A Survey of Attitudes of Academic Radiologists towards Structured Reporting

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NO RELEVANT DISCLOSURE
BACKGROUND

- Radiology reports aid in clinical decision making and serve as permanent medicolegal records. They must be clear, consistent and comprehensive\(^1\).
- Structured radiology report allows clinicians to easily and quickly mine the report for important clinical information that guide patient care management\(^2\).
- The ACR strongly advocates structured reporting.
- However, in practices, there are many obstacles to adoption of structured reporting\(^3\).
- One cohort study in 2009 found that structured reporting was overly constraining with regard to report content and time-consuming to use\(^3\).
PURPOSE

We evaluate the *reporting styles and attitudes towards structured reporting* of a diverse group of academic radiologists at a tertiary teaching hospital in a major US metropolitan area.
MATERIALS/METHODS

- We analyzed a total of 240 reports.
- We randomly selected 30 reports, in each category of:
  - CT abdomen/pelvis
  - CTA chest (Pulmonary Embolism protocol)
  - ER Chest x-ray
  - U/S abdomen
- *Before and after* the launch of new speech recognition software coinciding with department-wide dissemination of structured templates with subspecialty input.
- We also surveyed the radiologists' reporting preferences and opinions.
- Chi-square test was performed with a threshold for statistical significance of $p < 0.05$. 
RESULTS

- With the adoption of new software, there is statistically significant increase in *structured reports* in (pre-intervention vs post-intervention):
  - CT abdomen/pelvis (33% vs 72%, \( p < 0.001 \))
  - ER Chest X-ray (0% vs 41%, \( p < 0.001 \))
  - U/S abdomen (0% vs 80%, \( p < 0.001 \)).
  - No statistically significant increase in structured reports in CTA chest (PE) group (36% vs 43%, \( p = 0.52 \)).

- Similarly, there is statistically significant increase in *structured resident-generated reports* in (pre-intervention vs post-intervention):
  - CT abdomen/pelvis (9% vs 71%, \( p < 0.001 \))
  - ER Chest X-ray (0% vs 9%, \( p < 0.001 \))
  - U/S abdomen (0% vs 83%, \( p < 0.001 \))
  - No statistically significant increase in resident-generated structured reports in CTA chest (PE) group (52% vs 59%, \( p = 0.31 \)).

- Of note, the department of radiology considers adoption of structured templates completely voluntary.
Use Of Structured Reporting

**CT ABDOMEN/PELVIS**

- Before Intervention: 67%
- After Intervention: 72%

**ER CHEST X-RAY**

- Before Intervention: 100%
- After Intervention: 0%

**U/S ABDOMEN**

- Before Intervention: 100%
- After Intervention: 20%

**CTA PE PROTOCOL**

- Before Intervention: 36%
- After Intervention: 45%
SURVEY RESULTS

- A survey was sent out after the launch of new speech recognition software.
- 24 out of 55 academic radiologists responded to the survey.
- **Self-reported adoption** of:
  - Departmental (structured) templates increased (4.2% vs 12.5%, p < 0.001),
  - Departmental templates with minor modifications (42% vs 71%, p < 0.001) increased,
  - Non-structured templates decreased (45.8% vs 8.3%, p < 0.001).
SURVEY RESULTS

PRIOR to implementation of PowerScribe 360, did you use templates?
Answered: 24  Skipped: 0

If you did not use templates PRIOR to PowerScribe 360, why not?
Answered: 23  Skipped: 1

AFTER implementation of PowerScribe 360, are you using templates?
Answered: 24  Skipped: 0
SURVEY RESULTS

What is the most important feature of a good template? Please rank from most to least important (1 as most important, 6 as least important).

Answered: 24  Skipped: 0

Do you think structured reports efficiently communicate findings? Please select all that apply.

Answered: 24  Skipped: 0

Answer Choices
- Yes, they make it easier for clinicians to read
- Yes, they assure nothing is missed
- Sometimes, but occasionally findings do not fit into "boxes" or there are a constellation of related findings that apply to multiple headings (ex: cholelithiasis causing gallbladder and pancreas pathology, fits into both "biliary" and "pancreas" headings)
- No, I think free dictating allows for a more logical flow of thought
- No, I think templates are inefficient

Responses
- Yes, they make it easier for clinicians to read 37.56% 9
- Yes, they assure nothing is missed 16.67% 4
- Sometimes, but occasionally findings do not fit into "boxes" or there are a constellation of related findings that apply to multiple headings (ex: cholelithiasis causing gallbladder and pancreas pathology, fits into both "biliary" and "pancreas" headings) 75.00% 18
- No, I think free dictating allows for a more logical flow of thought 16.67% 4
- No, I think templates are inefficient 4.17% 1
Attitudes Towards Structured Reporting

- Reasons for NOT using structured reports:
  - Non-structured reporting is faster (1/24, 4%)
  - Non-structured reporting produces better reports (2/24, 9%)
  - It takes times to make templates (1/24, 4%)
- “Must have’s” of a “GOOD” template
  - Uniformity on follow-up exams (48%) >
    - Maximal billing (26%) >
      - Completeness = Intuitive flow (9% each) >
      - Efficiency (4%)
- Structured reporting helps in ensuring accurateness of billing.
- Structured reporting makes it easier to read and ensures nothing is missed, but occasionally findings do not fit into "boxes" or there are a constellation of related findings that apply to multiple headings
  - Ex. choledocholithiasis causing gallbladder and pancreas pathology, fits into both "biliary" and "pancreas" headings.
STUDY STRENGTHS & WEAKNESSES

◊ STRENGTHS
  ◊ Prospective design
  ◊ Active Intervention
  ◊ Control and Experimental group (pre and post intervention)

◊ WEAKNESSES
  ◊ Single center
  ◊ Small sample size
  ◊ Poor response rate (< 50%)
  ◊ Unblinded
  ◊ Only examined 4 categories of reports
  ◊ Small chest subspecialty group - CTA Chest PE reports were dictated by 3 full time staff radiologists.
CONCLUSION

- Majority of the surveyed academic radiologists embraced structured reporting.
- This change is partially resident-driven, not surprising in the academic setting.
- Academic radiologists are willing to adopt structural reporting when an external catalyst (in our case, a new speech recognition software that auto-populates structured templates) addresses their needs, exemplifying the customer-driven theme of quality improvement.
- Less than 100% voluntary adoption rate of structured reporting may stem from preferences of some academic radiologists for key elements in a good template, that the existing structured templates are NOT addressing.
- Issues raised need to be addressed in order to fulfill unmet reporting needs, streamline clinical communication, and ultimately improve patient care outcomes.
REFERENCES

