UCSF Department of Medicine
ZUCKERBERG SAN FRANCISCO GENERAL

EPIC AT ONE YEAR: A MAGNIFICENT TEAM EFFORT

Unified Enterprise-Wide Progress
Like transforming the Tower of Babel into Esperanto, the launch of Epic, our enterprise-wide electronic health record (EHR), a year ago is helping health care professionals from across the San Francisco Health Network (SFHN) to accelerate communication and outstanding care.

Before August 2019, ZSFG used more than 20 different EHRs that couldn't talk to each other. "The real power of Epic is that it allows us to share information about our patients across multiple areas," said Neda Ratanawongsa, MD, MPH, Chief Medical Informatics Officer for the San Francisco Department of Public Health (SFDPH). Dr.

Neda Ratanawongsa, MD

Ratanawongsa guides a dream team that includes: Seth Goldman MD, Informatics Director for Digital Health and Technology Integration; George Su MD, Medical Director of Telehealth and Informatics and Informatics Director for Specialty Care; Shobha Sadasivaiah MD, Informatics Director for Patient Engagement & Value Based Care Analytics and Assistant Program Director, Clinical Informatics Fellowship; Liz Goldman MD Informatics Director of Research and Evaluation Analytics; and Elaine Khoong MD and Courtney Lyles PhD, who both focus on Digital Equity and Analytics.

"There has never been as clear a need as with COVID-19," said Dr. Ratanawongsa, who is Associate Professor and also serves as Interim Chief of the ZSFG Division of General Internal Medicine For example, this summer, she was able to see whether her patients had been in an isolation and quarantine location before or after their hospitalization, and could also view information about their visits to urgent care and other health systems. "Having access to a patient's medications or allergies can be life-saving and enables us to provide much better care, particularly for patients with limited health literacy or English proficiency," she said.

Epic also makes it possible to analyze data across the SFHN. "We saw that the pandemic was predominantly hitting our Latinx and African American communities," said Dr. Ratanawongsa. "We've also created operational dashboards to track how many people had COVID-19, how many tests were pending, and the number of patients and overall capacity in each level of care."

In addition to COVID-19 efforts, Dr. Ratanawongsa and her partners will introduce enhancements such as whole person integrated care, which will allow groups such as paramedics, behavioral health and supportive housing staff to use Epic to care for people experiencing homelessness. "In a year, I'll be able to see notes and the care plan from a nurse who works in a single room occupancy hotel, and can provide care that's in line with that plan," she said.

Additional members of the Epic team (clockwise, from top left): Liz Goldman, MD; Elaine Khoong, MD; Shobha Sadasivaiah, MD; Courtney Lyles, PhD

The team also works closely with hospital leaders Delphine Tuot MD, (specialty ambulatory care), Gabe Ortiz MD (inpatient care) and Lukejohn Day MD (ZSFG Chief Medical Officer).

Understanding Work Flows to Innovate
The transition to Epic was years in the making. After Epic was carefully selected as the EHR, Dr. Ratanawongsa and her team led hundreds of meetings to learn more about how each clinical area's existing EHR supported their particular workflows. Then they presented options for how the new EHR could better support ZSFG's True North goals, and negotiated compromises so everyone could use one integrated record.

"Those initial stages were about change management, providing an opportunity to reflect on how we were providing care and better ways to do it," said Seth Goldman MD, Informatics Director for Digital Health and Technology Integration for SFDPH and Associate Professor in the ZSFG Division of Hospital Medicine. As a clinical informaticist, Dr.
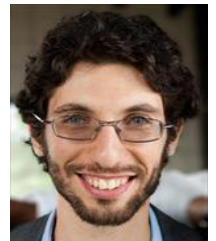
Seth Goldman, MD

Goldman and his colleagues serve as diplomats between two distinct groups: health care providers and information technology experts. "Our job is to sit at the interface between those two behemoths, translating between their two 'languages' and serving as a dual advocate," he said.

Dr. Goldman leads a clinical decision support team, which serves as a consulting group to translate best healthcare practices into order sets. Like digital checklists, these EHR-based templates help clinicians remember key components of providing

high-quality care, and help make informed, and effective decisions. If a patient has pneumonia, an order set might prompt a physician to decide how often to check their vital signs, which antibiotics are most appropriate, and what lab tests they need.

Dr. Goldman and his group worked with groups to prepare about 150 order sets before the Epic launch and have developed more since then, including about 25 related to COVID-19. "An EHR is a living entity that responds to conditions on the ground and available resources," he said. For example, hydroxychloroquine was included in an early COVID-19 order set, but was removed as new data emerged showing there was no medical benefit. The group discussed whether to add remdesivir, a promising new treatment, but considered whether that would deplete their limited supply.

Optimization is key – not just for order sets, but for every aspect of Epic. "We're never satisfied with just rolling something out and moving on," said Dr. Goldman. "If we aren't achieving our goals, we ask, 'What do we need to change? Where should we focus our efforts?'"

One lesson Dr. Goldman learned was the importance of collaboration. Several years ago he worked on two unsuccessful attempts to implement new ICU order sets. "The main reason we failed was that we didn't develop partnerships with our operational counterparts," he said. "They felt like it was being done to them. It's essential to understand people's work, the reasons behind their processes, and the challenges they face. Technology is a distant second to developing relationships based on trust and communication."

Dr. Goldman recently partnered with the ZSFG Care Experience team to adapt a program started by UCSF medical students and residents that allows hospitalized patients to have video visits with family and friends. "Being hospitalized is an overwhelming and isolating experience, and it's very reassuring to see a loved one's face when you're sick," he said. A hospitalist or specialist can use Epic to request that a nurse check out a tablet and help the patient initiate the video visit.

"There's a lot of potential to use these devices in the future for other patient engagement pieces, whether it's MyChart or telehealth at the bedside

or for use with interpreter services," said Dr. Ratanawongsa. "The real power of Epic is figuring out how to bring care to people where they're at, whether they're in their homes, board and care, or a congregate living facility."

Evolution of Telehealth

George Su MD, Medical Director of the SFHN Telehealth Program and Professor in the ZSFG Division of Pulmonary and Critical Care, is at the forefront of many such efforts. His team and dedicated clinical partners have helped transition existing telehealth programs, such as SFHN Teledermatology and Teleretinopathy, into the Epic environment. These "store and forward" programs allow referring providers and staff to securely share images of skin lesions and diabetic patients' retinas. Specialists review these images, diagnose pathology, and send back recommendations. "There's a huge benefit to integrating these programs into Epic, which allows us to take advantage of enterprise Epic systems such as eConsult, ordering, and scheduling," said Dr. Su.

George Su, MD

Introducing video visits has been more difficult. COVID-19 created both an urgent need and an opportunity to expand the scope of telehealth. "Because of transmission risk, we can't have most patients show up to our clinics," said Dr. Su. "The only option is to have a virtual visit, and preferably one supported by video."

This spring, SFHN partnered with Zoom to offer secure video visits, invoking COVID-19 emergency contract authority. It was a team effort to train providers and patients and develop standard work and clinic workflows. UCSF medical students even created video tutorials for patients in seven languages (sfhealthnetwork.org/videovisits). However, video visit uptake has remained low so far.

Another challenge is that patients would ideally initiate a video visit from within MyChart, the patient portal, to take advantage of all the benefits of Epic. However, despite a previous enrollment campaign, only a small fraction of patients are currently enrolled in MyChart due to a daunting

number of obstacles – including the need to have a smartphone, tablet, or computer, as well high-speed internet access and digital literacy skills.

To address these digital divides, ZSFG recently received a large grant from the San Francisco General Hospital Foundation, spearheaded by Courtney Lyles, PhD, Associate Professor in the ZSFG Division of General Internal Medicine. The grant will help the team better understand why MyChart enrollment is low, and develop ways to increase enrollment. It will also support partnerships with city agencies and community-based organizations to provide digital devices, skills, and broadband access to patients to access care, in alignment with the San Francisco Digital Equity Strategic Plan.

"This grant is tremendously exciting, because it provides meaningful support to developing countermeasures for provisioning and enrolling patients in MyChart," said Dr. Su. "There are many ways that universal enrollment in MyChart will catalyze telehealth and improve patient care, but we all appreciate how challenging it will be to achieve this goal."

As always, Epic is just a tool, not a solution all by itself. "The EHR could potentially level the field, but without careful attention, there's the risk of widening health inequity for people without broadband access, devices, or adequate digital literacy," said Dr. Su. "Our leadership has been very intentional about ensuring that EHR implementation reflects the core value of health equity. How do we bring something that is inherently complex to where patients are? It's been a hard nut to crack, but it's rewarding to work with people who share a passion for designing systems that address the needs of safety net populations."

Elizabeth Chur
Editors: Neil Powe, Laurae Pearson, Brooks Bigart

SPOTLIGHT

Nora Goldschlager, MD, Professor, Division of Cardiology, is recipient of the Founders' Lectureship Award from the Heart Rhythm Society.

Scott Steiger, MD, Associate Professor, Division of DGIM, was awarded the inaugural peer-nominated 2020 Excellence in Interprofessional Teaching Award. by the UCSF Program for Interprofessional Practice and Education and the Haile T. Debas Academy of Medical Educators.

Anna Chodos, MD, Assistant Professor, Division of DGIM, was named Director of Whole Person Geriatrics for the San Francisco Health Network.