From Monologue to Dialogue: Using an Online Feedback Tool to Improve Image Quality Through Enhanced Radiologist-Technologist Communication

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Radiologist-Technologist Communication

- Prior to the digital age, radiologists and technologists worked in close proximity.
- Distance and increase volume has created challenges to radiologist technologist communication.
Radiologist-technologist communication: Old model

Technologists and radiologists confer in person.
Technologists and radiologists are remote and communicate by phone.
Background

- Radiologists and technologists have few opportunities for direct interaction, resulting in difficulty communicating image quality concerns.
- A process was developed using a commercially available online tool in RadNet® (Cerner Corp.) for radiologists to provide feedback to technologists.
Improvement Goal (Aim Statement)

- To improve the technologist response rate to >90% of cases critiqued using online quality tool by May 2013.
- To improve the specificity and quality of radiologist-technologist communication.
Radiologist Feedback Tool

Allows specific comment in addition to pull-down list
Initial Process

- Radiology resident or attending sends feedback in Radnet (RIS)
- Tech supervisor pulls data room by room from Powerchart
- Supervisor reviews case and discusses with tech
- Sup. sends response to a coordinator
- Coordinator sends response to division reading room coordinator
- Division coordinator looks up cases to add attending’s name if critique was from a resident
- Radiologist reads the response and contacts supervisor if necessary

- Supervisor must remember to pull data weekly from each room
- Response format not uniform
- May be multiple emails with different format
- Different coordinator from intake
Radiologist survey

• Survey attending physicians and radiologist Sept. 2012
  – 56% used tool
  – 12% received feedback
• Comments:
  – No technologist response to feedback!
  – Difficult to tell if it’s doing any good
Technologist Survey

• Survey of technologists from April 2013
• 48% said the process had a positive impact.
• 48% did not feel it was positive or negative.
• Comments:
  – Radiologists should give more specific comments and suggestions for improvement
  – More direct communication needed
## Plan, Do, Study, Act (PDSA)

<table>
<thead>
<tr>
<th>Tests of Change</th>
<th>What did we learn?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add a quality coordinator to pull cases, to ensure responses were made, and to send radiologists the feedback.</td>
<td>Pulling data was a time consuming process and reminders were helpful to ensure responses.</td>
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<tr>
<td>Radiologists were asked to submit more detailed and specific comments.</td>
<td>Technologists did not always know why an image was cited and needed more specific information.</td>
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<tr>
<td>Technologists were asked to discuss cases with radiologists if they needed help or more information.</td>
<td>Technologists were reluctant to reach out to radiologists. Sometimes radiologists did not respond to requests for help.</td>
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# New Responsibility Chart

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
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</table>
| Radiologist         | • Enter feedback into tool  
                       • Suggest specific areas of improvement  
                       • Be available for clarification  
                       • Follow up with Quality Coordinator if feedback is not satisfactory |
| Supervisor/Technologist | • Review cases on PACS  
                        • Compile specific feedback: protocol modification, technologist education, technologist oversight, etc  
                        • Contact radiologist directly for clarification  
                        • Return feedback to Quality Coordinator |
| Quality Coordinator | • Distribute feedback to supervisors  
                       • Send reminders for feedback not returned  
                       • Distribute supervisor feedback to radiologists by division  
                       • Facilitate conversations between techs/supervisors/radiologists |
New Process

Radiology resident or attending sends feedback in Radnet (RIS)

Quality coordinator (QC) pulls all the cases and sends to supervisor, follows up in 1 week if no response

Supervisor reviews case and discusses with tech

Need more info?

yes

QC discusses with radiologist or tech involved and/or helps facilitate direct communication

no

Supervisor sends response to QC

Quality coordinator sends feedback to attending and reading room coordinator

Radiologist reads the response and contacts supervisor if necessary

Saves supervisor time and data in uniform format

Response evaluated before sent to radiologist
Specific Radiologist Comment and Tech Response to Feedback

- **Technologist response improved from 20% to over 95%**
- **Quality Coordinator added**
- **Physician enters specific information in “comment”**

Bar chart showing:
- Percent of Feedback

Legend:
- Percent tech response
- Specific radiologist comment
## Radiologists critiques

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<tr>
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<tbody>
<tr>
<td>% positive feedback</td>
<td>15%</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>% feedback with comments</td>
<td>59%</td>
<td>80%</td>
<td>82%</td>
</tr>
<tr>
<td>Total responses</td>
<td>103/month</td>
<td>71/month</td>
<td>61/month</td>
</tr>
</tbody>
</table>

Total number of critiques declined but percentage of positive critiques remained constant.
### Technologist responses to negative feedback

<table>
<thead>
<tr>
<th>Category</th>
<th>Dec 2012 to Aug 2012</th>
<th>Jan 2013 to Mar 3013</th>
<th>Apr 2013 to Sep 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation for suboptimal study</td>
<td>41.2%</td>
<td>36.3%</td>
<td>21.2%</td>
</tr>
<tr>
<td>Plan to improve technique in the future</td>
<td>49.1%</td>
<td>60.5%</td>
<td>70.4%</td>
</tr>
<tr>
<td>Disagree with radiologist</td>
<td>10.5%</td>
<td>11.5%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Need more information or Don't understand critique</td>
<td>6.1%</td>
<td>0.6%</td>
<td>3.1%</td>
</tr>
<tr>
<td>No applicable category</td>
<td>5.3%</td>
<td>3.2%</td>
<td>9.4%</td>
</tr>
</tbody>
</table>

*Total does not equal 100 as response may be in more than category. Percentages differ from those reported in abstract as positive responses not included.
Technologist responses

• Fewer did not understand or disagreed with critique.
• More responses included a plan to improve.
Improved communication

• Some of the radiologist feedback was regarding positioning or other patient factors.
• Technologist may communicate limitations to optimal exams at the time the exam is performed via “sticky notes.”
• Technologists also provide additional history/information via “sticky notes.”
Sticky notes in GE Centricity PACS can help with technologist communication
Sticky notes

Number of Sticky Notes Compared to Feedback Response Rate

Doubled number of Sticky Notes from first time period
Radiologist survey update

- Repeat survey of radiology attendings and residents on April 2013
  - Radiologist using tool increased from 56% to 65%
  - Number receiving responses rose from 12% to 58%
Conclusions

- Improved technologist response rate from 20% to over 95%
- Radiologists added more specific comments to feedback.
- Technologists provided additional information at time of exam via “sticky notes.”
- Improved communication decreased number of unresolved reports.
Next Steps

- Follow up satisfaction survey for technologists and radiologists
- Continue to solicit ways to improve process from radiologist and technologists
- Use data collected in the feedback tool as teaching materials for technologists and radiology residents