Category: Clinical Trial Operations – Work in Progress

Data Automation to CIBMTR

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1. Background

Memorial Sloan Kettering (MSK) submits transplant-related outcomes data to the Center for International Blood and Marrow Transplant Research (CIBMTR). CIBMTR collects this outcome data for all allogeneic transplantation performed in the U.S. for the Stem Cell Therapeutic Outcomes Database (SCTOD), as required by U.S. law. U.S. transplant centers also voluntarily submit autologous transplantation data, and transplant centers worldwide voluntarily submit both autologous and allogeneic transplantation data. Typically, this data is collected using an online data capture system, called FormsNet and is populated by manual entry by a site data manager. The completion of CIBMTR forms is a labor intense process and the MSK Adult Medicine and Pediatric BMT clinical research coordinators spend several hours extracting data from various EMR (Electronic Medical Record) forms and enter that data manually in CIBMTR. This process is inefficient, error prone, time consuming and is driven by a document-centric process. Additionally, several hours are dedicated to QA this manually entered data.

2. Goals

The goals of this project are to reduce site staff time for manual data entry and improve data quality. With the initial phase 1 release in December 2020, we automated the demographics submission that registers a patient with CIBMTR. In phase 2, which is currently in progress, we will be automating the submission of complete blood count with differential labs data (at transplant). Phase 3 will be automation of complete blood count with differential labs post- transplant and chemistry variables; phase 4: we will add additional data elements to this automation.

3. Solutions and Methods

The data transformation initiative (DTI) aims at collecting data using a source-to-target approach: meet the data where it is as per the source environment. As part of the initial exploration, we determined where the source data was residing and how to identify the subset of data needed from that. Once the business rules and logic were determined to pull that data, we built an in-house application called BMTverse that serves as the user interface for the data transfer between MSK and CIBMTR. Data collected from various internal source systems are displayed in BMTverse and site data managers determine which patient demographics and/or labs should be submitted to CIBMTR.

4. Outcomes

Compared to pre-automation, the DTI process saves approximately 5 minutes per patient on demographics data submission. Twenty-two lab panel components are added to automation and these labs will be used to answer 273 questions across 28 forms in FormsNet, currently 190 of 273 form questions are ready for automation and we are in the process of sending pre-transplant data as part of the phase 1 initiative. The data automation has reduced the time they have to spent on data extraction and manual data entry.

5. Lessons Learned and Future Directions

Time required to complete CIBMTR forms included chart review, data extraction, data entry and clinical research coordinator data entry experience. The data automation initiative has already saved time and

will continue to reduce this administrative data reporting burden tremendously as we acquire and automate more data submissions to CIBMTR.

Figure:

From 12/19/21-2/26/22 on patient demographics:

Patient Type	Patients Sent	Data points Sent	CRC Time saved (Mins)
Adults	62	434	310
Peds	9	63	45