Utilization of Artificial Intelligence in Clinical Documentation Improvement to Impact Diagnosis Related Group Modifications

Kristin Quakenbush, MSN, RN, ONC
Director, CDI New Brunswick, Somerset & Rahway

Jovita Solomon-Duarte, MSN,RN,PNP,CDIS
Clinical Documentation Improvement Specialist

BACKGROUND/ AIM

Clinical Documentation Improvement Specialists (CDIS) at Robert Wood Johnson University Hospital in New Brunswick (RWJUHNB) traditionally review all cases within limited insurance payers. However, not all cases possess an opportunity that will impact the diagnosis-related group (DRG). Examining cases without opportunities results in lost productivity. Artificial Intelligence (AI) can be utilized to find opportunities within all insurance payers. These cases with opportunities will be sent to the CDIS team for review and have the potential to increase productivity. RWJUHNB, an affiliate of RWJBarnabas Health (RWJBH) is the pilot facility for the RWJBH system for this AI utilization in CDI.

OBJECTIVE / GOAL

To increase the impact rate on DRG modification from the New Brunswick Goal of 20% to the Best Practice Goal of 24% each month beginning the first month after implementation (December 2018).

METHODOLOGY

Before AI was implemented, extensive testing of multiple Electronic Medical Record interfaces was done. CDIs received on-site education and training from the vendor prior to and during Go-Live phases. From the time of implementation, CDIs identified opportunities to improve machine learning and addressed these opportunities to the vendor and Nursing Leader resulting in AI customization for RWJUHNB’s specific needs. Continuous improvement process for suggestions for improvement was assessed, tailored, and implemented.

RESULTS

Test of Change Outcome

| November 6, 2018: AI Implemented. CDIS Team began identifying opportunities for improvement of AI Concept and related to Vendor | Goal exceeded December 2018 |
| January 8, 2019: Quiet Period changed to full 24 hours | No increase in Impact Rate between Jan and Feb 2018 and Jan and Feb 2019; Goal met |
| February 25, 2019: In Progress/Incomplete Notes sent to AI Program from SCM | Increase in Impact Rate from March 2018 and March 2019; Goal exceeded |
| February 26, 2019: Malnutrition from Nutrition notes utilized by AI Program for prioritization | Increase in Impact Rate from March 2018 and March 2019; Goal exceeded |
| April 24, 2019: Work Around for OR Unsigned Notes Created | Increase in Impact Rate May 2019 compared to May 2018; Goal met |
| April 28, 2018: 1 FTE CDI started | Increase in Impact Rate on May 2019 compared to May 2018; Goal met |

CONCLUSION

Since the implementation of AI in CDI on November 6, 2018, the 24% goal was achieved each month. After the refinement of the AI software in February 2019, there was a consistent increase in Impact Rate when compared to the month of the previous year. Analysis of data over the eight months pilot period show a direct correlation between the number of cases prioritized to the Impact Rate.

The role of AI in CDI resulted in improved clinical documentation evidenced DRG modifications resulting in increase Impact Rate. With continuous utilization of AI in CDI, it is projected that CDI will meet the annual projected financial goal. Moreover, with the increased prioritized cases for review, one additional CDI FTE is posted. When filled, the new CDI will further assist in increasing the Priority Review Rate and Impact Rate.

The outcomes of this pilot program have been communicated with RWJUHNB senior leadership. The decision has been made to expand this program to the other facilities within RWJBH. CDI Team members from other RWJBH hospitals are currently doing site visits to RWJUHNB to see how the AI software is utilized in CDI.

Disclosure: No funding was received to complete this pilot study by any of the authors.