Extension of UC San Diego Epic EHR to Student Health Enables "Return to Learn"

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Project Narrative
The UC San Diego Health Epic EHR System is a Key Component of "Return to Learn"

Problem:
The emergence of COVID-19 presented extraordinary challenges for UC San Diego to protect the Triton community in a very short window of time. The pandemic required universities throughout the nation to quickly implement remote learning so that students could continue their studies while they sheltered in place. At the end of the winter quarter, many UC San Diego students returned to their homes, which created space on campus for those who remained to practice social distancing and comply with Governor Newsom's stay-at-home order. While we are proud of the success of our remote education programs, **UC San Diego is committed to continuing to offer students a unique in-person college experience, where they can learn and live on campus.** To that end, a team of UC San Diego clinicians, molecular biologists, technologists, infectious disease experts, bioinformatics specialists, disease modelers, public health experts, and others launched a new program called "Return to Learn." The initial phase, which began May 11th, is designed to make COVID-19 testing available for the more than 5,000 students who continue to reside on the UC San Diego campus. All of these students have health records in the Epic EHR since August 2019, when UC San Diego's Student Health Services including Counseling and Psychological Services (SHS-CAPS), made history by becoming the first in the University of California system to share the integrated and interoperable Epic electronic health record (EHR) with its affiliated health system.

Solution:
Testing of UCSD students is facilitated by Student Health Services and UC San Diego Health, with SARS-CoV-2 test orders placed and resulted in the Epic EHR. Students receive their test results directly in the

MyStudentChart patient care portal linked to Epic. All 40,000-plus UC San Diego students have health records in the Epic EHR, and the MyStudentChart portal already has thousands of students using it today. Structured data available in the Epic EHR as a result of this testing process is being used to facilitate large-scale analyses of the results.

Figure 1 Access to MyStudentChart via Campus Credentials

The decision to transition SHS-CAPS to Epic was made to give students better access to the resources of the academic medical center right on their own campus, and to make clinical information for these students available to everyone helping to manage their care. The Epic EHR has allowed SHS-CAPS to streamline test ordering, result notification, and other aspects of patient care for students, thus improving healthcare efficiency for this population. Imaging studies on student patients read by radiologists in the health system now have a much faster turnaround time. Students referred for specialty care at UC San Diego Health by SHS-CAPS have all of their information available to the specialist, and recommendations can quickly get back to the student's SHSCAPS provider for next steps.
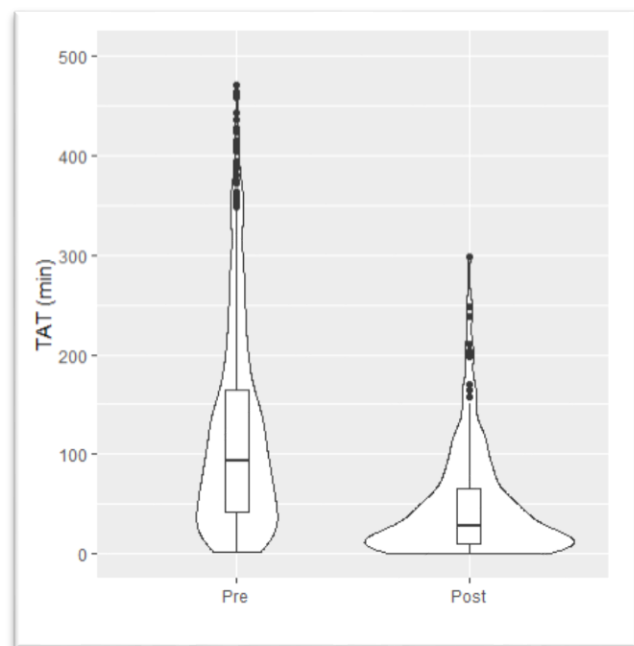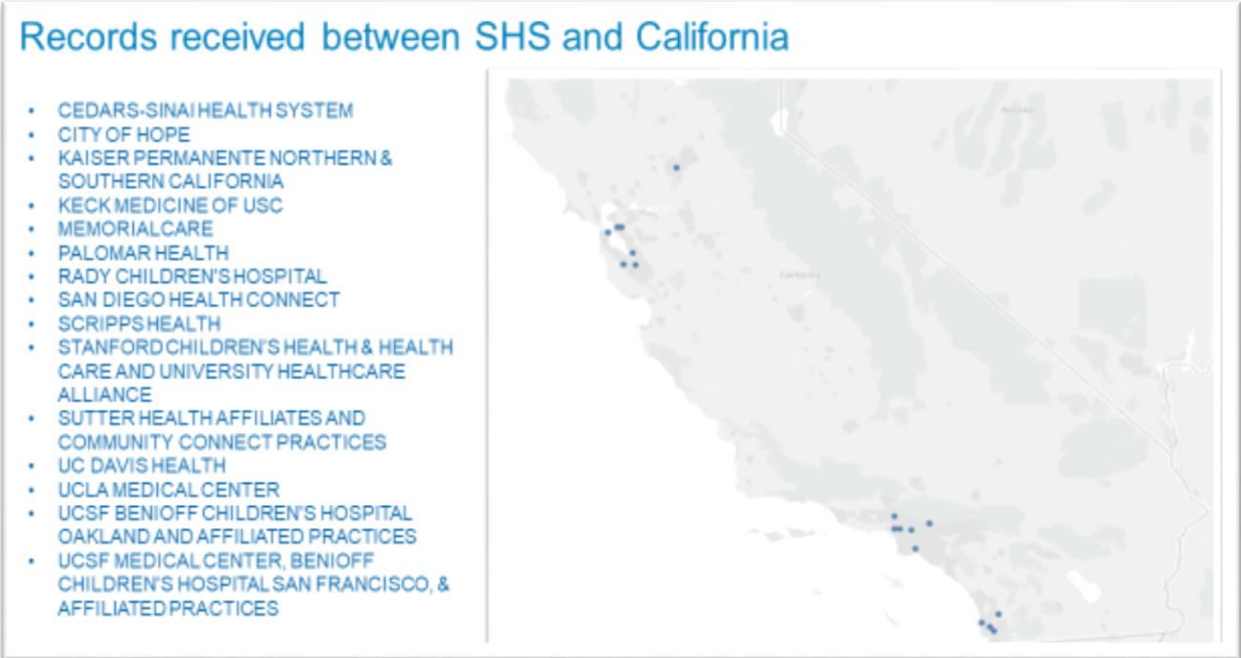

Figure 2 SHS Radiology Turnaround Times, Pre & Post Epic Implementation

In phase two, a telehealth program was launched with a CAPS video visit capability (via iPad) on January 16, 2020. Students could be seen by their provider virtually in the MyStudentChart mobile app on iOS or Android devices. With the advent of the COVID-19 pandemic, telehealth functionality was extended to Student Health Services as fewer in-person clinical visits were being conducted, taking advantage of Epic's integrated video visit capability to continue to care for their patients during this time. By the first week of April, CAPS conducted 300 telehealth visits for students; the week following, 400 such visits (2/3rds video and 1/3rd telephone). Student Health & Well-Being also benefitted from the work that UC San Diego Health Compliance and Billing completed to support proper documentation processes for telephone visits and video visits.

The COVID-19 pandemic has emphasized just how important it is to have access to patient information across the continuum of care, from lab and imaging results to physician notes, across multiple locations and in multiple systems. In addition to seamlessly sharing information within our instance of Epic, we are now able to receive health information on our students from hundreds of other Epic sites around the country via Epic's Care Everywhere. Our students come from all over the country and often have

medical records from other Epic organizations; with the use of the Epic EHR, this information is available to our student health providers to provide our students with better care.
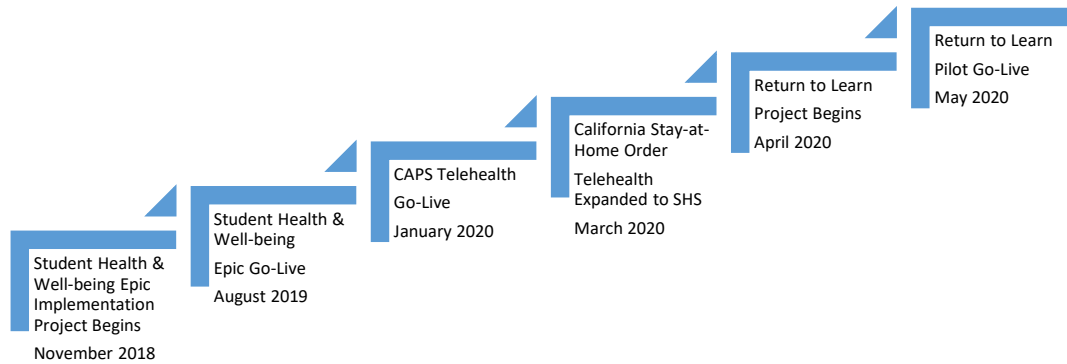

Records received between SHS and California

- CEDARS-SINAI HEALTH SYSTEM
- CITY OF HOPE
- KAISER PERMANENTE NORTHERN & SOUTHERN CALIFORNIA
- KECK MEDICINE OF USC
- MEMORIALCARE
- PALOMAR HEALTH
- RADY CHILDREN'S HOSPITAL
- SAN DIEGO HEALTH CONNECT
- SCRIPPS HEALTH
- STANFORD CHILDREN'S HEALTH & HEALTH CARE AND UNIVERSITY HEALTHCARE ALLIANCE
- SUTTER HEALTH AFFILIATES AND COMMUNITY CONNECT PRACTICES
- UC DAVIS HEALTH
- UCLA MEDICAL CENTER
- UCSF BENIOFF CHILDREN'S HOSPITAL OAKLAND AND AFFILIATED PRACTICES
- UCSF MEDICAL CENTER, BENIOFF CHILDREN'S HOSPITAL SAN FRANCISCO, & AFFILIATED PRACTICES

Records received between SHS and USA

- CHILDREN'S HEALTH SYSTEM OF TEXAS
- CVS HEALTH & MINUTECLINIC
- DUKE UNIVERSITY HEALTH SYSTEM
- JOHNS HOPKINS MEDICINE
- KAISER PERMANENTE (CO, GA, HI, WA, MID-ATLANTIC, & NORTHWEST)
- MAYO CLINIC
- MEDICAL UNIVERSITY OF SOUTH CAROLINA
- MICHIGAN MEDICINE, UNIVERSITY OF MICHIGAN
- NORTHWESTERN MEMORIAL HEALTHCARE
- NYU LANGONE MEDICAL CENTER
- OREGON COMMUNITY HEALTH INFORMATION NETWORK
- PARTNERS HEALTHCARE
- PROVIDENCE HEALTH AND SERVICES (OR & CA)
- THE MOUNT SINAI HEALTH SYSTEM
- UNIVERSITY OF PENNSYLVANIA HEALTH SYSTEMS
- UNIVERSITY OF TEXAS MD ANDERSON CANCER CENTER
- UNIVERSITY OF PITTSBURGH MEDICAL CENTER
- UNIVERSITY OF WASHINGTON MEDICAL CENTER
- VANDERBILT UNIVERSITY MEDICAL CENTER
- VETERANS AFFAIRS
- YALE NEW HAVEN HEALTH SYSTEM/YALE MEDICAL GROUP

Figure 3 Interoperability since Go-Live (Aug '19) to November 2019

In order to maximize the safety of the campus environment, processes for coronavirus testing, contact tracing, and appropriate medical follow up for those tested are required. With Student Health Services now integrated in the health system EHR, UC San Diego was well positioned to launch "Return to Learn" – a testing and tracing program designed to ensure the safety of returning students.

Project Timeline

Student Health & Well-being Epic Implementation Project Begins
November 2018

Student Health & Well-being Epic Go-Live
August 2019

CAPS Telehealth Go-Live
January 2020

California Stay-at-Home Order Telehealth Expanded to SHS
March 2020

Return to Learn Project Begins
April 2020

Return to Learn Pilot Go-Live
May 2020

Measurement of Success
UC San Diego's Return to Learn program aims to broadly test students, faculty, and staff on campus on a recurring basis for presence of the SARS-CoV-2 virus. This evidence-based program, which includes plans for contract tracing and isolation housing for on-campus resident students who test positive for the virus, is intended to better position UC San Diego to resume in-person activities when fall classes begin in September 2020. All of these efforts will be integrated to promote early analysis of viral activity signals and quicker response times. The Return to Learn program has been designed to identify clusters of individuals shedding virus or those at greater risk in specific locations, whether in a residence hall or in a particular academic building. This will facilitate faster treatment, earlier mitigation of identified issues, and continuing refinement and improvement of the system.

This program is unprecedented and audacious, representing the best efforts of both higher education and premier healthcare. If successful, the program can help UC San Diego and similar institutions do what they do best: educate students, conduct leading-edge research, and provide service to our communities. Most of all, it could serve as a model not only for institutions of higher education, but also for cities, counties, and states working to fight the spread of SARS-CoV-2.

Technology
- Systems Converted to Epic EHR:
  - Point 'N Click EMR > EpicCare Ambulatory
  - Radiology (PNC) > Radiant (Epic) and reading from TeleRad to UCSDH Radiology; Viztek PACS > IMPAX
  - Optometry PNC > Kaleidoscope (Epic)
  - ProPharm (Pharmacy) > Willow Ambulatory Module (Epic Retail Pharmacy)
  - Voice Recognition: Dragon > mModal
  - Imports (Manual) > Academic data loads
- Interfaces:
  - Lab interface – Orchard Harvest & Quest (existing)
  - Lab interface – UCSDH Lab (new – Covid-19 to Soft)
  - Penn State CCAPS Questionnaire – P:2 (Fall 2020)
- Epic Welcome eCheck-in allows student to check-in and alerts MD's of their arrival without registration staff at each location
- MyStudentChart application with Single Sign-On
- Epic Immunization module for student self-reported immunizations
- Mobile devices enabling Video visits

- QR code scanning application build

Collaboration
- UC San Diego
  - Information Technology Services: network delineation, device deployment and management
  - Registrar: data loads
  - Student Financial Solutions: SHIP insurance, RAFT, and Self-pay workflows
  - Student Affairs: communication
- UCOP, UC San Diego Campus & Health Privacy, Legal, Compliance, Risk to address FERPA (The Family Educational Rights and Privacy Act) and adding SSN to student application for health record maintenance
- UC San Diego Health
  - Psychiatry, Radiology: referral optimization
  - Health Information Management: medical record management
- Penn State and Epic (EMR vendor) to develop a CCAPS depression and suicide screening questionnaire
- Other campuses live with Epic at their respective SHS/CAPS: University of Cincinnati, University of Michigan

References
UC San Diego transfers student health services data to UCSD Health EHR
Return to Learn Program