QuickSafety
An advisory on safety & quality issues

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Speech recognition technology translates to patient risk

Issue:

The use of voice or speech recognition technology (SRT) for health care documentation has put patients at risk for injury and death. While SRT has notable benefits, its vulnerabilities can lead to tragic outcomes.

In one case related to SRT, a medical malpractice claim yielded the seventh-largest jury verdict for 2012 when a jury awarded $140 million in punitive damages to a patient's family. The patient, a lifelong diabetic, was admitted to a hospital when she developed a blood clot in her dialysis port. Upon discharge, she went to a rehabilitation facility. A nurse at the hospital transferred the patient's information to the rehabilitation hospital. Instead of obtaining the medication reconciliation document and the patient transfer order, the nurse obtained the information she needed from a copy of the doctor's dictated discharge summary, which had been sent out of the United States for editing. The transcription contained errors, including a notation that the patient was to receive 80 units of insulin instead of 8 units. At the rehabilitation hospital, the patient received an incorrect dosage, which caused brain damage, cardiopulmonary arrest, and death.[1]

Increasingly, SRT documentation methods are integrated with clinical decision support and employ the clinician as editor, bypassing third-party editing by a healthcare documentation specialist (HDS). This approach is intended to increase efficiency, reduce turnaround time, and decrease patient risk, but often the text is not carefully reviewed and edited for accuracy. Text capture by SRT should always be edited for accuracy by either a third-party editor (backend SRT, as in the example above), which is preferred, or in real time by the author (frontend SRT).

Examples of critical health care documentation errors

- **Spoken:** The patient is on **40** mg of Lasix.
  Captured: The patient is on **400** mg of Lasix.
- **Spoken:** He had **no** episodes of unconsciousness en route.
  Captured: He had episodes of unconsciousness en route.
  (Omitted no)
- **Spoken:** Allergies: Sulfa (next).
  Captured: Allergies: Xopenex.
- **Captured**: The patient p/w AMD and dizziness. Dr. Zee was CTSP in c/s. She was admitted to GMF. She o/w only complained of LEE. She was MA4E. The attending DTWP and after E&M with MMSE will d/c to ECF.

However, in both frontend and backend editing workflows, the use of SRT has still resulted in poor written communication and an increase in errors due to:

- Improper use and expectations of SRT's capabilities.
- Mismanagement of SRT with degradation of translation accuracy.
- Apathy of overworked physicians.
- Disregard for standards of style, grammar and readability.
- Industry-wide indifference to certification, continued education, and professional development of HDSs.

Other factors contributing to poor documentation include insufficient comprehensive quality assurance and process-improvement programs for health care documentation with a lack of accountability, minimal regulatory oversight, and almost no monitoring of documentation processes.[2]

Various studies have documented significant error rates using SRT. A study by Goss *et al* found an average of 1.3 errors per SRT-generated emergency department note with 15% of those errors considered clinically significant.[3] Topaz et al found that physician-created notes generated by SRT contained four times the rate of errors compared to non-SRT notes,[4] and in 2018, Zhou et al reported an error rate of 7.4 errors per 100 words in pre-edited documents and 4 errors per 1000 words after review by an HDS.[5]

(Cont.)

Some records are found to contain disclaimers to point out the problems with SRT that can result in a patient-safety event. One example of a disclaimer reported to The Joint Commission is: *"Portions of the record may have been created with voice recognition software. Occasional wrong-word or 'sound-a-like' substitutions may have occurred due to the inherent limitations of voice recognition software. Read the chart carefully and recognize, using context, where substitutions have occurred."*

Errors in the record are often propagated, increasing the likelihood of an impact on patient care. In addition, errors degrade the patient's trust, confidence, and perception of quality of care.[2] Unchecked documentation methods facilitate greater amounts of bad data that promotes quantity over quality; undermine clinician cooperation and collegiality; impact the revenue cycle and reimbursement; and may lead to compliance issues and legal challenges. Nevertheless, "systems for checking the accuracy of notes are almost nonexistent."[2]

According to health care documentation expert Laura Bryan, MS, MT (ASCP), CHDS, AHDI-F, quality documentation is everyone's responsibility. "A culture of respect combined with a continuous quality improvement program that involves every step of the documentation process and a nonpunitive quality assurance program focused on edification, are necessary to achieve the quality and accuracy required for medicolegal documents." Bryan serves on the board of directors of the Association for Healthcare Documentation Integrity (AHDI) and is the author of AHDI's *Book of Style and Standards for Clinical Documentation*, 4th edition.

Safety Actions to Consider:

Ongoing quality assurance and the use of best practices in healthcare documentation are critical to the delivery of safe patient care and the avoidance of patient harm related to transcription.

The following recommendations for improvement are from the healthcare documentation industry.[6]

Apply the principles of quality in implementing the quality program for the documentation process, which includes SRT. Quality assurance programs ensure the fitness and integrity of the document as a whole and look for root causes to eliminate faulty procedures. This type of QA program is different from Clinical Documentation Improvement (CDI), which primarily focuses on the accurate representation of services for coding and billing. A well-designed QA program, in addition to CDI, is essential for a culture of safety in high-reliability organizations. It recognizes information as a strategic organizational asset and helps achieve organizational goals. The actual process of implementing the quality program can be specific to each organization, but the application of the principles of quality should be at the core of the program.

- Establish an adequate QA budget for personnel, resources, software, and continuing education. A suggested starting point is 3% of the total departmental budget.
- Establish quality assurance policies and procedures in each facility. Distribute policies and procedures to all documentation authors and HDSs. Establish facility specifications and maintain databases of pertinent, facility-specific information.
- Train the quality assurance staff in the computation methods described in the *Healthcare Documentation Quality Assessment and Management Best Practices*,[6] and promote consistency and objectivity among the editing staff. Acknowledge and encourage development of critical thinking skills, continued education in the definition and application of the quality standards, and successful mentoring skills.
- Establish a feedback mechanism for authors and HDSs that is education-based. Errors should be identified within their context. Track improvements following intervention and map any trends.
- Follow guidelines for appropriate intervals for quality assurance.
- Compile results of the QA review findings and provide reporting as needed by various departments or stakeholders at prescribed intervals.
- Provide ongoing staff development, especially in areas where quality issues are identified.
- Cultivate stakeholder buy-in, administrative support, and physician champions.

Assess specific and unique factors that affect the outcome of the documentation process, including workflow, turnaround time, and technology.

- Establish efficient yet practical workflow procedures for backend speech recognition editing so that accuracy and turnaround times are achievable.

- Establish workflow procedures for routine assessment of 1% of SRT documents to be edited by an HDS. If possible, reviews should be performed prior to document delivery to the chart; otherwise, retrospective reviews are valuable for ensuring document integrity and continuity of care. Documents pulled for review should be selected randomly.

Encourage health information management departments to have continuous quality improvement (CQI) processes in place like other hospital departments in which the quality and appropriateness of services is defined and measured with the aim to:

- Identify problems and continually improve processes.
- Establish proofreading requirements.
- Establish an educational process and feedback mechanism for dictators to improve dictation quality.
- Address the use of outsourcing and offshoring, especially if used for SRT.
- Encourage the use of AHDI's *Book of Style & Standards for Clinical Documentation*, 4th edition, which includes style rules adapted to SRT and the EHR with guidance on editing in these environments. It also covers best practices in clinical documentation capture.
- Establish guidelines for handling discrepancies, errors, missing information, and the inappropriate use of verbatim transcription.
- Establish policies and procedures for monitoring quality of documentation produced by clinicians using speech recognition technology.

Report health care documentation events that impact patient safety to The Joint Commission for a comprehensive systematic analysis, corrective action plan, and a plan to measure improvement. See the Sentinel Event policy and procedures for more information.[7]

Resources:

1. Alabama Law Weekly. (ISSN 1063-2603) (USPS 22591), published by M. Lee Smith Publishers®.
2. Bell SK, Delbanco T, Elmore JG, et al. Frequency and Types of Patient-Reported Errors in Electronic Health Record Ambulatory Care Notes. *JAMA Network Open*, 2020;3(6), e205867-e205867. http://doi.org/10.1001/JAMANETWORKOPEN.2020.5867
3. Goss FR, Zhou L, and Weiner SG. Incidence of speech recognition errors in the emergency department. *International Journal of Medical Informatics*, 2016;93:70-73. http://doi.org/10.1016/j.ijmedinf.2016.05.005
4. Topaz M, Schaffer A, Lai KH, et al. Medical Malpractice Trends: Errors in Automated Speech Recognition. *Journal of Medical Systems*, 2018;42(8). http://doi.org/10.1007/s10916-018-1011-9
5. Zhou L, Blackley SV, Kowalski L, et al. Analysis of Errors in Dictated Clinical Documents Assisted by Speech Recognition Software and Professional Transcriptionists. JAMA Network Open, 2108;1(3), e180530. http://doi.org/10.1001/JAMANETWORKOPEN.2018.0530
6. Association for Healthcare Documentation Integrity. *Healthcare Documentation Quality Assessment and Management Best Practices (Updated July 2017): Whitepaper and Toolkit*).
7. The Joint Commission: Safe use of health information technology, *Sentinel Event Alert* #54, March 31, 2015.

Note: This is not an all-inclusive list.

The Joint Commission.