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A Model of Physician Clinical Burnout based on Electronic Medical Record Use Metrics

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Healthcare provider “burnout” is a personal risk to both behavioral and physical health and seriously threatens the critical need for dramatically improved healthcare in the United States. In the past forty years, Electronic Medical Records (EMRs) have been implemented to simplify routine healthcare provider tasks. However, recent studies suggest that although EMRs are designed to efficiently execute routine tasks, they have not always achieved that objective. The long-term objective of this study is to develop a model of physician EMR use interaction that will longitudinally monitor key EMR metrics that are tied to routine and specialized EMR tasks. Thereafter, this data will be used to create a mathematical model of the correlation of which metrics are associated with burnout risk as measured by the Single Question Burnout Survey (SQBS). We hypothesize that some EMR metrics correlate to burnout risk, therefore remodeling the EMR workflows provides an interventional method to reduce the burnout risk factors, thus reducing physician burnout risk.

We have conducted a retrospective analysis of EMR metrics collected over one month (February, 2020) for 1554 physicians, including 75 EMR metrics. Consequently, a rigorous quality assessment (QA) process led to the removal of 44 variables and 492 physician records, revealing that 31 variables are potentially important. Our preliminary results suggest that the EMR metrics available to us are a rich source of information regarding physician EMR use patterns.

Currently, we are conducting a prospective study that is designed to capture all EMR metrics (by month) and collect the physician self-reported stress level using the SQBS. When we receive this study’s data, we will assess all data and seek to identify the longitudinal relationship between physician EMR metrics and self-reported fatigue. We anticipate that our future analysis will identify key elements in the EMR that reflect physician burnout risk.