

## Satisfaction with Imaging Reports in Emergency Settings



In emergency settings, timeliness, readability, and accuracy of imaging reports are of the utmost importance for case management. This study aimed to determine physicians' preference towards three types of structured imaging reports — basic structured report (BSR), itemised report (IR), and point-and-click report (PCR) — used in emergency radiology.

Study results show that, in emergency settings, physicians preferred IR over PCR and BSR. IR and PCR were equal in report quality metrics, but IR was most preferred in the process of reporting. BSR ranked last in both quality and process. The findings are published in the journal *Academic Radiology*.

"Physicians thought IR was the best to present quality content within imaging reports, followed by PCR and BSR. IR had the highest scores in all aspects of content quality including coverage of every organ systems, complete explanation of abnormal/normal findings, and ability to answer necessary clinical questions," according to Naree Manoonchai, MD, Department of Diagnostic and Therapeutic Radiology, Ramathibodi Hospital (Bangkok, Thailand) and co-authors.

BSR has the following headings: examination name, clinical history, findings, and conclusion/impression. The IR report has additional subheadings to BSR, for example, specific techniques and individual organ system. Finally, PCR report mirrors IR counterpart with additional selectable answer choices and blank spaces that can be used for complicated cases.

### Materials and Methods

The investigation was performed at an academic tertiary hospital with 24/7 access to Emergency Department (ED). Survey questions were created and considered valid and reliable based on index of item objective congruence from three specialists (>0.75) and a pilot of 25 subjects (Cronbach alpha, 0.83–1.00).

Respondents included trainees and attendings in radiology and referring physicians working in the academic emergency department at the time of survey rollout. They were provided report examples of each type and asked to complete an online questionnaire consisting of the following five parts: demographics, necessity of imaging report, report quality (content, format and organisation, and language), process of reporting, and components of imaging report. All responses were voluntary.

For rating scores, the higher value means the higher preference and agreement. A 10-point Likert scale (most dislike, 1; most like, 10) was used for preference to add a greater level of detail of liking that the respondents could express for a particular pattern of reporting. For agreement, a 5-point scale (strongly disagree, 1; strongly agree, 5) was used, because five levels of agreement were considered adequate for questions (less granularity needed).

### Results

The survey had a 79.5 percent response rate. Respondents included 101 physicians (mean age, 29.4 years; 61 radiology physicians and 40 referring physicians; 81 trainees and 20 attending).

Overall, IR was preferred over PCR and BSR by all physicians with scores (out of 10) as follows: IR, 7.62–8.83; PCR, 6.62–8.55; BSR, 5.23–6.65;  $P < .001$ . IR received scores (out of 5) of 4.03–4.37, PCR 3.32–4.52, and BSR 2.59–3.86 for report quality. For process of reporting, IR had scores (out of 5) of 3.80–4.56, PCR 2.79–4.09, and BSR 2.32–3.56.

Both radiology and referring physicians agreed that history, techniques, contrast media, comparison study, quality of examination, normal size of organs, recommendation for further imaging or nonimaging technique, organisation recommendation, and result notification information should be included in the imaging report.

### Conclusions and Discussion

IR's adaptive interface and speed of reporting process, with minimal retraining required, are fundamental to the strong preference for type of report. IR can be enhanced by integrating some features of PCR such as direct description of findings in subheadings, allowance of "normal" as a common descriptor in subheadings (instead of listing negative findings for organ system), and so forth.

For PCR, the user interface can be improved. The functionality and ability for adaptive input of texts can be added. Although the process of

improvement and implementation of IR and PCR is iterative and ongoing, the future of imaging report is to ensure that the needs of all stakeholders are met.

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