Chest CT Reports: Templates or Not?

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Template (tem·plet (tmplt)n.)*

2. *Computer Science*: A document or file having a preset format, used as a starting point for a particular application so that the format does not have to be recreated each time it is used.

*http://www.thefreedictionary.com (accessed 1-1-14)

Report of the Future*

“An ideal structured report is subdivided into meaningful sections which (sic) are consistently ordered and contain standard language.”


Disclosures:

I have no financial or other conflicts of interest to disclose

Structured Reporting (SR)

- A topic of active research in radiology and informatics for about two decades
- Structured radiology reports were formalized as “The radiology report of the future” in 2008*


Report of the Future*

- Intersociety Conference Participants: “felt that a repository of “best practices” reports would be a helpful resource for … practices.”
Question 1

- Have you ever accessed the RSNA Radiology Reporting Initiative Website (http://www.rsna.org/Reporting_Initiative.aspx) to evaluate their template library?
  - A. Yes
  - B. No

Question 2

- If you answered “yes” to question 1, did you adapt any of the available RSNA chest CT report templates for use by your practice?
  - A. Yes
  - B. No

Essential Attributes of a Structured Report*

2. They have a consistent organization (itemized-preferred by referring physicians)
   - Findings:
     - Support Devices:
     - Heart/Pericardium/Great Vessels:
     - Pleural Spaces:
     - Mediastinum/Hila:
     - Neck Base/Chest Wall/Diaphragm/Upper Abdomen:
     - Lungs:


Report of the Future*

- Intersociety Conference Participants:
  - Agreed that “local radiology groups may prefer to adapt consensus report templates to local practice patterns.”


Essential Attributes of a Structured Report*

1. They have a structured format
   - Headings and paragraphs distinguish the basic elements of the report
     - History
     - Findings
     - Conclusions

Typical Narrative Report

Essential Attributes of a Structured Report*

3. They use a standard language (lexicon)
   - ACR:
     - BI-RADS
     - Lu-RADS (in active development)
   - RSNA:
     - RADLEX
   - Fleischner Society:
     - Glossary of terms for thoracic imaging


Report of the Future*

Intersociety Conference Participants:
- “also recognized the continuing need to capture conventional free text narrative.”


Question 3

For chest CT, do you generally use the:

A. “Narrative style” of reporting with minimal templating (history/findings/conclusions)
B. “Itemized style” of reporting with numerous subheadings in the “findings” category

Templates

“One of the simplest and most practical knowledge representations is the report template: a list of reporting element placeholders that prompt radiologists as they create reports.”

Chest CT Report Templates

- Fulfill 2 of 3 “essential attributes” of structured reports
  - They have a structured format
  - They have a consistent organization

- Can be used with conventional dictation, with speech recognition, or with other report generation systems

Feeling Constrained Now?

Report of the Future*

- Intersociety Conference Participants:
  - Noted that “professional radiology societies should take a leadership role in the development of reporting best practices.”


Northwestern Medicine
Basic Chest CT Templates

<table>
<thead>
<tr>
<th>Procedure</th>
<th>CT Chest W. (Pulmo from RIS).</th>
</tr>
</thead>
<tbody>
<tr>
<td>History</td>
<td>History</td>
</tr>
<tr>
<td>Technique</td>
<td>Nonionic contrast-enhanced initial bolus CT was performed.</td>
</tr>
<tr>
<td>Comparison</td>
<td>Comparison</td>
</tr>
<tr>
<td>Findings</td>
<td>Cardiac Rule: Study performed on the left side.</td>
</tr>
<tr>
<td></td>
<td>Right Pulmonary Vein: Lobe</td>
</tr>
<tr>
<td></td>
<td>Right Pulmonary Artery: Lobe</td>
</tr>
<tr>
<td></td>
<td>Thoracic Uterus: Lobe</td>
</tr>
<tr>
<td></td>
<td>Normal heart, lungs, diaphragm</td>
</tr>
<tr>
<td></td>
<td>No lesions visible in mediastinum, body wall</td>
</tr>
<tr>
<td></td>
<td>Lung: Normal</td>
</tr>
<tr>
<td>Conclusions</td>
<td>1. (Not to auto number.)</td>
</tr>
</tbody>
</table>

Question 4

- In your practice, which report generation system do you typically use:
  - A. “Conventional Dictation”
  - B. Speech Recognition (with an available non-physician editor)
  - C. Speech Recognition (entirely self-edited)
  - D. Other systems (such as point and click)

Question 5

- Should the STR take an expanded leadership role in the development of standardized chest radiology templates in support of reporting best practices?
  - A. Yes
  - B. No
Template (SR)* Pros and Cons

Pro
- SR offers beneficial features
  - BI-RADS helped drive QI in Mammography

Con
- SR interferes with the image interpretation process
  - Complexity of input systems
  - Reduced visual “dwell” time


Template (SR)* Pros and Cons

Pro
- New technology can insure productive SR

Con
- Point/click reporting is impractical for complex cases


Template (SR)* Pros and Cons

Pro
- SR enhances quality of care
  - Decreased variability
  - Fewer errors
  - Improved communication

Con
- Radiologists will resist cumbersome and unpopular reporting systems


Template (SR)* Pros and Cons

Pro
- Change is difficult but necessary to improve quality

Con
- Even streamlined reporting may disrupt the interpretation process


Why Don’t We Use Templates?

- Difficulty of use
  - Varies by input system
  - We need major systematic improvements here

- Potential for loss of freedom of expression
  - Fight lexicons that constrain

- Fear of distraction related mistakes
- Resistance to or fear of change

Why Should We Use Templates?

- Potential for improved report quality
  - Better grammar/structure
  - Fewer errors
  - Improved consistency (inter/intra)
- Potential for improved information transfer
  - Physician preference
  - Patient preference
  - Automated follow up reminders

Why Should We Use Templates?

VALUE!

Thank You!

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References


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