

## **The Impact of a Web-Based Point-of-Care Tool on Physician Behavior and Patient Health Outcomes**

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### **Background**

Primary care physicians face various challenges, including increasing numbers of patients with cardiometabolic conditions (diabetes, hypertension, dyslipidemia), growing patient panel sizes, more administrative tasks, lack of user-friendly resources, and an ever-increasing knowledge in medicine, which makes managing patients' cardiometabolic conditions more challenging. In collaboration with AstraZeneca, Sutter Health has developed CM-SHARE, a web-based point-of-care tool for primary care physicians that aims to display targeted information for providers to use to engage and manage their patients while also reducing the amount of time spent on the computer searching for information.

### **Methods**

CM-SHARE was piloted at two primary sites in Northern California with six primary care providers. Application usage data were tracked, and one-on-one interviews with users were conducted to understand user adoption. Based on electronic health record (EHR), a pre-post parallel, matched control longitudinal analysis of clinical outcomes and workflow process measures was conducted to understand CM-SHARE's impact on EHR usage, clinic workflow, provider care delivery, and patient clinical outcomes. Comparisons were made using t-tests and Wilcoxon signed rank test.

### **Results**

Over 26 months since deployment, pilot providers used CM-SHARE in 33% (N=37,131) of all patient encounters. EHR and pilot user feedback indicate that CM-SHARE was most used for complex, high-morbidity patients with cardiometabolic conditions, particularly in diabetes-focused visits (53% vs. 28% usage for all encounters). Physicians reported high value in CM-SHARE's ability to visualize health data and to educate high morbidity patients. Use of CM-SHARE was associated with a 25%-35% reduction in EHR time and 11%-20% fewer EHR clicks for cardiometabolic-focused encounters. Compared with control patients, patients with diabetes who had CM-SHARE launched had, on average, more HbA1c labs ordered (p-values: 0.0001 and 0.0007 at 6-month and 12-month follow-up periods, respectively) and achieved a 0.1% lower HbA1c lab value (p-value: 0.02 at 18-month follow-up).

### **Conclusion**

CM-SHARE has maintained stable usage over the course of the pilot, indicating that it fulfills a valuable physician need. Early results indicate positive trends in both reduction of EHR burden and improvement of disease monitoring and patient clinical outcomes. More work is needed to understand how CM-SHARE mediates patient outcomes and physician behavior change.