

AYASDI

Mercy Optimizes and Automates Patient Care Pathways with Ayasdi Care

Challenges:

- Desire to increase care quality
- Unwanted variation of care delivery
- Lower than expected adoption of clinical pathways

Solution:

Ayasdi Care for Clinical Pathways

Projected Benefits:

- Improve care quality through focus on length of stay and care outcomes
- Increase physician adoption
- Reduce variations in care outcomes
- Save incremental \$100M over next 3 years

Ayasdi Care for Clinical Pathways uses a unique data-driven approach to recognize best practices that deliver the best patient outcomes.

ABOUT MERCY

As the 5th largest Catholic health care system in the U.S., serving millions annually, Mercy is labeled as one of the “Most Wired” and technologically advanced hospital systems by American Hospital Association. Mercy includes 45 hospitals, nearly 700 clinic and outpatient facilities, 40,000 co-workers and more than 2,000 Mercy Clinic physicians

CHALLENGES

As part of Mercy’s vision to pioneer a new model of healthcare to improve patient outcomes at a lower cost, Mercy has been developing clinical pathways across its hospitals.

To develop a clinical pathway a team of selected physicians, nurses, and ancillary team members come together to review evidenced-based medicine studies and discuss individual best practices to agree on a pathway through consensus.

These consensus based pathways driven from third party studies, however, are often challenged by the different opinions of clinicians on what should and should not be incorporated. In addition, the pathways often do not address the individual clinical needs of Mercy’s patients, as the pathways originate from studies derived from external patient populations.

The pathway team is unable to tailor clinical pathways to different patient subgroups or to evaluate the impact of clinical pathway changes on care quality and cost outcomes.



Mercy Case Study

Practicing clinicians can further be skeptical that consensus pathways would achieve improved care and can be slow to adopt the deployed pathways.

Facing these challenges, Mercy sought a data driven clinical pathway solution, derived from Mercy's existing patient information and customizable for Mercy's patient sub-populations. Mercy wanted to design pathways to both optimize patient care while controlling hospital costs.

SOLUTION

Mercy used Ayasdi Care that was developed with clinician-input to discover optimal pathways from their own internal patient data. Ayasdi Care correlates and analyzes Mercy's electronic medical record information and financial data, including information related to treatments prescribed, procedures performed, drugs administered, length of stay, and costs per patient.

Ayasdi Care uses topological data analysis (TDA), which combines machine learning, statistics, and geometric algorithms, to discover clinical pathways that are optimized to drive higher quality of care and lower costs. These care pathways leverage mathematics based on TDA to aggregate all the varying procedures each patient receives during a specific treatment.

Using Ayasdi Care, Mercy developed a new total knee surgery clinical pathway by discovering a set of never-before-seen best practices. Mercy recognized a group of MDs in a hospital whose patients consistently had a lower length of hospital stay and shorter time to ambulation than other total knee surgery replacements across Mercy. With Ayasdi Care, Mercy's team identified these MDs prescribed a unique, not widely used muscle relaxant at an earlier post-surgery time than their peers.

Due to Ayasdi's data-driven approach that eliminates subjectivity, Mercy estimates 20% more clinicians will accept the new evidenced-based clinical pathway co-developed with Ayasdi Care. As a result, Mercy will be able to standardize care and reduce clinical variation. Clinicians can also customize the pathway for various patient sub-groups. Using Ayasdi Care's predictive analytics algorithms, physicians can model different outputs based on procedures added or subtracted to each pathway needed for their patients.

By lowering patient costs, minimizing care variability, and improving operational effectiveness, Mercy estimates developing 100 additional pathways and saving an incremental \$100 million over the next 3 years.

"We see Ayasdi Care as a strategic application in helping Mercy maintain and optimize care pathways to continually improve clinical outcomes in the most effective way possible."

Dr. Seth Barbanell, MD

VP of Clinical Pathway Acceleration