

Development and Use of Standardized Reports for Data Analysis of the MHS Epic OpTime EMR

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Introduction: In February 2014, our institution implemented a new electronic Surgical/Anesthesia clinical records systems. Limited provisions were made enabling the searching and downloading of surgical documented data. The previous system, Philips CompuRecord (PCR), had the advantage of a separate, dedicated server to handle all the Anesthesia Data coming from all the ORs as well as remote locations where anesthesia was needed. With the current Epic Optime Module (EOM) all of the information was scattered throughout the enterprise wide servers handling all of the hospital information. Hundreds of man hour efforts were required to restore the same capabilities that we had previously. A positive outcome of this exercise is we were able to incorporate data that was missing from some of the previous systems standard reports. This enabled us to improve the EOM to surpass the capabilities of what we had with the PCR system.

Methods: The previous system mapped all stored data to a unique case number. With the research module software tool the end user was able to quickly download all of the data from an individual case (3-5 second), including all vital signs. For a typical case this data was housed in 20 tables (linked via ODBC using MS Access). Simple sequel queries were written to join subsets of the different tables including the cross tabulated vital signs. In addition to the Research Module Output the PCR was able to put out standardized reports which were put in an excel spreadsheet and were continuously updated. All OR cases were available in the PCR standardized reports from the time of system startup until the last case completed. We decided to emulate these PCR standard reports in EOM. When we started the work on this Epic project we had Crystal Reports and Reports available from the EOM Clarity Database (CD). However, the CD which accepts sequel queries, was divided into approximately 32,000 different tables available.

Results: We were able to improve data recovery in multiple areas. 1) *Clinical Documentation to Professional revenue reconciliation* – Reporting tool developed to reconcile 100% of clinical documented procedure where the anesthesia area was involved. As an example it was discovered there was an issue with C-Section procedures not making it from the clinical documentation module to our Professional Billing module. This issue has since been fixed. This reconciliation tool is reviewed by the Periop Administration as well as our revenue cycle team on a bi-weekly basis. 2) *Anesthesia Operational Report* - Shows volume trending over each of the areas that are serviced by the Anesthesia Department. 3) *Research Data Sets*.- Seven EPIC OPTIME Anesthesia Tables were designed to mirror the previous Anesthesia System. Such as case tracking time events, meds administered, vital signs measures, etc.

Conclusions: Through several months of collaboration between our Anesthesia physician staff, Medical Operations, Information systems and their EPIC counterparts we were able to produce many of the same standard reports that we had with our previous Anesthesia system

as well as increase and improve upon the accuracy of the data that was populating these reports.