Strategy for Automating Data Capture from Distal Telemedicine Sites to Provide a Common Research Data Mart

Alexandra Castillo, MPH
Richard Summers, MD
August 19, 2019

The University of Mississippi
MEDICAL CENTER
Education • Research • Healthcare

Acknowledgement

This project was supported by the Federal Office of Rural Health Policy (FORHP),Health resources and Services Administration (HRSA), U.S. Department of Health and Human Services (HHS) under cooperative agreement award no. 6 U66RH31459-02-03.The information, conclusions, and opinions expressed are those of the authors and no endorsement by FORHP, HRSA, or HHS is intended or should be inferred.

Expert Care is just a screen away

UNIVERSITY OF MISSISSIPPI MEDICAL CENTER

CENTER FOR TELEHEALTH

National Telehealth Center of Excellence

The University of Mississippi Medical Center

Center for Telehealth

The University of Mississippi Medical Center

Education • Research • Healthcare

Background

- Stroke Program at the University of Mississippi Medical Center (UMMC)
  - Reporting Patient Stroke Data
    - Get With The Guidelines (GWTG)
    - Joint Commission (TJC)
    - Center for Medicare and Medicaid Services (CMS)
  - Stroke Program Personnel
    - Process of collecting and submitting data was completely manual
    - Manually abstracting less than 100% of the data for approximately 60% of UMMC's stroke patients
    - Tens of hours per week dedicated to manual process

Background

- Automated Data Abstraction
  - American Heart Association (AHA) GTWG Data Elements for Stroke
    - UMMC electronic health record (EHR)
    - Electronically imported into the Stroke REDCap database
    - Reviewed and certified by UMMC Stroke Coordinator
    - Electronically uploaded to GTWG National Stroke Registry

Objective

- Research efforts in telemedicine focus on the effectiveness of remote collaborative interaction to improve patient outcomes
- Capture health data from diverse EHR systems across separate and distant sites
- Collect health data in a common data mart to facilitate research efforts

Methods

- Developed a process to provide automated health data capture from EHRs
- List of data elements of interest with the intent of answering future research questions
- Data can be abstracted using a designated algorithm and protocol specific for the EHR
- Datasets are aggregated in REDCap and can be queried for research

Results

- Data for AHA GWTG National Stroke Registry
  - Targeted for capture in 2018
  - Total of 4,633 patient charts were processed in trial
  - Captured 92% of the data elements for GWTG on 100% of UMMC acute stroke patient population
- Implemented a workflow improvement project
  - Additional fields in UMMC EHR and uploading into REDCap

Conclusions

- Successfully used an abstraction algorithm and protocol to capture the desired data from a standard EHR
- Abstracted data placed in an intermediary platform to create a specialized data mart
- Implement the same process at remote telemedicine site
  - Automate data capture
  - Provide a common research data mart for analysis
  - Further capture of specific data elements through Natural Language Processing (NLP)
  - Standardized work flows and data fields in EHRs

The University of Mississippi
MEDICAL CENTER
Education • Research • Healthcare