Improving infectious disease electronic medical records documentation
A quality improvement study in an academic teaching hospital

Seetha Lakshmi, MD; Johonna Asquith, MD; Sally Alrabaa, MD; Mindy Sampson, DO; Natan Kraitman, MD; Garabet Akoghlanian, MD; and Beata Casanas, DO
Division of Infectious Diseases and International Medicine, University of South Florida, Tampa, FL

Methods
An anonymous pre-intervention satisfaction survey was given to the Infectious Disease (ID) faculty and fellows. Numerous meetings were held, and based on faculty and fellow concerns, new consult and progress note templates were designed with several key points in mind. Notes were to include: active problem in the subjective section, updated hospital course under assessment, active problem listed first under the assessment and non-relevant resolved problems removed from assessment

A Key driver diagram was created with 2 PDSA cycles:
1) Perform targeted educational intervention
2) Implementation of a customized template incorporating the key elements listed above. Education was given to ID faculty and fellows, and the new templates were implemented in April 2018. Retrospective chart audits were performed on ID consult and progress notes by four independent reviewers to decrease bias.

Post intervention data was collected using the following:
1) Note audits using a 4 point scoring system with 1 point awarded for each key element
2) Post intervention survey

Study Aims
Reach >90% compliance with the key components of the ID note in order to improve weekend handoff and ease of interpreting assessments.

Results
All ID fellow and faculty completed the baseline survey (N=25). Less than half (11.46%) felt that they could interpret assessment with ease and an even lesser number of respondents (9.36%) felt that there was adequate weekend handoff (figure 2). Interventions were piloted in a smaller group (N=9) due to the number of faculty and fellows on service during the time charts were audited. There was 95% compliance with the use of the customized template. A total of 357 notes were audited. Pre-intervention note audit scores were lower (mean=2, median=2, IQR=0), compared to post educational intervention (mean=2.8, median=3, IQR=2) and post customized template implementation (mean=3.6, median=4, IQR=1) scores (figure 3). The post implementation survey showed improved (88.8%) ease of interpreting assessment and improved weekend handoff (7.77%).

Facility & Fellow Feedback
• Auto-populate additional lab values (i.e. ESR, CRP)
• Continue to include pertinent past ID history in the active problem list
• Consider further customizing templates for subspecialties within ID service (i.e. neuroinfection and immunocompromised services)
• Include billing data in our study

Conclusions
Targeted education and implementation of standard key points into the EMR note template by all faculty and fellows can improve the efficiency of ID physicians on a daily and cross-cover basis. This improvement in documentation, allows for faster and easier interpretation of patient assessments and sign out during transition of care. Thus improving the quality of patient care, leading to better outcomes.

Transferability
Multiple disciplines can design and implement EMR templates that can maximize physician efficiency, colleague satisfaction, patient safety, and quality patient care.

Study Limitations
• Quality component of the note was not reviewed
• Need to assess if the implemented changes translate into effective communication
• Need to assess the time demands on completing notes (balancing measure)

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Primary Outcomes
Pre-intervention Survey