Provider Profiles, Preferences and Concerns regarding Computerized Documentation

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**Background:** Yale-New Haven Hospital, as are many hospitals in the United States, is embarking on a transition from paper-based charts to fully computerized medical records. As of 2008, only 1.5% of U.S. hospitals have a comprehensive electronic records system. The percentage of hospitals with a system that has functionality for physician notes and nursing assessment is 7.6% (15.9% for large hospitals with greater than 400 beds.) The top two cited reasons for lack of implementation were the financial costs of initial investment and upkeep. However, the third cited reason was physician resistance. Provider satisfaction may be the most important component, other than cost, for successful implementation of a record system and has been described as ‘essential to the survival’ of an electronic medical record system. There is lack of data regarding provider needs and comfort with computers and their use of electronic medical records and associated services.

**Specific Aim:** While there have been studies about physician ‘attitudes’ regarding utility and cost that lead to resistance against electronic medical records, there have been no studies that attempt to quantify physician comfort with and preferences regarding their use of electronic medical records. This study identifies provider-specific profiles, preferences and biases at a large 900-bed tertiary-care center to quantify specific elements that may improve physician adoption and retention.

**Hypothesis:** Age will be a significant factor with older providers less comfortable with computers and typing and younger providers less comfortable with dictation. There will be differences in comfort with technology between providers of different levels of training or affiliation. All groups will be biased against computer dictation software. Providers may prefer to dictate consult and admission notes, which tend to be longer, compared to procedure/operative and progress notes.

**Methods:** A cross-sectional computer-based survey was disseminated via electronic mail to all providers affiliated with Yale-New Haven Hospital including residents, fellows, affiliates and honorary providers. Survey response was voluntary. Data was acquired regarding provider demographics, computer experiences and preferences regarding systems of data input. A Likert response format was used to generate ordinal data amenable to parametric statistical testing.

**Results:** The survey had 556 respondents from a wide range of medical specialties. The majority of respondents (58.5%) were attending physicians and 57.5% were male. There was no statistically significant difference in comfort with computers among providers of all ages, controlled for specialty, age, gender and training but private attendings were less comfortable with computers (p<0.001). Providers less comfortable typing, controlled for specialty, age, gender and training, were private attendings (p=0.002). There were no statistically significant factors that correlated with dictation comfort. The youngest cohort (age < 30, p = 0.022) and fellows (p=0.016) were less interested in trying computerized dictation software than other groups. Willingness to try computerized dictation software was correlated with comfort dictating (p<0.05) but not associated with typing or computer comfort. There was no preference between dictation and typing for admission or consult notes. There was a significant bias against typed admission notes for those less comfortable typing (p<0.1) and a significant bias for typed admission notes for those less comfortable dictating (p<0.05). Private attendings were less interested in typing consult notes (p = 0.002). For procedure and progress notes there was bias against dictation.

**Conclusions:** Yale-New Haven Hospital providers are generally comfortable with typing and computer technology but there are some intriguing variances such as the bias seen in private attendings. However, there are not yet clear preferences in providers for one system or another, except for brief notes where dictation seems to be problematic. The best system will be one that...
has good early adoption and retention to avoid biasing providers further for or against new technologies.