Global eHealth Executive Council

Case Study: How One Hospital Optimised Their EMR to Manage the Covid-19 Pandemic

While some health care organisations are investing in new technologies to manage the Covid-19 pandemic, University of California San Diego Health (UCSDH) improved a tool it already had in its toolbox: the EMR. In response to the Covid-19 pandemic, UCSDH leveraged and enhanced its existing EMR infrastructure to rapidly deploy standard processes, enable data-driven decision-making, and most importantly, support front-line clinicians. These are the five imperative updates UCSDH made to manage the outbreak.

The five imperative EMR enhancements UCSDH implemented

1 Established standardised, multimodal screening and triage processes

To reduce the spread of infection, UCSDH prioritised the need to screen patients outside of the clinic and through channels such as phone, email, and EMR messaging.

At the beginning of the pandemic, the organisation deployed new EMR templates with screening guidance and triage instructions that are easily accessed and used by call centre staff and nurses. Front-line staff follow a standardised script when screening patients, and certain responses trigger provider alerts with guidance for follow-up clinical care. Templates are updated in real-time on the back end with the latest local, federal, and global recommendations, enabling a consistent protocol across the organisation while also making it easier for front-line staff to keep up with the ever-changing guidance.

2 Leveraged EMR-integrated secure messaging to quickly share updates with staff

To quickly respond to evolving needs, UCSDH assembled a seven-person "Ambulatory Covid Team" that included infectious disease physicians, PCPs, and nurses. This team uses the secure messaging platform in the EMR to rapidly communicate updates and share PHI when necessary. The platform enables 24/7 secure communication across clinical teams, and team members can quickly access patient charts attached to messages on computers or mobile devices.

3 Automated lab orders to streamline the testing process

Pre-populated Covid-19 lab order sets were added to the EMR for inpatient, ED, and ambulatory settings. UCSDH conducts in-house testing for patients in the hospital or ED, but tests done in its ambulatory settings were initially sent to a reference laboratory due to capacity limitations, and then brought in-house a couple of weeks later. The pre-populated lab orders include directions specific to the care setting to avoid confusion among providers and breakdowns in the testing process.

Clinical decision support was also added to the workflow at the point of ordering to make sure providers are documenting the testing criteria.

4 Created a reporting dashboard to drive data-driven decision-making

The enterprise reporting team at UCSDH created easily accessible reports in the EMR as well as a Covid-19 operational dashboard that includes real-time data on patients tested, test results, ICU bed availability, and ventilator availability. The dashboard is reviewed in five daily readiness huddles and helps staff members make evidence-based decisions at a time when emotions are high and misinformation is spreading. The dashboard is sent to all health sciences employees and provides visibility into what is happening at any given time, and it helps curb the growing anxiety of clinicians by making the unknown, known.

Sources: Reeves, J. et al, "Rapid Response to COVID-19: Health Informatics Support for Outbreak Management in an Academic Health System," Journal of the American Medical Informatics Association, March 2020, https://academic.oup.com/jamia/advance; Haglund, M, "At UCSD Health, Clinician Leaders Leverage the EHR for COVID-19 Preparedness," March 2020, Healthcare Innovation; Advisory Board interviews and analysis.

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Expanded use of an existing telemedicine platform in the EMR patient portal

UCSDH had previously built telemedicine functionality within its EMR's patient portal, but the capability was not widely used—fewer than 2% of all ambulatory encounters were video visits. To avoid unnecessary exposure to Covid-19, UCSDH expanded telemedicine to all outpatient areas, created self-guided learning videos on virtual care delivery, and repurposed an EMR optimisation team to train and onboard clinical staff.

Over 2,000 clinicians have been trained, and the health system conducted more virtual visits in the first three days since expanding telemedicine offerings than in the previous three years. After 2 weeks, over 50% of all ambulatory visits were virtual.

Three factors that enabled UCSDH's success

Established an interdisciplinary command centre to identify needs, including an IT leader

"Every hospital probably has a command centre open right now, but not every hospital has an IT leader in the command centre. That partnership is the key to success," said Chris Longhurst, a physician who serves as CIO and Associate CMO of Quality at UCSDH.

UCSDH established a 24-hour Incident Command Centre to monitor the rapidly-evolving situation and recommendations. The command centre team included infectious disease experts, administrative executives, clinical informaticists, and IT leaders. Having an IT leader in the room helped the team translate operational needs into technical requirements.

Closely collaborated across clinical and operational leaders

UCSDH was able to pivot quickly to Covid-19 because of the team-oriented nature of their leadership. Longhurst serves in a dual-capacity role, which also helped facilitate communication. "It puts me at the juncture of a lot of medical, technology, and operational conversations," he noted.

This close collaboration helps the IT teams to prioritise projects that were valuable for clinicians and front-line staff. EMR updates were added to automate processes and reduce confusion, to keep staff informed on changing guidance, and to provide easy-to-consume real-time data for decision-making.

Used an agile method to implement new tools quickly

For most other projects, the IT team spends time scoping requirements and developing and testing solutions before rolling out changes. UCSDH had to modify this process to implement updates quickly. New features were constructed to enable quick back-end editing as processes and guidance change frequently.

UCSDH already had a robust system of daily huddles in place prior to Covid-19, but this process was strengthened to enable a lean approach. The organisation also made the decision to deprioritise all other IT projects to support its Covid-19 efforts.

Longhurst believes that IT will play a critical role in continuing to support innovation: "The world has clearly changed, and health IT teams are enabling transformation. For example, telemedicine changed because of the willingness of patients and doctors and the shifting reimbursement landscape, but we were prepared with the infrastructure."

Source: Advisory Board interviews and analysis.

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