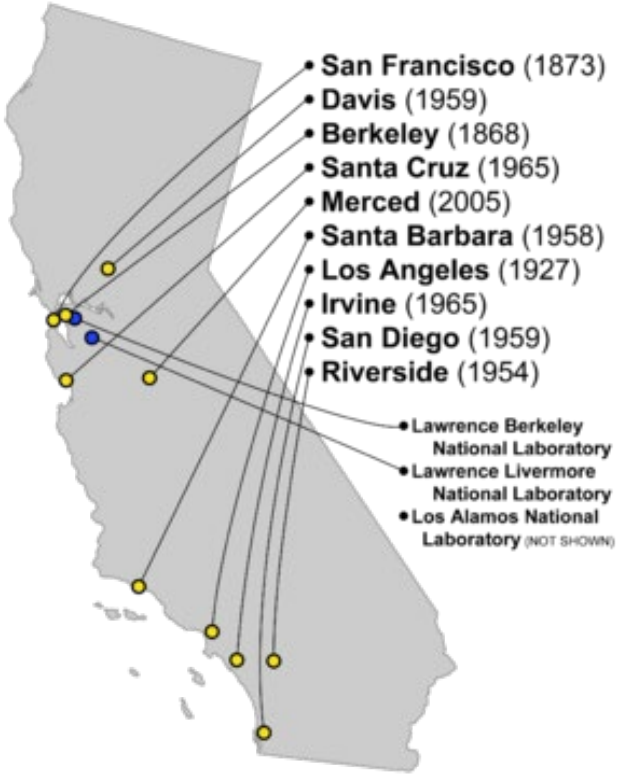
University of California

- 10 campuses and 3 national labs
- ~200,000 employees, ~250,000 students/yr

UNIVERSITY OF CALIFORNIA
HEALTH

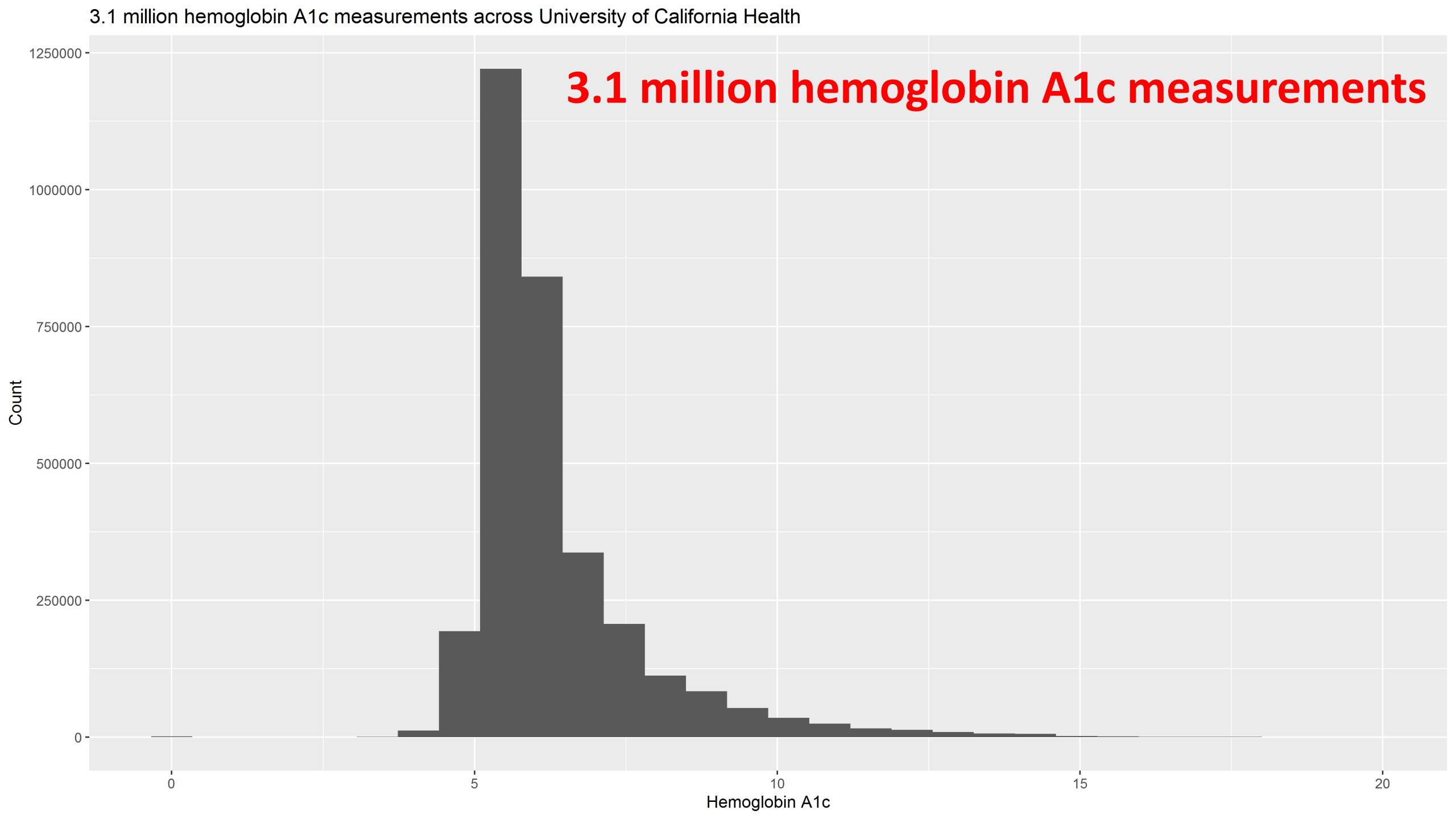
University of California Health

- Tenth largest health system in the US (by revenue)
- 20 health professional schools (6 med schools)
- Train half the medical students/residents in California
- 12 hospitals, 1000 care delivery sites
- 150,000 inpatient and 4 million outpatient /year
- 5000 faculty physicians, 12000 nurses
- ~$2b NIH funding, $13+b clinical operating revenue
- UCSF and UCLA are in US News top 10
- 5 NCI Comprehensive Cancer Centers, 5 NIH CTSA
- IRB reliance, centralized contracting



The University of California has an incredible view of the medical system

- Combined EHR data from UCSF, UCLA, UC Irvine, UC Davis, UC San Diego, and UC Riverside
- Central database built using OMOP (not Epic) as a data backend
  - First Epic installation was January 2012
  - Structured data from 2012 to the present day
  - **7.0 million patients with "modern" data**
  - 220M encounters, 560M procedures, 798M med orders, 722M diagnosis codes, 2.1B lab tests and vital signs
  - "From Tylenol to CAR-T cells…"
  - California OSHPD data, pathology and radiology text elements, death index
  - Claims data from our self-funded plans now included
  - Continually harmonizing elements
- Quality and performance dashboards

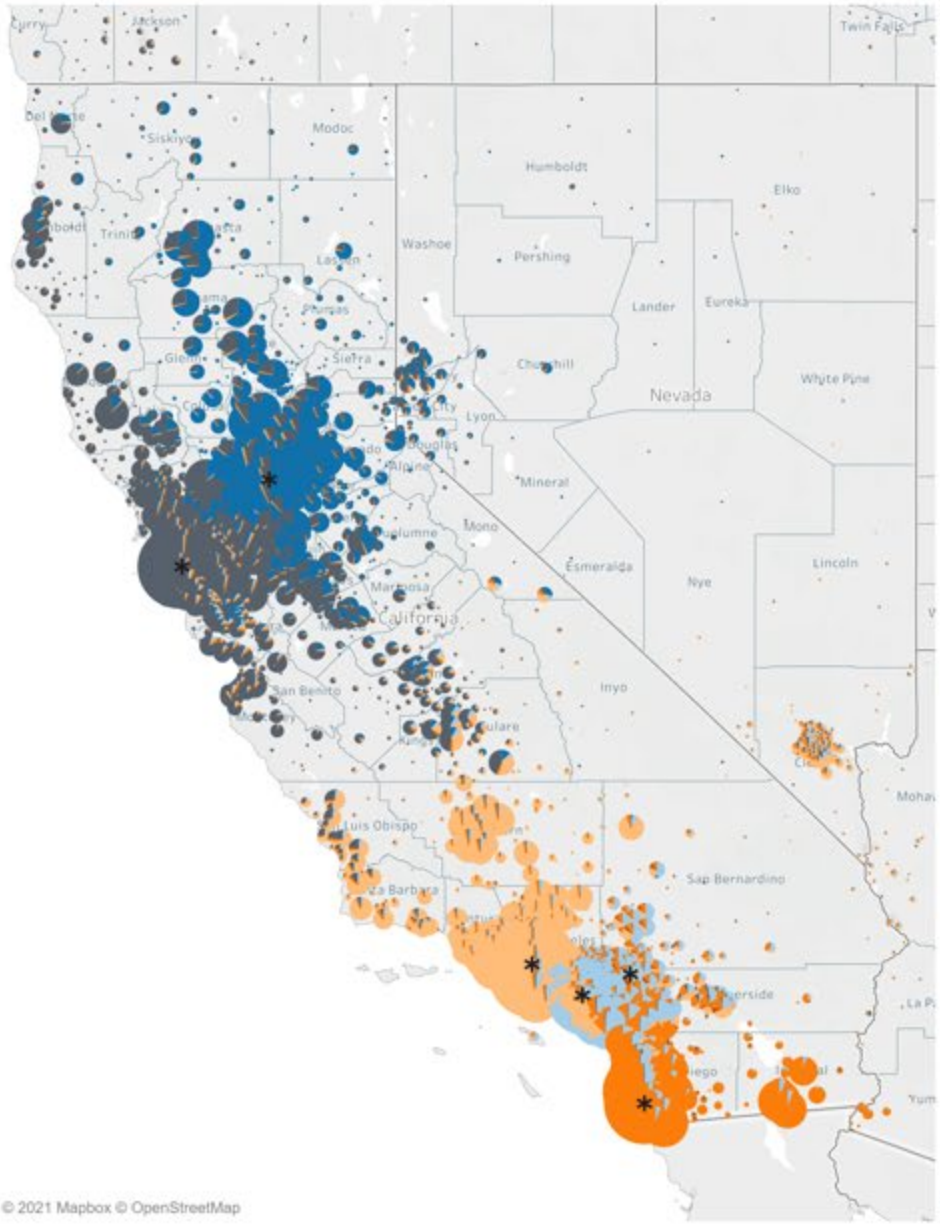

3.1 million hemoglobin A1c measurements across University of California Health
3.1 million hemoglobin A1c measurements
1250000
1000000
750000
500000
250000
0
Count
0
5
10
15
20
Hemoglobin A1c

UNIVERSITY OF CALIFORNIA HEALTH

UC Health Patients (since January 2012)

Gender All | ADI All | Race All | Age All | Active? All | PCP? All | Ethnicity All

Patient Volume by Home Zip Code



Most Recent Visit Date Range

January 2012 to January 2021 and Null values

5,941,496 Total UC Health Patients

UCSF	UCSD	UCLA	UCI	UCD
1,507,922 (25.4%)	821,276 (13.8%)	1,920,937 (32.3%)	762,786 (12.8%)	914,386 (15.4%)

Age Group

	UCSF	UCSD	UCLA	UCI	UCD
65+	297,182	209,401	489,289	189,717	208,768
51-64	214,849	172,106	373,887		162,708
36-50	247,582	183,569	403,235		
18-35	313,167	204,727	448,706	184,355	220,044
2-17	404,359		184,214		
<2					
Unknown					

Race

	UCSF	UCSD	UCLA	UCI	UCD
White	582,762		854,224		
Unknown	599,174	788,464			
Asian					
Other Race					
Black or African Am..					
MultiRace					
Native Hawaiian or ..					
American Indian or ..					

Gender

	UCSF	UCSD	UCLA	UCI	UCD
Female	799,888	444,330	1,035,104	422,106	479,471
Male	705,481		880,011		433,710
Other					

Ethnicity

	UCSF	UCSD	UCLA	UCI	UCD
Not Hispanic or Latino	935,264		1,103,655		
Other		592,444			
Hispanic or Latino					

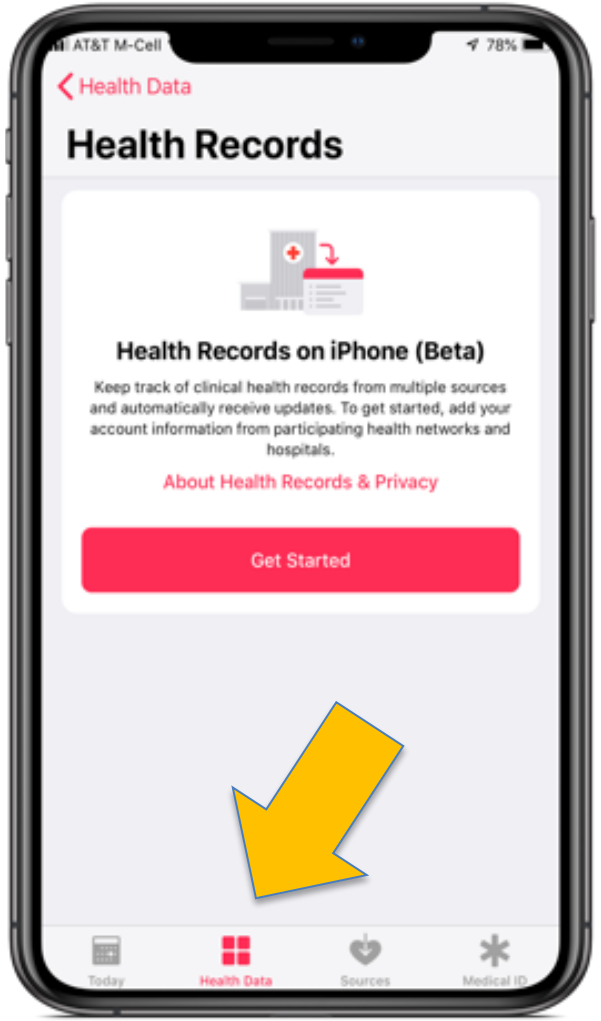
Area Deprivation Index

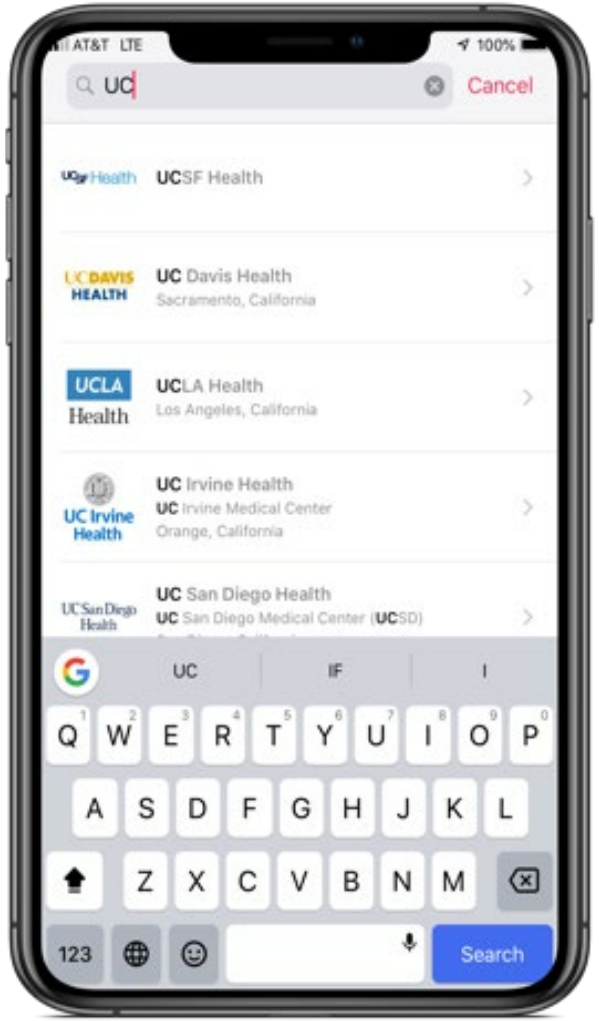
	UCSF	UCSD	UCLA	UCI	UCD
1	306,425		423,899		862,638
2	230,065		306,025	90,694	742,087
3	160,732		236,390		613,870
4	109,507	107,648	170,460	85,964	558,542
5	94,667		120,340	95,446	494,985
6		119,883		86,922	447,842
7				112,173	405,197
8	113,182		131,510		386,963
9	87,932		142,451		346,015
10					379,816
Unknown	152,222	92,019	231,499	117,903	97,177 703,541

Primary Care Population

5,263,120	
792,180	
728,710	
1,534,221	
742,684	
1,451,136	678,376
Non Primary Care Patients	Primary Care Patients

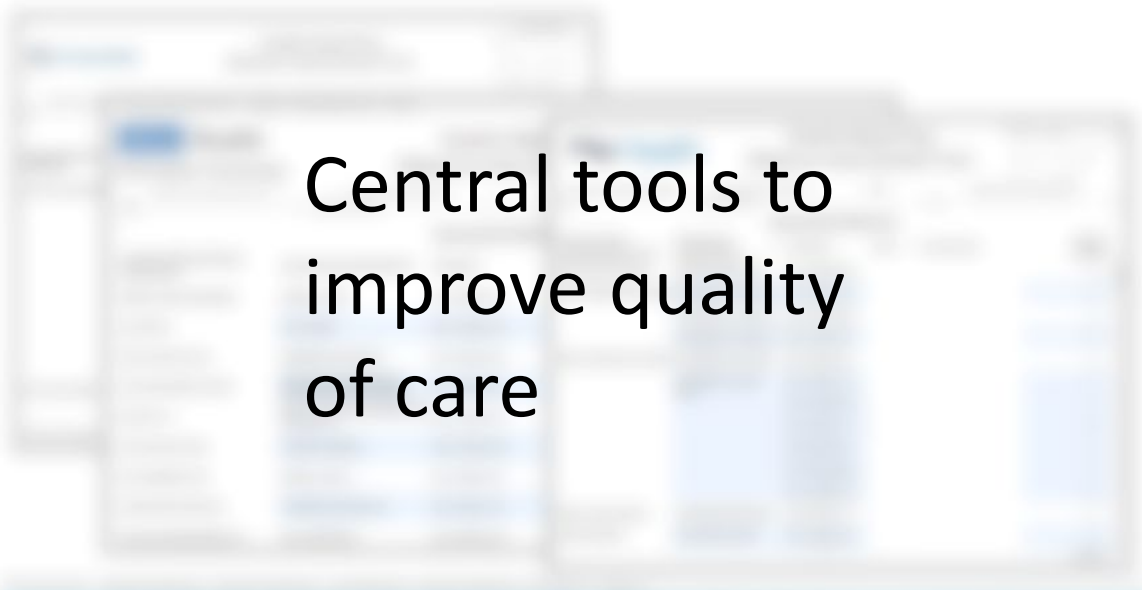
All University of California academic medical centers provide health data to patients through FHIR (and Apple Health)



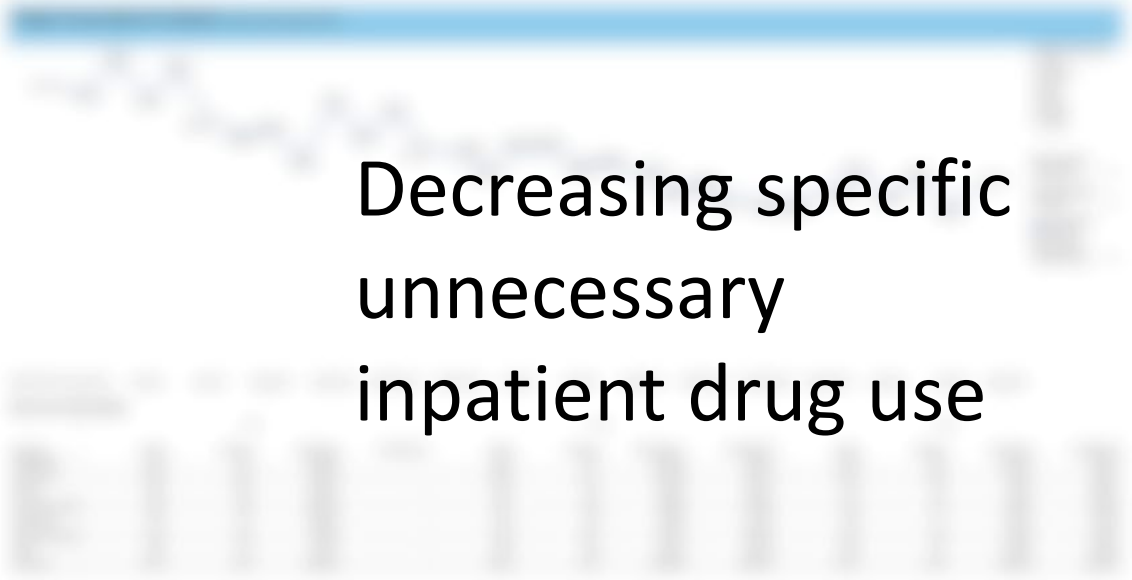


bit.ly/ucappleh

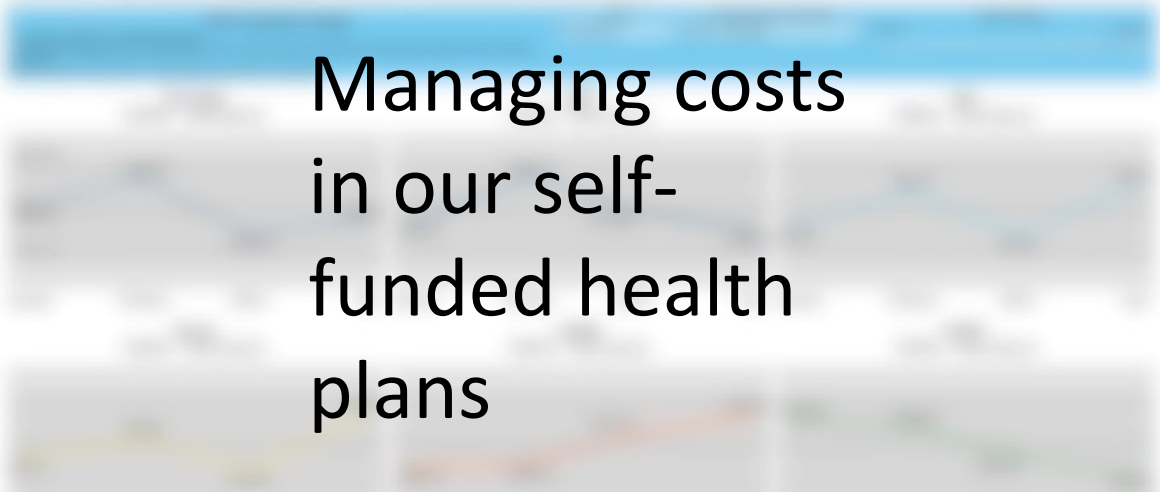
Many operational teams within UC Health now using and benefitting from the UC Health Data Warehouse, saving $millions



Central tools to improve quality of care



Decreasing specific unnecessary inpatient drug use



Managing costs in our self-funded health plans

Centralized population health management

JAMA Network Open

Research Letter | Infectious Diseases

Age- and Sex-Associated Variations in the Sensitivity of Serological Tests Among Individuals Infected With SARS-CoV-2

Rohit Vashisht, PhD; Ayan Patel, MS; Bridgit O. Crews, PhD; Omai B. Garner, PhD; Lisa Dahm, PhD; Charles Wilson, BS; Atul J. Butte, MD, PhD

Author affiliations and article
listed at the end of this articl

Introduction

Antibodies against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are known to appear 2 to 3 weeks after infection,[1-3] but patient characteristics and measurement timing could influence this immune response. This cohort study investigated the sensitivity of antibody tests to detect previous SARS-CoV-2 infection using existing clinical data across the University of California Health (UC Health) system.

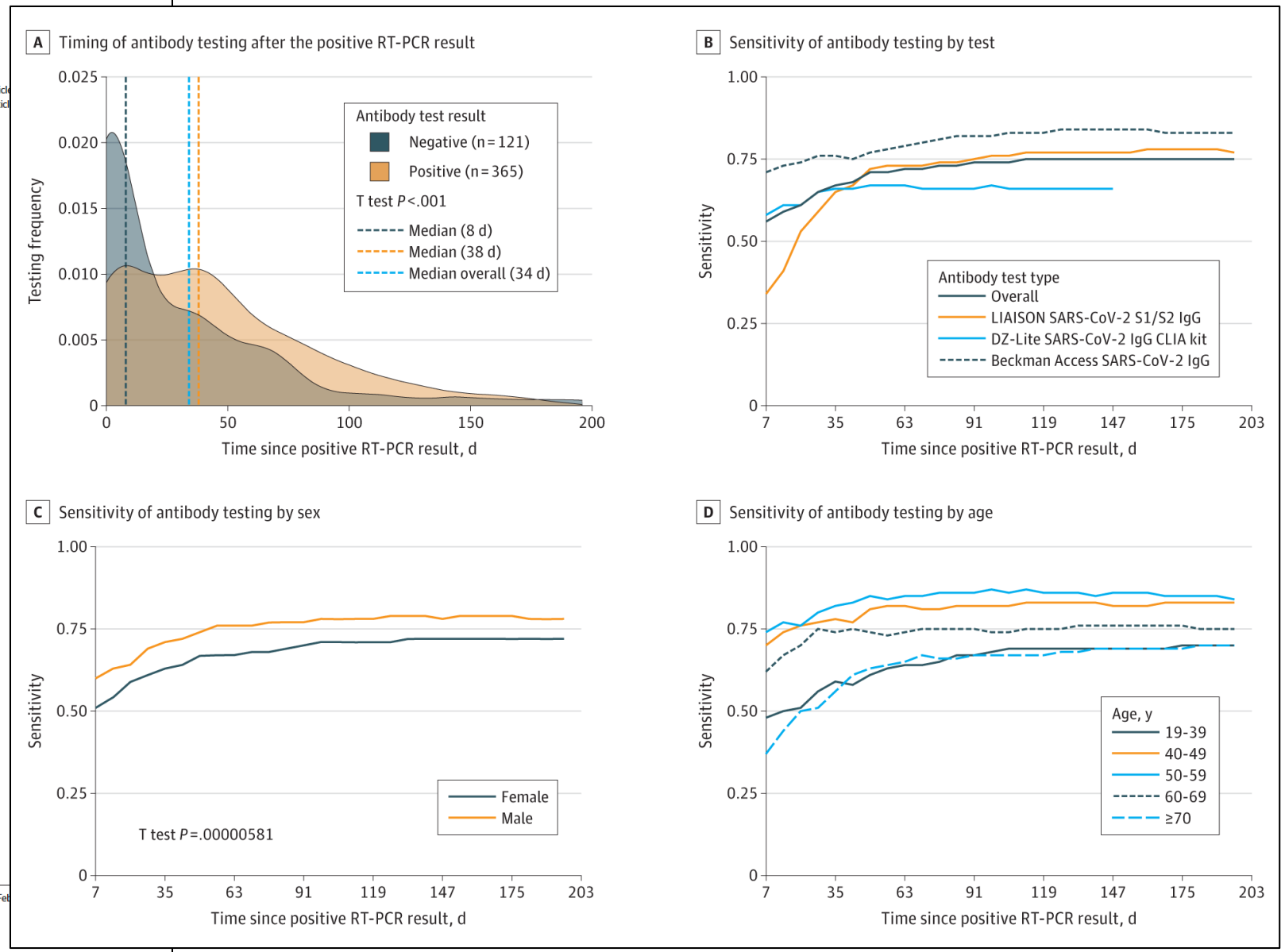
Methods

The institutional review boards across the UC Health system determined this cohort study was not human participants research and therefore was exempt from approval and informed consent. This study is reported following the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline.

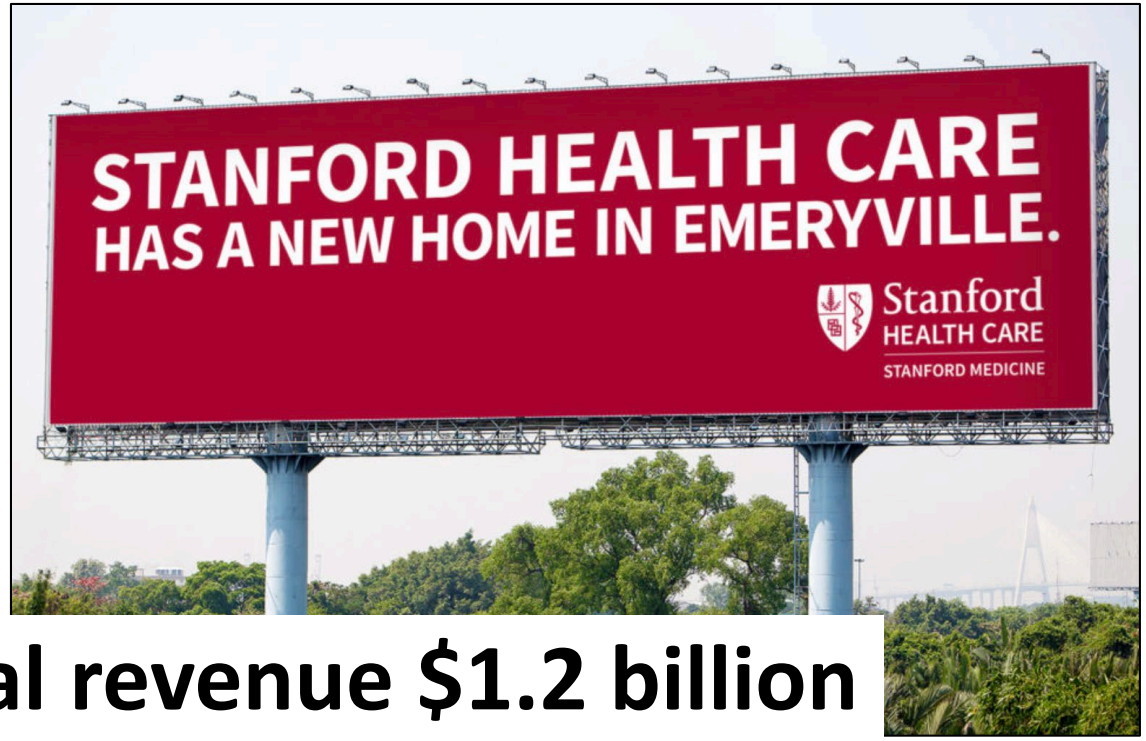
The UC Health system treats the general population across 6 academic health centers and 12 hospitals, with approximately 150 000 inpatient and 4 million outpatient visits yearly. Data for this cohort study were drawn from the UC coronavirus disease 2019 (COVID-19) research data set (UC CORDS), a Health Insurance Portability and Accountability Act–limited data set comprising more than one-quarter–million patients tested for SARS-CoV-2 in any inpatient or outpatient setting. Three types of clinical immunoglobulin G (IgG) measurements were obtained between February 1 and October 15, 2020, in patients with real-time reverse transcription-polymerase chain reaction (RT-PCR) confirmation of SARS-CoV-2 infection. The sensitivity of the antibody test was calculated in 7-day increments from the positive RT-PCR test. We used *t* test to compare sensitivity by patient-reported sex. Analysis of variance was used to compare sensitivity by test types and age groups, followed by pairwise comparison using Tukey Honest Significant Differences. *P* values were 2-sided and corrected for multiple hypotheses. Statistical significance was set at $P < .05$. Analyses were conducted using R statistical software version 3.6.3 (R Project for Statistical Computing). Data were analyzed from August 1, 2020, to October 20, 2020.

Results

Across the UC Health system, 277 567 patients were tested via RT-PCR for SARS-CoV-2 infection (mean [SD] age 47.0 [21.0] years; 150 133 [54.1%] women), and 14 290 were tested for SARS-CoV-2 IgG antibodies (**Table**). Of 10 065 patients with RT-PCR results positive for SARS-CoV-2 infection (mean [SD] age 41.4 [19.9] years; 5165 [51.3%] women), 486 patients (4.8%) underwent subsequent SARS-CoV-2 antibody testing a median (interquartile range) of 34 [3-64] days later (**Figure**, A). Of these, 365 patients (75.1%) had test results positive for antibodies. Antibody response significantly varied based on when the measurement was made. Patients whose serological tests were conducted closer to their positive RT-PCR results were more likely to have negative serological results than those tested later (Figure, A). The likelihood of positive SARS-CoV-2 antibody test results increased with time between the positive RT-PCR result and the antibody test, with sensitivity reaching 0.75 (95% CI, 0.71-0.79) at 112 days after the positive RT-PCR result (Figure, B)



UCSF isn't just any hospital. It's a hospital named after Salesforce's billionaire CEO Marc Benioff.



Stanford clinical revenue $1.2 billion

UCSF clinical revenue $4.8 billion

Data can be used against health systems

Some California Hospitals Refused Covid-19 Transfers for Financial Reasons, State Emails Show

https://on.wsj.com/2IUABIt

Denials expose ways hospitals put finances ahead of pandemic response as coronavirus hospitalizations continue to surge

RECOMMENDED VIDEOS

1. Biden Pledge to Re-Enter Iran Nuclear Deal Will Face Major Hurdles
2. Biden: 'More People May Die' From Covid-19 Due to Delayed Transition
3. Several Dead in Uganda as Police Clash With Protesters
4. Police Fire Water Cannon at Protesters in Berlin
5. With Senate Control in the Balance, Biden Faces Tricky Staffing Choices

Data can be used against health systems

Healthcare workers buy $882k radio ad to highlight high infection rates at Stanford University Medical Center

https://bit.ly/32Yw3b5

Mackenzie Bean - Tuesday, March 20th, 2018 Print | Email

Healthcare workers rolled out an $882,000 radio ad campaign March 19 to increase awareness about high infection rates and healthcare costs at Stanford (Calif.) University Medical Center.

The minute-long ad will air on 11 radio stations throughout the Bay Area.

"As Stanford Health Care has expanded in the Bay Area, they've lost track of the basics like preventing patient infections," the ad's narrator says. "Patients shouldn't have to worry about contracting infections when treated at Stanford Hospital."

High infection rates rest at the center of a monthslong contract dispute between Stanford University Medical Center and SEIU-United Healthcare Workers West, which represents more than 1,800 Stanford employees. Union members released a report last July citing federal data to highlight patient safety and infection control concerns at the hospital. For example, CMS data showed nearly 700 patients acquired *Clostridium difficile* at