Quality Initiative to Improve the Transcription Process of Image Requisition Documentation

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Introduction

Inaccurate and incomplete information remains a persistent and serious problem in multiple radiology settings [1-2]. Accurate study indications and clinical histories have been shown to improve interpretive accuracy and efficiency, can potentially affect patient safety, and carry billing implications [1-5]. Prior studies have revealed that as many as 30% of requisitions lacked adequate clinical indications for the study, and 24% lacked clinical information vital to proper image interpretation [3,5]. Registration clerks are an important source of errors, both grammatical and content [1]. Clerks play a critical role in choosing which information to transfer from the clinical provider's order to the radiology imaging requisition [1]. The purpose of our study was to improve the transcription process of image requisition documentation involving the radiology information system (RIS) (Figure 1).

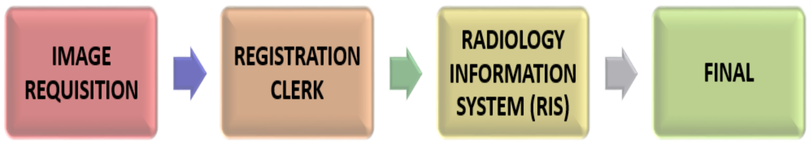


Figure 1. Information pathway.

Materials & Methods

- Five hundred radiographic examinations were chosen randomly from the Picture Archiving and Communication System and categorized according to their degree and quality of concordance of the study indication with their corresponding clinical order.
- A root-cause analysis was performed (Figure 2).

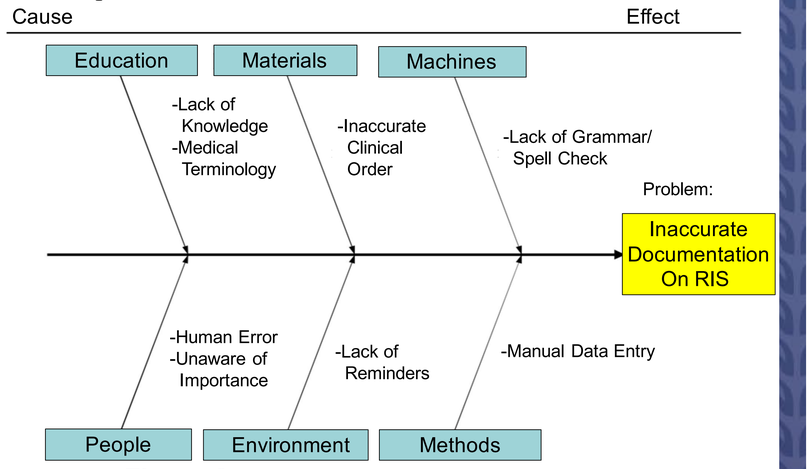
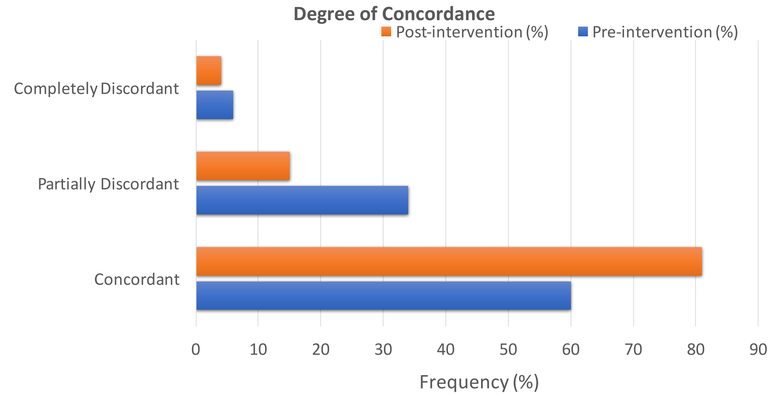


Figure 2. Root-cause analysis.

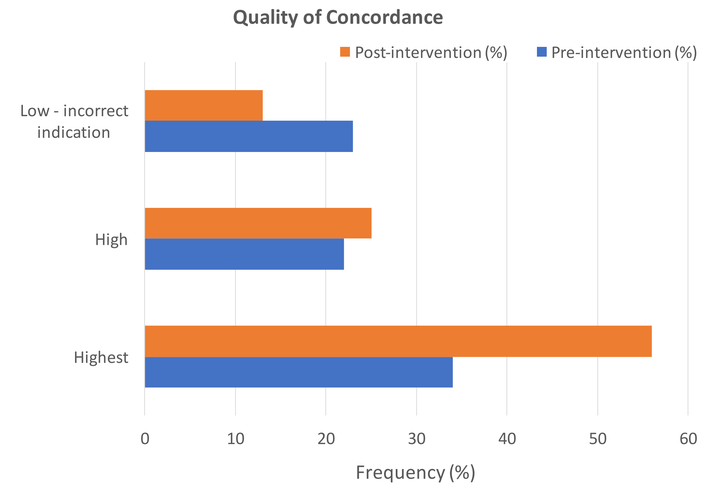
- An intervention was performed focusing on education of staff responsible for the transcription process, which included a team meeting and reminder poster placed at each workstation.
- A second sample was obtained one month following the intervention and a comparison was made using the Chi-square test ($P<0.05$ was considered statistically significant).

Results



Degree of Concordance	Definition
Completely Discordant	Substantial information missing from the RIS.
Partially Discordant	Information appearing on clinical order but fails to appear on RIS.
Concordant	Indication / clinical history match between clinical order and RIS.

Figure 3. The degree of concordance between information appearing on clinical order compared to information transcribed to RIS before and after intervention.



Quality of Concordance	Definition
Low	Significant grammatical errors that added ambiguity or could easily be misunderstood.
High	As above but contained grammatical errors (incorrect capitalization, unwanted abbreviation, misspellings or misused punctuation marks).
Highest	RIS indication contained a complete and informative patient history, and was free of any grammatical errors.

Figure 4. The quality of the concordance between information appearing on clinical order compared to information transcribed to RIS before and after intervention.

Results

- 40% of the pre-intervention documents were not concordant. Post-intervention demonstrated a 21% overall improvement in concordance (Figure 3, $p<0.001$).
- 34% of the documents from pre-intervention were partially discordant, lacking adequate clinical information, compared to 15% post-intervention (Figure 3, $p<0.001$).
- There was a 22% post-intervention increase in the number of transcriptions that possessed the highest quality of concordance, meaning verbatim transcription free of grammatical errors (Figure 4).

Conclusion

Educating staff members responsible for transcription of study indication and clinical history, along with a reminder poster placed at each workstation, significantly improved the concordance and quality of the information presented to radiologists on the RIS document.

Future Directions

- While a statistically significant improvement was seen, the longevity of these improvements is unclear. A future study would be beneficial to explore the long-term effects of the intervention, and whether periodic repeated interventions could extend the longevity of the positive effects.
- Technology can serve as a source of improvement, such as implementation of a spell check function.
- Computerized Physician Order Entry implementation may eventually eliminate the need for transcription.

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