

The names, academic degree(s), affiliations, and locations (city, state, and country, if international) of all presenters

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An abstract of 150-200 words summarizing the proposal, which will also be entered into a text box at the beginning of the online form to be used in the online and print programs. The abstract does NOT have to be part of the document, but must be entered on the submission website in the Abstract box in Step 2. (Please DO NOT copy and paste the entire one-page document into that box)

During a previous Joint Commission visit to the University of Alabama at Birmingham, the surveyors noticed the prevalence of incorrect abbreviations used in clinical documentation by UAB physicians. Most of these occurrences were within free text notes in the Cerner Electronic Health Record (EHR). As this is non-discrete data, mining these infractions proves very difficult. The UAB Enterprise Data Warehouse (EDW) team developed a solution to identify incorrect abbreviations with the intention of decreasing their future presence in the EHR. Using a combination of Java, Oracle, and Tableau, the EDW team developed an analytics dashboard for users to identify physicians that are violating abbreviation standards as well as the analytics around the different components of the EHR that could be optimized in order to prevent future violations. The result is an interactive Tableau dashboard that displays trends in incorrect abbreviations, providers, and components (notes and forms) of the EHR that are prone to abbreviation violations. This demo will consist of walking through the Tableau dashboard and talking about its' effectiveness within the organization.

A description of the specific purposes of the system, service, or project; the problems in health care practice, biomedicine, or research in informatics that it is designed to address; and the purpose or features of the system, service, or project that make it particularly innovative.

The Joint Commission (TJC) has identified a list of "Do Not Use" List of Abbreviations when clinicians are documenting within the EHR. Upon inspection, it was determined that UAB Medicine could proactively address the potential violations that could occur.

Their official list from Joint Commission can be found here:

https://www.jointcommission.org/facts_about_do_not_use_list/

The purpose of the system was designed to identify and track incorrect dosage and treatment abbreviations that have been used by medical providers for some time. Incorrect medical abbreviations such as trailing zeros (ex. 1.450) or Morphine Sulphate (ex. MSO4) in the EHR have been identified by The Joint Commission as potential hazards to the patient in the event of false interpretation. On fields within the EHR that allow free text, it was discovered that physicians were using abbreviations that were not approved or no longer allowed as the guidelines have changed.

The system consists of decompressing 250k free-text BLOB data types nightly via a Java program from Cerner Millennium into the UAB data warehouse. Once the free text is decompressed, a series of

algorithms are ran against the free text to look for abbreviation violations. Elastic Search was originally incorporated, but the EDW team found that standard Oracle capabilities would suffice for phase one. Once these infractions have been identified, they are then staged and subsequently loaded into the Tableau dashboard. Using Tableau's hyper (in memory) capabilities, users such as Risk Management and Health Information Management can easily traverse the instances in which the Joint Commission standards were violated to look for providers, notes, or services that that could be in violation.

A statement of the degree to which the system or service has been deployed, as of the date of submitting the proposal

The system was deployed in February 2018. Users can track the trends of physicians, specific violation types, and the clinical notes that are most likely to contain abbreviation violations. The system is still in its early development and a feedback mechanism is currently being constructed in order to communicate and address the violations.

The Enterprise Data Warehouse Team intends to incorporate predictive analytics into future versions of this tool. The underlying thought is that UAB could accurately predict new clinical notes or individuals that should be monitored for potential abbreviation violations.