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Title

Evaluating Efficiency Improvement Initiatives in a Multispecialty Academic Group Practice

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Research Question/QI Topic

We aim to evaluate changes in primary care physicians' electronic health record (EHR) workload after the implementation of initiatives to reduce administrative burden, including automated response technology (ART) for patient generated messages, ambient Artificial Intelligence (AI) scribes, and Epic inbox assistance by Advanced Practice Providers (APP). Further, we will evaluate whether the implementation of these changes show more pronounced differences for providers based on gender.

Context

The development of automated technology and AI are rapidly advancing in medical practice. While these developments have been proposed to help provide more efficient and high-quality care to patients, the wellness of physicians continues to decline, and rates of primary care physician burnout reach 70% by some estimates. Physician burnout leads to significant direct and indirect costs to health systems(3). Research has cited high administrative burden and specifically perceived EHR stress as a cause of burnout among healthcare professionals. Research indicates that EHR burden is more pronounced for female providers.

Data and Methods

This will be a multifactorial prospective cohort study. Epic EHR tracks providers' time in individual encounters, inbox, and messages. We will extract this data for Family Medicine (FM) providers to evaluate variations in time spent pre- and post-interventions. Faculty physicians in the Department of Family Medicine at UC San Diego Health System will be the study participants. Systemwide initiatives that are occurring with the aim to reduce administrative burden for all clinicians include ART for patient generated messages through the EHR, AI ambient scribes for note writing, and a pilot to reduce EHR inbox burden by filtering messages through an Advanced Practice Provider (APP) prior to sending to the PCP. PCPs have the option to participate in the ambient AI scribe program and to use ART to draft responses to patient generated messages; all FM physicians at one of the three clinical sites are included in the APP inbox reduction pilot.

Outcome Measures

Workload or time in EHR will be measured by vendor provided data regarding physician time in inbox, number of messages received, time completing documentation, and time completing tasks after scheduled hours. Additional outcomes will include internal measures of physician productivity, 3rd next available appointment, and physician wellness survey scores pre and post interventions.

Expected Outcomes

We expect that each of the interventions will contribute to decreased time spent in the EHR by physicians, and that one intervention may prove more effective for busy

clinicians. We anticipate that the interventions will substantially reduce EHR time for female physicians more than male physicians.

Significance

Technological innovation continues to shape and expand the clinical space. As we evaluate the opportunities to use these technologies in practice, attention must be directed toward leveraging these technologies to improve physician efficiency. With physician burnout at significantly high rates nationally, optimizing clinical efficiency ensures high quality patient care while reducing the risk of physician burn out.