (3)
- Anatomy: Pelvis/Hips (4)
- Anatomy: Skull Base/CN's (2)
- Anatomy: Spine (6)
- Anatomy: Upper Extremity (8)
- Anatomy: Vascular (22)
- Anatomy: Viscera (18)

Recently Modified Protocols

- Name: CT ABD WITHOUT IV LOW DOSE RENAL STONE
  - Modified: 4/24/2019 10:31 AM

BODY MASS INDEX CALCULATOR

CARE AFTER CONTRAST INJECTION INFILTRATION-WORD.DOCX
MR Protocols Page Showing Drilldown to List of Adult 3T GU Protocols:

Expanded list of protocols. Single-click viewing.
Top-of-home-page Menus Offer Links to Ancillary Resources In Addition to Protocol Pages

CT Protocols
CT Resources

Link to CT Resources Page

AHC Policies
- Contrast Media Policy (Rad 3.04)
- Pregnant Patient Imaging Policy
- OP Metformin.pdf

Practice Guidelines
- Oral Contrast Prep for Inpatients
- Exam Priority Guidelines (for Technologists)
- IV Contrast Allergy Order Set.pdf
- IU West P3T setup.pptx

Coronary CTA Resources
- Coronary Order Set Inpatient.pdf
- Coronary Order Set with Meds.pdf

AHC Radiology Consent Forms
- Consent for Radiology During Pregnancy.pdf
- Consent for Waiving Pregnancy Testing Prior to Radiology Exam.pdf
Results

• Deployed for approximately 2 years
• Daily use between 40 and 120 users
• Subspecialty section chiefs are the primary stewards of protocols
• High level of satisfaction among technologists and radiologists regarding easy access to up-to-date protocols and ancillary information resources
• Multi-dimensional improvement compared to using paper-based approach or static repositories of electronic documents
Key Advantages to Approach

• No new costs. Technology framework already in place
• Convenient web-centric access
• Content creation and maintenance using familiar word processor integrated with framework
• Enterprise-wide access via integration with established mechanisms for authentication
• Built-in support for assignable level-of-access permissions
• Built-in support for document version management
Thank You