Continuous Speech Recognition in Radiology Reporting
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Background. The early 1990s saw the development of the first viable voice recognition software. The software was fraught with problems requiring pauses between words and poor word recognition. These characteristics were unacceptable to most individuals and proved impractical in applications other than minimal note writing of frequently repeated phrases. Recent advances in the area of continuous speech recognition have resulted in software with the capability to be viable for everyday use. An implication for the use of such software for the generation of medical records is readily apparent. Speech recognition systems offer a popular alternate computer input method for two principal reasons: speech is a natural form of communication, and speech recognition systems can recognize speech at a rate faster than many people can type.

The speed of report turnaround is a critical quality assurance parameter for radiologists. With improving accuracy and reduced training time, voice recognition systems are becoming more acceptable in radiology reporting.

Methodology. Continuous voice recognition is being implemented in the radiology department of a large teaching hospital in Texas Medical Center, Houston. The goal is to create reports efficiently in real time, reduce total report turnaround time, increase workload capacity and improve overall patient care.

We present the experiences and results of a pilot study. Task and usability analyses were performed to compare voice recognition with conventional dictation and transcription. Impact on workflow and work process was analyzed. Requirements for training and system change were also identified.

Conclusions. Report generation time using voice recognition technology generally totaled less than five minutes. It resulted in the timely availability of records.

Voice recognition is seen to be an easily adaptable modality of radiology report generation after an acceptable short period of training. Accuracy of word recognition is high with scope for incremental and customizable vocabulary building. This system effectively converts report generation and signing to a single step on-line process that saves substantial time by eliminating the traditional manual transcription process. The introduction of voice recognition in radiology could take us one step closer to “real time radiology”.

References