Welcome to the meeting. We will begin shortly.

- Type a comment/question in Q&A (only seen by organizers)
- Type a comment/question in the chat (can be seen by all)

Questions and comments can be entered in the Q&A field
DIR Training Webinar Series

Dose Index Registry: All About Mapping

NRDR
Dose Index Registry
AMERICAN COLLEGE OF RADIOLOGY
Moderator

Zach Smith
Sr. Quality Programs Assistant, ACR
A. Kyle Jones, PhD, FAAPM
Professor, University of Texas, MD Anderson Cancer Center
Chair, DIR Education and QI Subcommittee
Co-Chair, DIR Fluoroscopy Subcommittee

Kevin A. Wunderle, PhD, DABR
Diagnostic Medical Physicist, Associate Professor of Radiology, Cleveland Clinic
Co-Chair, DIR Fluoroscopy Subcommittee
Speakers

Ryan Bosca, PhD
Physicist, Imaging Physics Department, Sanford Health

Michael A. Bohl, MPH
Founder, Dose Registry Support Services
Speakers

Mike Simanowith
Director of Registries, ACR

Mythreyi Chatfield, PhD
EVP for Quality and Safety, ACR

Dustin A. Gress, MS, DABR, DABSNM
Senior Advisor, Medical Physics, ACR
Disclosures

• None
Using the Zoom Interface

- Type a comment/question in Q&A (only seen by organizers)
- Type a comment/question in the chat (can be seen by all)
- Questions and comments can be entered in the Q&A field
Introducing the DIR Training Webinar Series

This webinar is second in a series that will continue through 2022:

• Webinar 1: Maximizing the Value of Participation
  • View the recording at https://www.acr.org/Practice-Management-Quality-Informatics/Registries/Dose-Index-Registry/Training-Webinar

• Webinar 2: All About Mapping

• Webinar 3: Cashing in on Your Investment: Getting the Most from Your DIR Reports
Webinar Agenda

• Overview of mapping and its importance
• Update on mapping lexicons
• Strategies for coordinating mapping roles
• Mapping tools
  • DIR mapping tool
  • Excel bulk mapping upload
• Best practices and avoiding pitfalls
• Q&A
  • We answer your most asked questions and take live questions
Why Mapping is Important

- Apples to apples comparison for national benchmarking with peers
  - Still allows for local customization
- Identify true outliers – protocol issues, scanner/device issues
- Promotes protocol consistency between sites
  - Benefit for technologists who work at multiple locations
Why Mapping is Important
Why Mapping is Important

CT ABD PELVIS MULTIPH LIVER WO & W IVCON (RPID956)

CT ABD/PEL WO & W IVCON (RPID1911)
Life Cycle of a Mapped Exam

Scan Data
• DICOM Radiation Dose Structured Report (RDSR) sent from modality or PACS to TRIAD Site Server

TRIAD Site Server
• Anonymizes RDSR and sends to the DIR Central Server where the RDSR is parsed for storage in the DIR Database

DIR Database
• Stores the data for use by the Registry

Registry
• Calculates measures, compiles results, and produces Feedback Reports

Reports
• Interactive and Executive Summary Aggregate Reports are reviewed as part of a Dose Management Program
Mapping Terminology

- RadLex Playbook
  - What it is and why we chose to use it when DIR started

- ACR Common
  - Why it was developed and how it is relevant to DIR
Ask the Experts

What strategies do you recommend for managing mapping?

Michael A. Bohl, MPH
Facility Configurations and Impact on Mapping
# Recommendations for Mapping Roles

<table>
<thead>
<tr>
<th>Role</th>
<th>Recommended</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Admin</td>
<td>Radiology Dept Mgr</td>
<td>IT</td>
</tr>
<tr>
<td>Facility Admin</td>
<td>Radiology Dept Mgr</td>
<td>Only 1 Person Allowed</td>
</tr>
<tr>
<td>Registry Admin</td>
<td>CT Director/CT Lead</td>
<td>Dept Mgr or Pacs Admin</td>
</tr>
<tr>
<td>Facility User</td>
<td>CT Technologist</td>
<td></td>
</tr>
<tr>
<td>Service User*</td>
<td>CT Director/CT Lead</td>
<td>Multiple People Allowed</td>
</tr>
<tr>
<td></td>
<td>CT Director/CT Lead/Outside Support Person</td>
<td>Multiple People Allowed</td>
</tr>
</tbody>
</table>

*Most Useful in accounts with Multiple Facilities for Mapping
Ask the Experts

What are some ways in which multi-facility institutions manage the mapping process?

Ryan Bosca, PhD

Kevin A. Wunderle, PhD, DABR
Managing a Multi-Facility Institution
What Has Been Most Useful in the Fluoro DIR for Cleveland Clinic

• Foremost it must be a team effort
  • Physicist asked to lead and coordinate the effort
  • Physician, Lead X-ray Tech, and RIS team member also formally included
  • The assistance is primarily needed to determine the type and extent of the performed procedure descriptions
What options do DIR participants have for mapping their exams?
**DIR Exam Name Mapping**

Welcome to CT Exam Name Mapping

- **Change Facility**
- **Change Modality**

**At a Glance:**
- Not Tagged: 3
- Tagging In Process: 0
- Tagging Suggested: 2
- Tagging Completed: 2
- Unvalid Tag: 0
- Guidance: 0
- Unwanted: 0

### Search Exam

- **Upload File**
- **Choose File**
- **No file chosen**
- **Upload**
- **Export All To Excel**
- **Export Audit Log**

**Exam:**
- **Status:**
- **RPID:**

### Exam List

<table>
<thead>
<tr>
<th>Exam</th>
<th>RPID or Predicate values</th>
<th>Status</th>
<th>Change Status</th>
<th>Comments</th>
<th>Audit Log</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT ABD/PELV W CONT</td>
<td>PID945 CT ABD PELVIS Wпеч</td>
<td>Tagging Suggested</td>
<td>Mark As NotTagged</td>
<td>Comments</td>
<td>AuditLog</td>
<td>Build your own mapping</td>
</tr>
<tr>
<td>CT ABDOMEN PELVIS WITH</td>
<td>PID981 CT T SPINE C SPINE L SPINE Wпеч</td>
<td>Tagging Completed</td>
<td>Mark As NotTagged</td>
<td>Comments</td>
<td>AuditLog</td>
<td>Build your own mapping</td>
</tr>
<tr>
<td>CT ABDOMEN PELVIS W CONTRAST</td>
<td>PID981 CT T SPINE C SPINE L SPINE Wпеч</td>
<td>Tagging Completed</td>
<td>Mark As NotTagged</td>
<td>Comments</td>
<td>AuditLog</td>
<td>Build your own mapping</td>
</tr>
<tr>
<td>CT HEAD W/O</td>
<td>PID105 CT HEAD SELLA Wпеч</td>
<td>Tagging Completed</td>
<td>Mark As NotTagged</td>
<td>Comments</td>
<td>AuditLog</td>
<td>Build your own mapping</td>
</tr>
<tr>
<td>CT Lumbar W/O (Unpaired)</td>
<td>PID981 CT L SPINE Wпеч</td>
<td>Tagging Completed</td>
<td>Mark As NotTagged</td>
<td>Comments</td>
<td>AuditLog</td>
<td>Build your own mapping</td>
</tr>
<tr>
<td>RAD ORDER CT ABD PELVIS Wпеч</td>
<td>PID981 CT ABD PELVIS Wпеч</td>
<td>Not Tagged</td>
<td>Mark As NotTagged</td>
<td>Comments</td>
<td>AuditLog</td>
<td>Build your own mapping</td>
</tr>
<tr>
<td>SCANNER ABDOMINO PELVI</td>
<td>PID981 CT ABD PELVIS Wпеч</td>
<td>Not Tagged</td>
<td>Mark As NotTagged</td>
<td>Comments</td>
<td>AuditLog</td>
<td>Build your own mapping</td>
</tr>
</tbody>
</table>

**Note:**
You can tag the selected exams by:

1. assigning an RPID using the ‘Search RPID’ button or
2. building your own mapping using the ‘Build your own mapping’ button

**Actions:**
- **Search RPID**
- **Build your own mapping multiple**
- **Mark selection as tagging completed**
What have our pilot sites learned about the use of the different mapping methods?
Insight for Cleveland Clinic’s Mapping Approach

- Because of our size, we almost exclusively batch process
- Extract both the Excel of site procedure names and ACR Common Names
- Put both side by side and copy and paste over
Ask the Experts

How often do you advise reviewing and updating your mapping?

Kevin A. Wunderle, PhD, DABR
Mapping Update Frequency

• At the beginning, frequent ~ weekly
• After the first month ~ monthly
• After the first quarter ~ quarterly
What do you suggest for mapping pediatric exams?
Ask the Experts

What are some of the most common mapping errors you’ve seen and what advice do you have for sites to avoid those errors?

Michael A. Bohl, MPH
Exam Name Mapping Review

- Mismapping occurs!

Hint: Export Exam Name Mappings into Excel to create a pivot table to group study names by RPID.
**Hint: Maintain Consistency**

<table>
<thead>
<tr>
<th>22</th>
<th>RPID22 CT HEAD WO IVCON</th>
<th>CT Head w/o contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Head 01_BRAIN_WO(Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head BRAIN_WITHOUT(Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head BRAIN_WO (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head BRAIN_WO_W (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head CRANIOSYNOSTOSIS (Child)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*HEAD_ROUTINE WITH_BONE_UP_TO_AG 66 (Child)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*SPIRAL_AGE_3 TO_6 (Child)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*MAC_CHILD (Child)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*MAC_CHILD_UNDER7 (Child)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*ROUTINE_BRAIN (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*ROUTINE_HEAD_AGE_3 TO_6 (Child)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*ROUTINE_HEAD_AGEMO TO_3YR (Child)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*ROUTINE HEAD_UP TO AGE 6 (Child)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*SPIRAL_BRAIN (Adult)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>23</th>
<th>RPID23 CT HEAD WO &amp; W IVCON</th>
<th>CT Head w &amp; w/o contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Head*01_BRAIN_WO_W (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head_01_BRAIN_W (Adult)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>24</th>
<th>RPID24 CT HEAD W IVCON</th>
<th>CT Head W</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Head*01_BRAIN_W (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*01_BRAIN_WITH (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*01_BRAIN_WITH (Adult)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>265</th>
<th>RPID265 CT HEAD BRN W IVCON</th>
<th>CT Head w/ contrast</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Head*HEAD WITH CONTRAST (Adult)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>266</th>
<th>RPID266 CT HEAD BRN WO IVCON</th>
<th>CT Head Stroke Alert</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Head*01_HEAD_ROUTINE (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*ROUTINE_HEAD (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*SPIRAL_HEAD (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specials*HeadTrauma (Adult)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>267</th>
<th>RPID267 CT HEAD BRN WO &amp; W IVCON</th>
<th>CT Head w &amp; w/o contrast</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Head*01_HEAD_WO_WITH (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*HEAD_SPIRAL_WO_W (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*HEAD_W_WO (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*HEAD_WO_W (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*HEAD_WO_WITH (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*PITUITARY_W_WO (Adult)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head*SPIRAL HEAD_W_WO (Adult)</td>
<td></td>
</tr>
</tbody>
</table>
- CT Only
- Upper Extremity
- Lower Extremity
- Angiography
- Interventional
- Combination Studies
- Trauma

Hint: Download Radlex; Create Cheat Sheets

https://doseregistry.com/resources/
How will DIR Link – the next generation of TRIAD – impact mapping?
DIR Updates

• DIR Link
  • New means of transmitting data from site to ACR (replacing TRIAD)
    • No longer support secondary capture
    • Automatic software updates
    • Enhanced security protocols and local ID management
    • Future data linking projects
    • Existing mapping/configurations maintained
  • Early adopters (10 trial sites) – mid April 2022
  • Phased roll-out to all participants starting in June 2022 completing in late 2022
  • For more details visit the DIR Link Knowledge Base article
### DIR Updates

- **AI-Guided Mapping**
  - Algorithm suggested mapping provided for site to confirm / customize
  - Ongoing improvement of algorithm through ‘retraining’ based on continued site mapping

<table>
<thead>
<tr>
<th>Study Description</th>
<th>Requested Procedure Description</th>
<th>Suggested Mapping – Please Select or Custom Map (% match) Common ID: Exam Name</th>
<th>Confirm Selection</th>
<th>Final Mapping Value</th>
<th>Mapping Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR Right Foot – Big Toe</td>
<td>Dig Rad Big Toe</td>
<td>(85%) ID 123: Exam DR Toe • Custom Mapping</td>
<td>V Exam List</td>
<td>Confirm?</td>
<td>Mapping Not Confirmed</td>
</tr>
<tr>
<td>DR Head Brain</td>
<td>DR Head Br</td>
<td>(92%) ID 875: Exam DR Head • Custom Mapping</td>
<td>V Exam List</td>
<td>N/A – Not Selected</td>
<td>Not Mapped</td>
</tr>
<tr>
<td>DR Abdomen GU</td>
<td>Null</td>
<td>(55%) ID 888: Exam DR Abdomen • Custom Mapping</td>
<td>ID 555: DR Kidneys</td>
<td>Confirmed</td>
<td>Mapping Confirmed</td>
</tr>
<tr>
<td>DR Abdomen GI</td>
<td>Null</td>
<td>(55%) ID 888: Exam DR Abdomen • Custom Mapping</td>
<td>V Exam List</td>
<td>N/A – Not Selected</td>
<td>Not Mapped</td>
</tr>
</tbody>
</table>
DIR Updates

• NRDR User Focus Group
  • Provide feedback/modifications to reports and online tools, review measures under development, suggest enhancements to improve usability
  • Participation in quarterly meetings and periodic surveys
  • To sign up for the focus group, please submit contact information here or use QR code

https://app.smartsheet.com/b/form/36f1052c4e0b42edbb22740e05bb1719

Volunteer Here
Opportunities for Engagement

• Join the DIR and expansions

• Future webinars
  • Stay tuned for the last webinar in the DIR Training Series later this year: Cashing in on Your Investment: Getting the Most from Your DIR Reports
NRDR Support

- Access detailed information
  - Pertaining to all registries
  - Registry specific

- Submit a ticket for customer service support

nrdrsupport.acr.org

acr.org/DIR
NRDR Help Desk

➢ Email: NRDRSupport@acr.org
➢ Phone: 1-800-227-5463 x3535
➢ Web: https://nrdrsupport.acr.org
Presented by:

Michael Bohl
Founder, Dose Registry Support Services

Michael Bohl is a radiology executive with broad experience in radiology management and operations. A past President of the Radiology Business Management Association and nationally known speaker and author, Mr. Bohl has spent many years providing facilities with innovative solutions for using the Dose Index Registry and meeting The Joint Commission Dose Incident Identification requirements.