Identifying and Analyzing Inequity in Quality Care

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What might the attendee be able to do after being in your session?

This session walks through the approach that UChicago Medicine is taking to appropriately identify potential inequities in quality of care between different patient populations. The data architecture and visualization will be presented to provide attendees the first steps to analyzing potential inequities in care within their own health system. This work will also highlight the importance of data quality and completeness for equity analysis.

Description of the Problem or Gap

Crossing the Quality Chasm[1] identified 6 Quality Domains in healthcare: Safe, Timely, Effective, Efficient, Equitable, and Patient-centered. UChicago Medicine developed an organizational quality scorecard over 8 years ago to track the health system's performance in each of these domains but Equity wasn't adequately analyzed. Data architecture and reporting changes were required to dive beyond high level performance trends and allow for comparisons of across different patient populations.

Methods: What did you do to address the problem or gap?

Making analysis of potential inequities accessible for our organization, specifically our subject matter experts, was a process that took several years. UChicago Medicine transitioned to providing our quality scorecard with Tableau Server in 2016. In order to ease this transition for staff, the initial version of the report looked very similar to the legacy report and did not utilize much of the interactivity that comes with newer BI tools. As staff became more comfortable with the tool over time, we began using a star schema data model to develop a more interactive report. In 2019, the existing data architecture that supported the quality scorecard was enhanced with additional patient dimensions to expand on the existing report - allowing for direct comparisons between patient populations. We utilized Tableau and Microsoft SQL Server to accomplish this work.

Results: What was the outcome(s) of what you did to address the problem or gap?

The report was released in early fall 2019 through Tableau Server. This report now allows subject matter experts to compare outcomes between different patient populations for over 60 different quality measures. Users of the report can mix and match different combinations of filters and comparators to identify and analyze potential inequities of care. Performance across different demographics of race, gender, and ethnicity are now being evaluated by various subject matter experts across quality and equity domains.

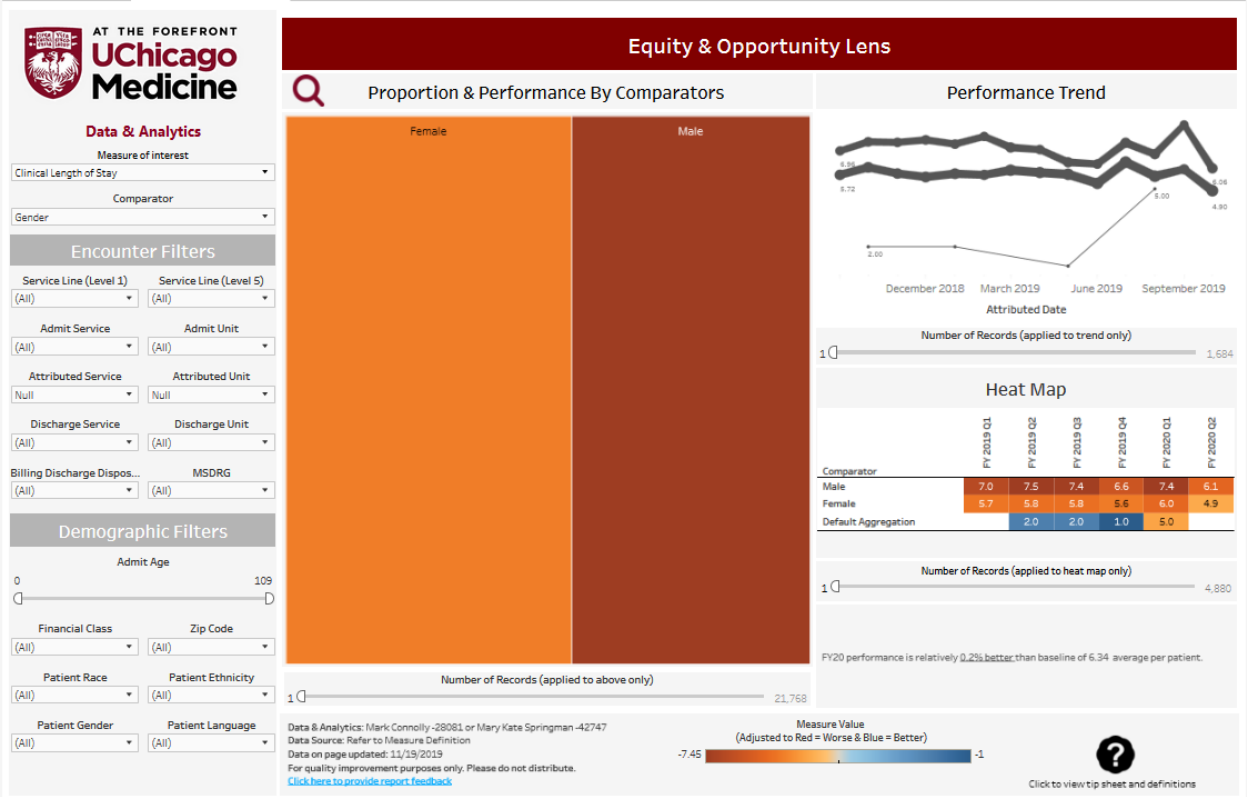

Figure 1. Equity & Opportunity Lens. A report for identifying potential inequities of quality care. This example looks at the differences between Male and Female length of stay. The lower length of stay for the female patient population is best explained by the volume of Labor & Delivery patients but highlights both the tool's ability to compare populations.

Discussion of Results

The first step in addressing inequity is to identify it. Performance across different patient populations can now be analyzed in the fraction of the time compared to previous analytic requests supported by our team. We've looked to democratize our data out to various subject matter experts to further help efforts in identifying potential inequities. This has helped analyze aggregate performance differences as well as differences in changes in performance across our different patient populations.

As staff began to use the tool, the importance of data quality was a consistent discussion point. We chose to display all relevant patient demographics as identified within our EMR and did not filter out smaller patient populations or records with null values. This highlighted both the completeness of our data and the importance of consistent demographic documentation processes in equity analysis.

While initial organizational response from the release of the report has been positive, the larger challenge has remained centered on performance improvement.

Conclusion

This work now provides UChicago Medicine the ability to assess potential quality of care inequities. Our next step is the challenge of prioritizing and addressing these inequities which will require a multidisiplinary approach.

Attendee's Take-away Tool

The take-away is how to develop a report and supporting data architecture to analyze and identify potential inequities of care across different patient populations in a health system. The importance of data quality and completeness will be reinforced throughout this presentation.

Use of Knowledge Acquired at Previous AMIA Events

This work was an extension of a presentation by both speakers at the 2018 AMIA Clinical Informatics conference on the progression of a quality scorecard.

References

1. Committee on Quality of Health Care in America and Institute of Medicine. Crossing the Quality Chasm. 2001.