

2022 Sautter Award Application

UC San Diego Health Information Services

Project title: Building a Highly Reliable, Learning Health System: Implementing Clinical Research Workflows in the Epic electronic health record (EHR)

Submitter's name, title, and contact information: Melinda Battenberg, Communications Lead UC San Diego Health IS, mbattenberg@health.ucsd.edu

Names of project leader(s) and team members:

Christopher Longhurst, MD, Chief Medical Officer and Chief Digital Officer (Exec sponsor)

Dr. Mike Hogarth, Clinical Research Information Officer,

Director of Biomedical Informatics, Altman Clinical Translational Science Institute (ACTRI)

Gary Firestein, MD, Senior Associate Vice Chancellor for Health Sciences

Sandip Patel, MD, Director, Clinical Trial Office (CTO)

Josh Glandorf, Interim Chief Information Officer

Carlos Rojas, ACTRI Clinical Trials Project Management Office

Nguyen Trieu, ACTRI Director of Biomedical Informatics

Perry Shipman, ACTRI Clinical Research Technology Manager

Robin Daniels, CPCO, Director, Clinical Research Billing

Allen Tran, PharmD, Director, HS IS Inpatient Clinical Systems

Dean Pham, PharmD, MBA, Director, HS IS Ambulatory Clinical Systems

Project Statement: UC San Diego Health has enabled new clinical research functionality in our Epic electronic health record (EHR), the first for the UC Health system. This is step in a larger effort to integrate clinical research into Epic as part of our journey to become a highly reliable, learning health system.

Project Narrative:

UC San Diego Health has historically managed interventional research trials with a clinical trial management system (eVelos) which is separate from the health system's primary EHR (Epic). An enhanced integration of care and research data collection at the point of care allows the health system to improve trial patient safety, optimize research process efficiencies, and enhance regulatory compliance for research revenue capture.

Recognizing the potential problems with having a clinical trial system that was outside the primary EHR, leaders at UC San Diego Health chose a strategy of folding clinical trial data and management into the health system's Epic EHR. The key issues addressed were safety, compliance, and efficiency. The implementation of clinical research within Epic began in early 2022 with 150 cancer center studies and will continue throughout the year throughout multiple research centers across UC San Diego.

The Epic EHR clinical research integration program improved the safety of patients participating in the clinical trial. Every clinical trial patient received an Epic EHR record, which means that research visit notes were viewable by clinical care providers, even in blinded studies. This increased transparency helps prevent adverse drug events due to drug study alerts in Epic, supplies information on who should be contacted if an adverse event occurs and provides enhanced data collection on adverse events.

UC San Diego Health

Issues of compliance were also addressed with the Epic integration, such as improving the audit of care rendered to research subjects. Additionally, financial compliance has improved through streamlined study monitoring, coverage analysis, documentation, and billing.

UC San Diego Health is tracking key performance indicators using a post go-live date of Feb 14th, 2022 the date when the majority of the health system's research studies were transitioned into Epic. As anticipated, the revenue charge capture increased. In fiscal year 2021, the average per month charge capture dollars was \$12,172,991 compared to the post-Epic transition volume of \$15,640,910, a 22.17% variance. These are incredible results considering approximately a third of the year has been measured in this post go-live data. Our charge lag day trends are also decreasing from historical numbers, which indicates that charges are getting captured and posted more quickly.

The Epic integration also provided increased efficiencies in the clinical trial research process. Patients can now view research study calendars, appointment scheduling, clinician communications, and trial invitations within Epic. Research notes are available for patient review in Epic (as required by the Cures Act) and patients can sign consent forms in the EHR. One example of this integration is the use of Epic (through MyChart) to communicate, consent, and survey over 2,000 UC San Diego Health staff and student participants in the Neutralizing Antibody Project (ZAP) study, which measures COVID-19 antibodies and gives participants an assessment of their risk of catching the virus.

Collaboration

Beginning in 2021, team members from UC San Diego Health Information Services, the Altman Clinical and Translational Research Institute's Biomedical Informatics team, Revenue Cycle Clinical Research Billing, and leaders from Moores Cancer Center have all worked in partnership on this transition. Over 150 faculty and staff also contributed to this project through user-centered workgroups.