THE Value Initiative

Members in Action: Implementing Operational Solutions

Sutter Health – Sacramento, CA
Artificial Intelligence Platform Improves Inpatient Pharmacy Operations

In the *Members in Action* series, AHA will highlight how hospitals and health systems are implementing new value-based strategies to improve health care affordability. This includes work to redesign the delivery system, manage risk and new payment models, improve quality and outcomes, and implement operational solutions.

Overview

Sutter Health is a Northern California-based integrated health care network with 24 hospitals, more than 53,000 employees, 12,000 physicians, a health plan, home health care and hospice services caring for 3 million people. The not-for-profit network collaborates with Qventus using the company's artificial intelligence (AI)-based platform to augment inpatient pharmacy operations.

The Qventus real-time platform was implemented this year in four hospitals – two in the Sacramento area and two in the San Francisco Bay Area. The system helps Sutter Health reduce inpatient drug spending, decrease lengths of stay and support clinical teams by improving the effectiveness of pharmacy workflows and quality. The AI-assisted platform brings together hospital, patient and pharmacy data in real time to determine immediate opportunities where a pharmacist-led intervention may be needed to ensure that patients receive the most appropriate medications for their treatment. The real-time
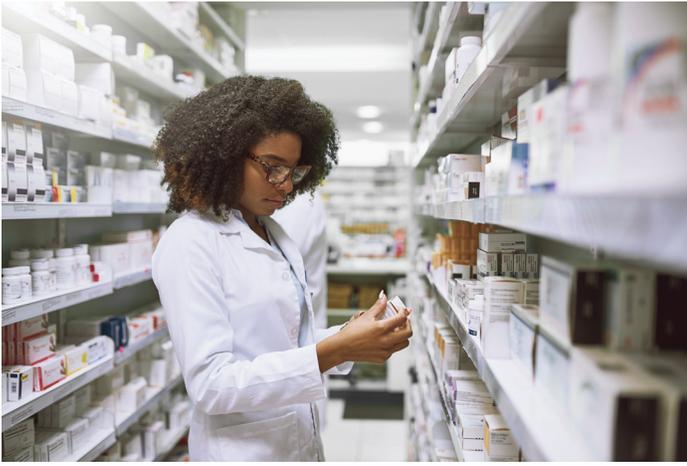
Impact

The length of stay for some patients hinges on how soon medication can be switched from being administered intravenously to orally. Some 30 real-time data elements are required to determine whether converting from intravenous to oral medication is warranted. The AI platform evaluates all data elements and creates insights or "recipes" for pharmacist actions. By switching to oral medication sooner, patients may be able to go home more quickly.

"This platform helps us deliver safer, more affordable care for our patients," says Brian Harris, vice president of pharmacy for Sutter Health. "Applying artificial intelligence to our pharmaceutical operations allows us to identify areas of improvement more quickly, take action more consistently, and expand clinical focus on those in our care."

The new system, which extracts information from multiple medical records, produces usable information in seconds. Sutter Health estimates the cost savings on three injectable drugs alone to be $1 million per year. The Qventus system also can produce more timely analysis and reporting tools that previously took up to two months for the Sutter team to generate internally. The AI system helps ensure that pharmacy protocols are implemented more universally throughout the system, reducing missed opportunities for pharmacist-led interventions. In addition to cost savings, the system will be tracking the impact on patient outcomes and patient satisfaction.

"This is Sutter Health's foray into leveraging artificial intelligence and machine learning technology to augment operations," says Sameer Badlani, M.D., FACP, vice president and chief health information officer for Sutter Health. "By leveraging key real-time data feeds from our EHR and focusing on delivering insights rather than dashboards, we aim to remove the activation challenges often associated with building a data-driven learning health care organization."

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platform dramatically reduces the time lag that often occurs when using standard reporting tools to identify pharmacist-led opportunities.

The system identifies patients who may require additional attention and prompts the physician, clinical team and pharmacist to take action. It also directs pharmacists to prioritize the neediest patients for consultation and drug education at discharge. The goal is to improve patient understanding of their medication regimen, reduce errors and increase patient compliance. The predictive data helps determine which patients may benefit from a switch from injectable drugs to oral medication with the appropriate efficacy and lower costs. The predictive system helps identify patients who may be at risk for not obtaining their medications or who may need extra education about when to take their medicine after discharge, and thereby reduce avoidable readmissions.

Future Goals

Sutter Health leaders plan to integrate the AI system in the inpatient pharmacies of all 25 hospitals. After which, Sutter Health intends to implement the system in its transitional care units, tracking patients' medication usage from pre-hospitalization to post-discharge with a goal of reducing avoidable readmissions. Other future plans include implementing the AI platform in nursing services.

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