Value-based Assessment of Radiology Reports Using Two-way Feedback System

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Background

We are ushering in an era of value-based healthcare, wherein all aspects of medical care are being quantified and accounted for in order to improve quality and reduce costs. Radiology as a specialty is under immense scrutiny to transform its current structure, which adds enormously to healthcare costs, and is under pressure to construct a more efficient system that incorporates essential metrics to assess its value and impact on outcomes. The current system ties radiologists’ incentives and evaluations to RVU-based productivity metrics and peer-review-based quality metrics. In the new model, a radiologist’s performance will have to increasingly depend on a number of parameters that define “value,” beginning with peer review metrics that include referrer satisfaction and feedback from radiologists to the referring physician that evaluate the potency and validity of clinical information provided for a given study. These new dimensions of value measurement will directly impact the cascade of further medical management. We share our initial experience with two pilots that we introduced to our clinical radiology workflow to capture referrer-based and radiologist-based feedback on radiology reporting.

Evaluation

We designed two pilot projects focusing on capturing the two-way feedback between the radiologist and the referring physician: RESP (Referrer Evaluation System Pilot) that assesses referring physician’s feedback on a radiology report and FRACI (Feedback from Radiologist Addressing Confounding Issues) that evaluates the radiologist’s feedback to the referring physician on the validity, relevance, and potency of the information provided regarding the ordered study. The pilots were introduced to the clinical workflow throughout a large multihospital health system, and data entries were collected from October 11, 2015 to December 11, 2015, which was then parsed based on modality for both pilots. The RESP data was further parsed based on the helpfulness/unhelpfulness gradation scale of feedback response. The FRACI data was further categorized based on the scope for improvement in patient care gradation of its response.

The RESP dataset comprised of 88 entries over a period of 9 weeks since launch. Based on the referrer feedback, reports on 57 studies (65%) were deemed very helpful (highest scoring modality - DX with 26 entries, followed by CT at 18). 11 studies (13%) were reported as somewhat helpful. There were 8 (9%), 6 (7%), and 6 (7%) studies reported to be neutral, unhelpful, and problematic, respectively [chart 1].
The FRACI pilot included 154 entries in the same period. There were 97 (63%) entries reporting lack of pertinent clinical history provided, 93 of which were CT reports, 10 (6%) reported to have a more specific clinical question, 27 (18%) were reported to be unhelpful for other reasons, while there were none that reported that an alternative study had been ordered [chart 2]. The remaining 20 entries (13%) provided only comments outside of the given reasons.
Discussion

Value-based healthcare model requires us to adopt methods that are geared towards improved quality and reduced waste/cost. A large share of healthcare expense is attributed to medical imaging. Therefore it is imperative that radiology practices are assessed for quality, outcomes, and value.
There has been a lot of focus on error reporting in radiology practices, and errors related to positioning, incorrect accession, laterality, among others have been pointed out [1]. Quantifiable methods have been attempted to provide objective feedback to radiology reporting as well [2]. However, the communication between the radiologist and the referring physician is of critical importance in order to ensure judicious and effective use of resources and assure optimal quality of radiology reporting. One of the two channels in this communication is the radiologist’s feedback to the referrer on the adequacy of the ordered study and the relevance and sufficiency of the information provided. Ordering a radiology study is akin to a consult that one might request from Infectious Disease specialist for a case of meningitis or Rheumatology for Systemic Lupus Erythematosus. This means that the reason for consult (exam) has to be clearly indicated, along with a working diagnosis (when available) and a discrete clinical question that needs to be answered. One of the most common concerns that radiologists address is the lack of provided information and a clearly delineated clinical question. This can lead to significant confusion on the radiologist’s part, leading to potential errors in reporting and inefficiency in terms of extra time spent on acquiring the needed information from the patient’s chart. Radiologist’s feedback in terms of completing the loop, when it comes to the completion of the study is also of immense importance. Automated and standardized methods to ensure prompt notification of radiology findings have also been shown to increase efficiency in radiology practices [3].

On the other hand, like any service provider, a radiologist’s performance is dependent on feedback provided by the ordering physician on the radiology report itself. In the medical community, there lingers a sense of disconnect and lack of understanding between the referrer and the radiologist [4]. In a large multihospital system where radiology interpretations tend to be decentralized this can be further accentuated leading to hedging and guesswork on the radiologist’s part and lack of confidence in the reports by referring physicians. The end result is over-ordering of radiology studies and underutilization of the information within reports. This is a significant problem, especially given the fact that radiologic procedures add immensely to the healthcare costs. Another major consequence is compromised patient management. There have been calls for “non-traditional” approaches to improve clinical visibility of radiologists, some of which focus on direct patient communication [4]. Attempts have also been made to implement structured feedback systems for referring physicians to identify problems in radiology practices [5]. One remedial approach to address the issue of report quality is advocated by Daniel Rubin, in terms of creating a standard terminology (RadLex) to improve clarity, reduce errors and variation, etc. [6].

Our pilots, RESP and FRACI capture essential data that allows us to identify key issues in the communication between the radiologist and the referrer, which as we understand, needs to be clear and adequate for radiology to be properly utilized as a consult service.

The initial results from the RESP was consistent with previous findings from other institutions, which suggested that referrer satisfaction on radiology reports ranges from 70% to 86%. [7-11]. Diagnostic studies like plain film radiographs followed by CT were the highest in the satisfaction score. FRACI results were also consistent with the expected trends of lack of pertinent history being the major concern of radiologists in general. The disproportionately high responses for CT exams in the FRACI pilot may be explained by the increased level of complexity of clinical history of the patient undergoing the CT exam. One suggestion is to create a clinical synopsis for the reporting radiologists as a remedy for this problem in general [12].

We expect the feedback collected from these applications will increase as we share initial results with the user communities and ongoing use will enable us to analyze the trend of referrer satisfaction and more importantly how certain events and behavioral changes affect this trend. We aim to report this in our proposed paper.
Conclusion

Based on the early data derived from these pilots, lack of pertinent clinical information was by far the predominant concern of the radiologist. The referrers’ found most of the radiology reports very useful, especially the basic diagnostic radiography studies. Feedback systems such as these will be key in the value assessment of radiology reporting in the era of value-based healthcare.

Reference


Keywords

Value, Radiology, Assessment, Feedback