

Evaluation of Structured Data Entry into CattailsMD

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Background: Centuries ago, physicians kept patient's medical history by scribbled notes that were only seen by the author. Today, physicians are one component of a multidisciplinary health care team. A consequence is illegible handwriting by rushed clinicians that cannot be decoded by colleagues. Here, we investigated the utility of new computer applications to allow clinicians to enter information quickly into the electronic medical record (EMR), in a format that is immediately available for additional uses.

Methods: A survey of the literature was conducted to evaluate existing methods for structured data entry in a medical setting. Nine Marshfield Clinic employees (5 clinicians and 4 non-clinicians) were recruited to evaluate 5 new application prototypes for entering clinical information in an ophthalmology/optometry department. Tasks included the entry and correction of cup-disc ratio (C/D), intraocular pressure (IOP), and visual acuity (VA). Data collected included: time on task, error rate, number of clicks, and overall preference. Both qualitative and quantitative analysis was conducted on the collected data.

Results: The majority of participants preferred and found the drop-down menus easiest to use (comparable for both clinicians and non-clinicians). The least preferred prototype was the slider bars with 6/9 (66%) of participants disliking them. The number lines were the second most preferred method although participants indicated that there was a learning curve. The number line had more variance in the number of clicks required to complete a task, but tasks were completed quickly. Handwriting recognition took the longest time (average, 39.66 seconds) to complete. Five working prototypes are now completed.

Conclusions: Drop-down menus were found to be an intuitive and familiar paradigm that was preferred by the participants. Although handwriting is the current mode of entry into the EMR, it was not strongly preferred.