Etiologies for Radiology Addenda for CT and MRI Body Imaging: A Six Month Retrospective Review of over 10,000 Patients
Authors:
Martha Ksepka, MD
Jeffrey Kempf, MD, FACR
Victor DeCarvalho, MD

The authors have no disclosures.
There are few studies reporting on the frequency and etiologies of radiology report addenda.

Analysis of radiology addenda may be used in quality improvement.
To review report addenda for Body CT and MRI with regards to the frequency, etiology, time to creation as well as potential minor versus major clinical impact, to help identify potential methods for improving patient care and reporting.
10,043 Body (including cardiac and musculoskeletal) CT and MRI reports were retrospectively reviewed.

Study was given exemption by the IRB.

Montage, a data-mining program, was used to search for the word “addendum” in Body CT and MR reports from January 1, 2015 to June 30, 2015 at an Academic Level I Trauma Center.

Reports with the words “billing” and “biopsy” were excluded.

Addenda were categorized by frequency, etiology, time to creation, minor versus major patient clinical impact.

In addition, addenda were categorized by same versus different radiologist who interpreted the initial study.
Results: Frequencies

- 81 Body CT addenda: 0.8%
  - Most common exam: CT Chest, Abdomen, and Pelvis (n=54)
    - 33% of these addenda were done to report a missed finding

- 24 Body MRI addenda: 0.2%
  - Most commonly of Cardiac MR (n=8)
    - 50% these addenda were done to report a typographical error

- Overall Frequency: 1.0%
Results: Etiologies for Addenda

1. To report a missed finding: 28.6% (n=30)
2. To further clarify a finding or diagnosis: 27.6% (n=29)
3. To do a comparison with a prior study: 19% (n=20)
   - 65% of comparison studies were available at time of initial read
4. To correct typographical errors including voice recognition and/or structured reporting errors: 8.6% (n=9 including 1 case of incorrect laterality regarding a breast mass)
5. To document report communication: 5.7% (n=6)
6. To add to the impression based on additional clinical information: 4.8% (n=5)
7. To have the study reinterpreted by a specialist radiologist: 2.9% (n=3)
8. To report an administrative error or error in the technique: 2.9% (n=3)
Etiologies of Addenda

- Missed finding 28.6% (n=30)
- Clarification of finding or impression 27.6% (n=29)
- Communication 5.7% (n=6)
- Additional Clinical Information 4.8% (n=5)
- Reinterpretation by specialist radiologist 2.9% (n=3)
- Typographical Error 8.6% (n=9)
- Administrative or technique error 2.9% (n=3)
Results

- Cumulative frequency of addenda created within 10 min/30 min/60 min/24 hours was 7.6%/17.1%/23.8%/65.7%, respectively.
- 17.1% (n=18) less addenda would have been created if the time to report finalization was changed from 3 minutes to 30 minutes.
- Most common reasons for addendum creation was to report a missed finding (35%), report a typographical error (20%), and to compare with a prior exam (20%)
81% of addenda resulted in minor or no clinical change.

19% were deemed as having the potential for major clinical impact, i.e. significant morbidity or mortality.

No adverse patient outcomes.

Of the 20 studies that had potential for major clinical impact, 70% were reported within 24 hours.
20/105 of all addenda were made by radiologists who did not read the original study.

20 addenda were made for comparison purposes; 4/20 addenda were made by a radiologist who did not read the original study.
Conclusions

- Low overall frequency of Body CT and MR addenda (1%).
- 17.1% of addenda could have been avoided if the time to finalization of a report was 30 minutes instead of 3 minutes.
- 65.7% of addenda were created within 24 hours.
- Most addenda had minor clinical impacts.
- 12% of addenda were made to compare to studies that were available when the original report was created.
- 81% of addenda had minor or no clinical change.
- No major adverse patient outcomes found.
References