

MEDICA: Health Information Exchange and Precision Medicine

Larry Friedman, M.D.

Associate Dean for Clinical Affairs

Professor of Pediatrics and Medicine

CEO, International Clinical Programs

University of California, San Diego Health System and School of Medicine

UC San Diego Health



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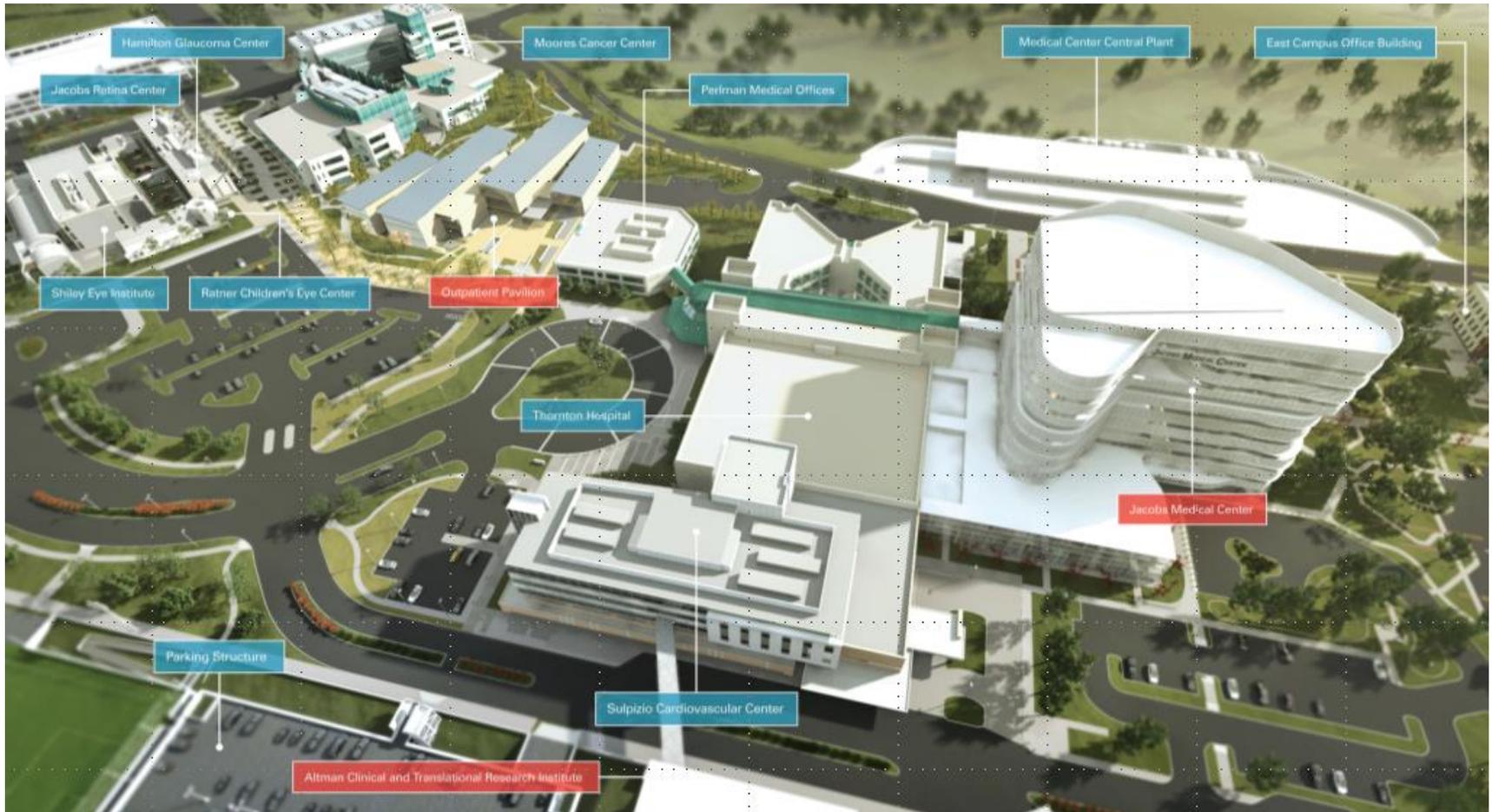
UC San Diego



1. Washington Monthly's 2016 College Guide

- Established in 1960
- Founded with a focus on engineering, technology and science
- Ranked 1st in nation for seventh year for its positive impact on the country¹
- Ranked world's 15th best university by *U.S. News & World Report*

UC San Diego Health, La Jolla – 2017

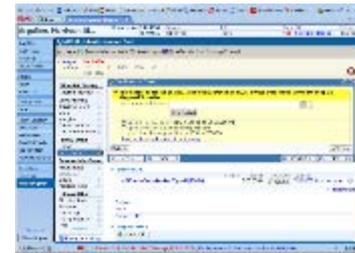


Major US Healthcare Trends

- Value Over Volume
- Data
 - Big Data
 - Universal Adoption of Electronic Health Records
- Consumerism
 - Quality and Cost Data Readily Available on the Internet
 - Social Media
 - Non-Traditional Healthcare Encounters and Patient Experience

$$V = \frac{Q + S}{C}$$

(VALUE) = (QUALITY) + (SERVICE) / (COST)



Health Care Trajectory

“The arc of history is increasingly clear: Health care is shifting focus from the volume of service delivered to the value created for patients, with “value” defined as the outcomes achieved relative to the costs”

Porter, ME, “What is Value in Health Care”, NEJM 2010;363:2477-81.

Porter, ME, Larson, S. and Lee, “Standardizing Patient Outcomes Measurement”
NEJM 2016; 374:504-506.

Can Mount Sinai be serious? The answer is a resounding yes. In fact, we couldn't be more serious.

Mount Sinai's number one mission is to keep people out of the hospital. We're focused on population health management, as opposed to the traditional fee-for-service medicine. So instead of reacting care that's isolated and intermittent, patients receive care that's continuous and coordinated, much of it outside of the traditional hospital setting.

That's the tremendous emphasis on wellness programs designed to help people stop smoking, lose weight and better sleep, lower their blood pressure and reduce the risk of a heart attack. By being as proactive as possible, patients can better maintain their health and avoid disease.

Our Mobile Acute Care Team will treat patients at home who would otherwise require a hospital admission for certain conditions. The core team involves physicians, nurse practitioners, registered nurses, social workers, community

paramedics, care coaches, physical therapists, occupational therapists, speech therapists, and home health aides.

Meanwhile, Mount Sinai's Preventable Admissions Care Team provides traditional care services to patients at a high risk for rehospitalization. Through a comprehensive bedside assessment, social workers partner with patients and caregivers to identify known risk factors as well as barriers to medication. They'll work hand-in-glove with housing and literacy.

It's a sweeping change in the way the health care is delivered. And with the new system comes a new way to measure success. The number of empty beds.

1-800-MD-SINAI
mountsinaihealth.org



IF OUR
BEDS ARE FILLED,
IT MEANS
WE'VE FAILED.

The Rise of Healthcare Transparency

The Rise of Consumer Driven Health Care

- Use of The Internet for Health Information
- Use of the Internet for Public Reporting
- The ability to judge care, costs and satisfaction from outside the organization by viewing published elements that paint a picture of supposed competency
- Transparent data and information allows consumers, providers and stakeholders to compare and make informed decisions



Photo
Credit: 3

Real-time feedback

← Back → Forward WEB REF ESA Home Schedule In Basket Chart Encounter Tel Enc Secure Record Viewer Help Desk Print Log Out

Epic Home Allergies Not on File PCP None Alerts INS **HM!** No billing informati... MyChart Inactive

7/20/2008 visit with Anupam Goel

Images Questionnaires Admin Benefits Inquiry SmartSets Open Orders Print AYS

Allergies: **Not On File**
 Last Vitals: BP: P: T: T Src: Resp: W: H:
 BMI: , BSA:

Office Visit Charting
 Referring Provider

Nurse Charting
 Chief Complaint
 Vitals
 Allergies
 Quick Questions
 Current Medications

History/Review
 History
BestPractice

Documentation/Orders
 Problem List
 SmartSets
 Orders
 Progress Notes

Follow-up/Billing
 Pt. Instructions
 Follow-up
 Comm Mgt
 Charge Capture
 INS

Hotkey List
 Exit Workspace
 Navigator Hotkeys

BestPractice Alerts

This patient is due for an A1C, urine microalbumin and LDL. Please pend these orders by using the triggered SmartSet.

Acknowledge Reason:

Open SmartSet: A1C + LDL + URINE MICROALBUMIN
 Open SmartSet: Diabetes testing not done
 (Last done by Anupam Goel at 1836 on 7/20/08)
[Jump to document reason for not testing](#)

Restore Close F9 Previous F7 Next F8

Problem List

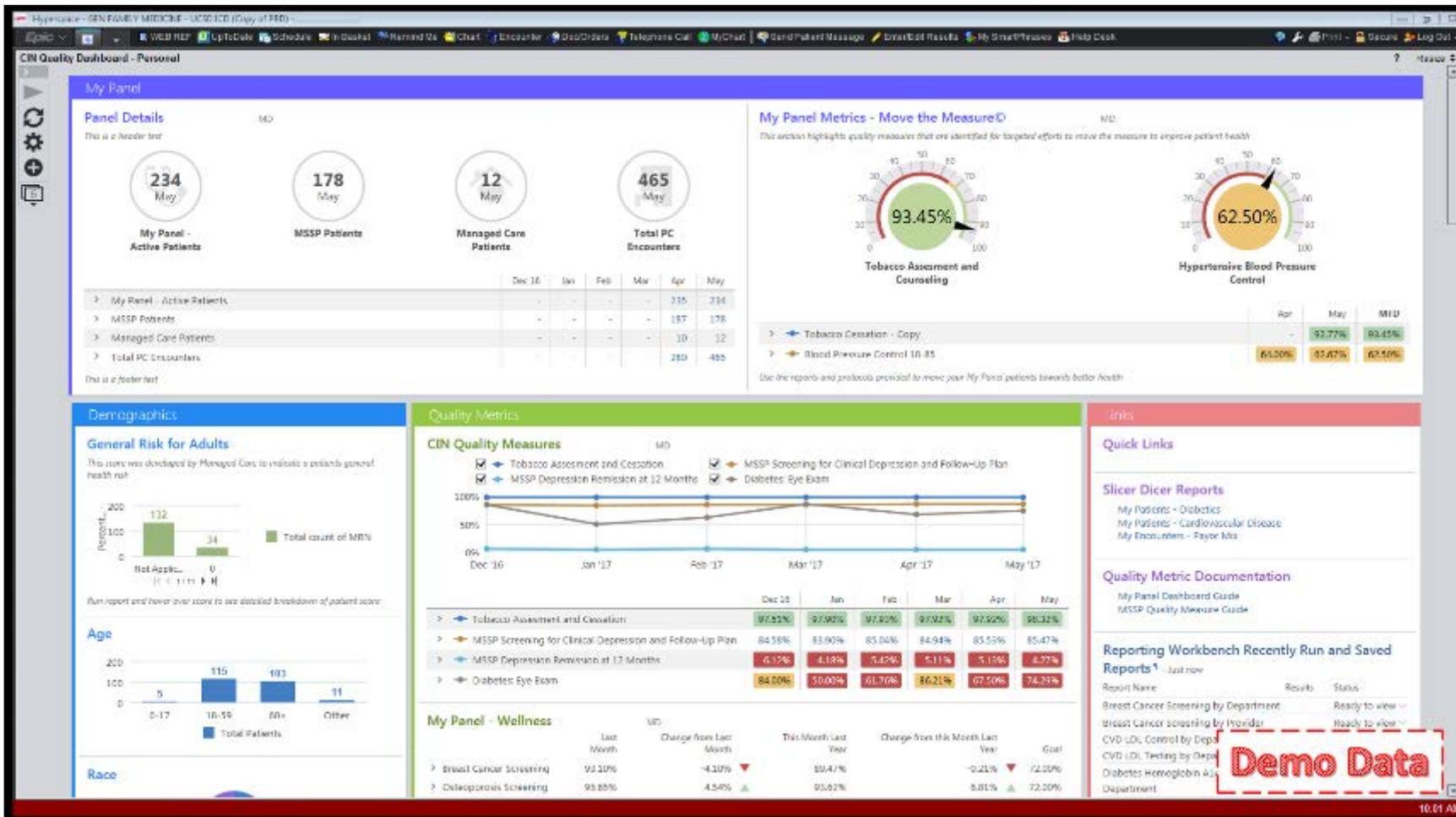
Priority	Noted	Resolved	Updated
	7/20/2008	<input checked="" type="checkbox"/> Resolve	7/20/2008 Goel, Anupam

[DM w/o Complication Type II \[250.00\]](#) [Problem List](#)

Orders
 None
[Order Entry](#)

Progress Notes

ANUPAM GOEL Patient Call, Results, Staff Message, HELP DESK, Rx Response, Pt Reminder, My Incomplete Notes, 4:25 PM



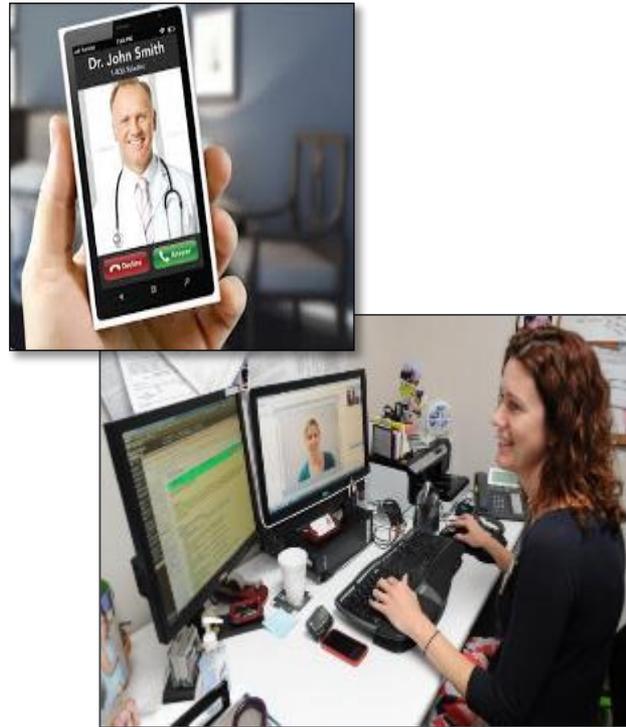


Once logged in, patients can:

- View test results
- Read messages from physician & clinic
- View upcoming appointment details & cancel appointments
- View past appointments & After Visit Summaries
- Send **non-urgent** messages to physician & clinic
- View preventive health reminders
- View current and historical information in the health record

Patient Experience

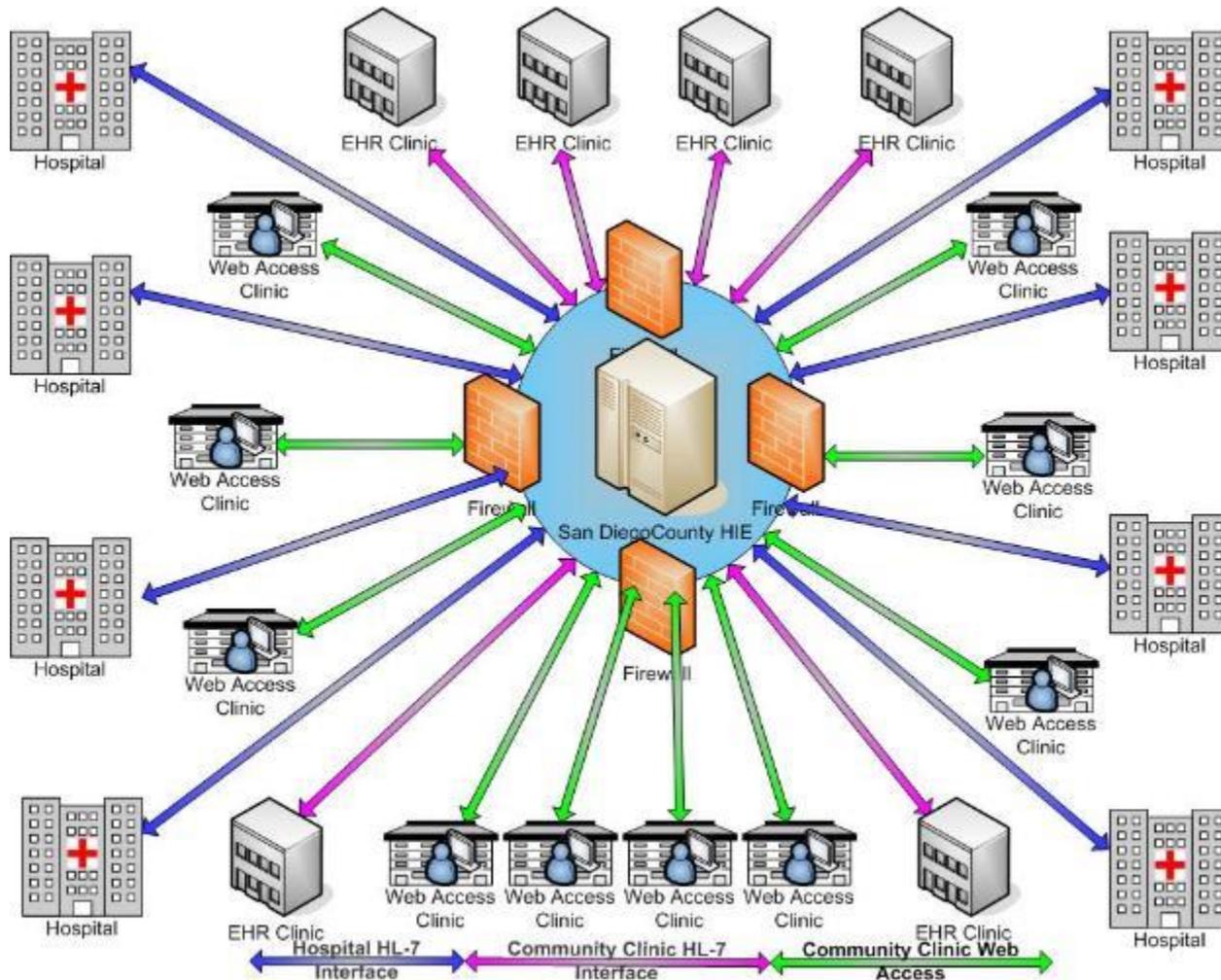
Office / Home Telemedicine Services



TELEMEDICINE SERVICES TO HOME OR OFFICE

- **Access to trusted physicians in your network**
 - Secure and private office visits and consultations with your network of providers
- **Mobile monitoring of health status**
 - Blood pressure and vital signs
- **Real-time feedback**
 - Online video and voice physician/patient communication
- **Health Maintenance Updates**
 - Real-time medication management
 - Upcoming or overdue health screenings
- **Online management of chronic conditions**
 - Diabetes, cardiovascular disease, and other chronic conditions monitored through routine online evaluations between visits

Health Information Exchange The Next Challenge.....



Physiologic data (JAMIA, April 2016)

Automated integration of continuous glucose monitor data in the electronic health record using consumer technology

RECEIVED 31 May 2015
REVISED 29 October 2015
ACCEPTED 8 December 2015



RB Kumar,^{1,2,*} ND Goren,¹ DE Stark,³ DP Wall,¹ and CA Longhurst⁴

ABSTRACT

The diabetes healthcare provider plays a key role in interpreting blood glucose trends, but few institutions have successfully integrated patient home glucose data in the electronic health record (EHR). Published implementations to date have required custom interfaces, which limit wide-scale replication. We piloted automated integration of continuous glucose monitor data in the EHR using widely available consumer technology for 10 pediatric patients with insulin-dependent diabetes. Establishment of a passive data communication bridge via a patient's/parent's smartphone enabled automated integration and analytics of patient device data within the EHR between scheduled clinic visits. It is feasible to utilize available consumer technology to assess and triage home diabetes device data within the EHR, and to engage patients/parents and improve healthcare provider workflow.

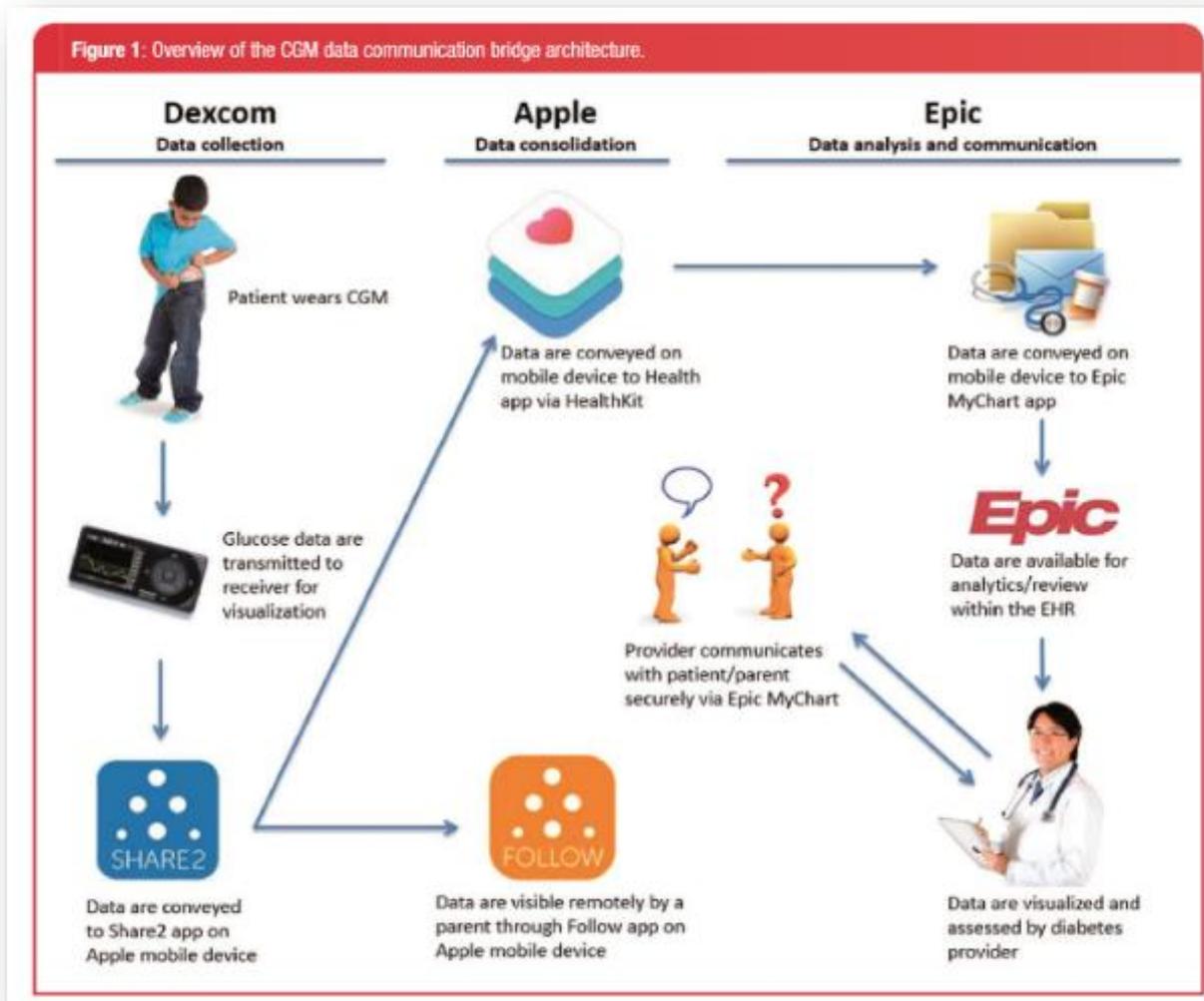
Keywords: electronic health records, patient generated health data, mobile applications, blood glucose, clinical informatics

INTRODUCTION

Type 1 diabetes is one of the most common chronic diseases of childhood, and its incidence and prevalence continue to rise.¹⁻³ Tight control of hyperglycemia (high blood glucose) with intensive insulin therapy, including in early childhood, decreases the risk of serious long-term diabetes complications.⁴⁻⁶ However, aggressive insulin dosing may result in hypoglycemia (low blood glucose) with risk of adverse changes in the central nervous system.^{7,8} As a result, self-monitoring of blood glucose is critical for affected children and their parents to guide mealtime insulin dosing and to facilitate interventions

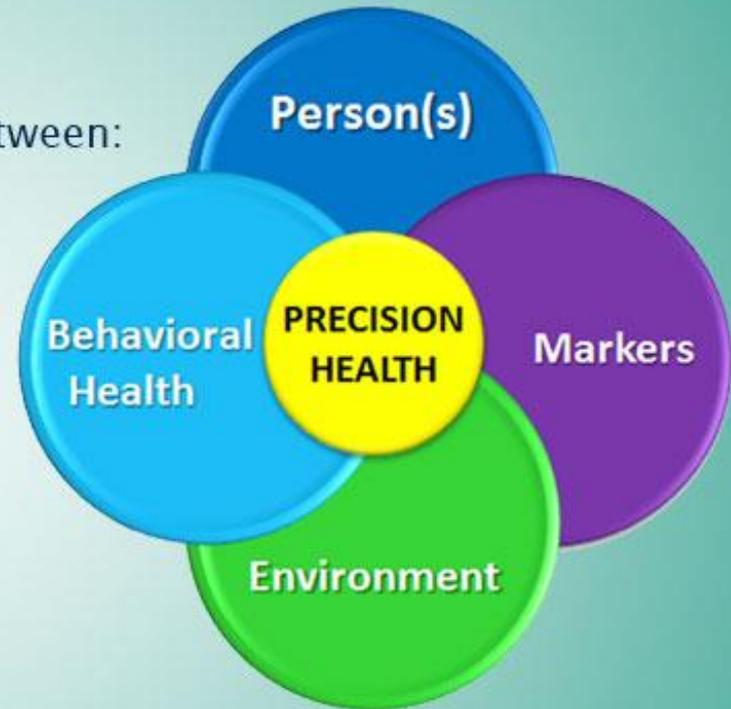
announced that its patient portal app ("MyChart") would be HealthKit compatible, our team recognized the opportunity to use this platform for integration of patient device data into the EHR.¹⁹ Subsequently, a major continuous glucose monitor (CGM) device company (Dexcom, San Diego, CA, USA) announced compliance of its patient-facing app with the described platform, and we launched a pilot initiative to assess the feasibility of EHR integration of home-based continuous glucose monitoring. Our Institutional Review Board exempted this quality improvement initiative from oversight.

EHR Data Integration Architecture

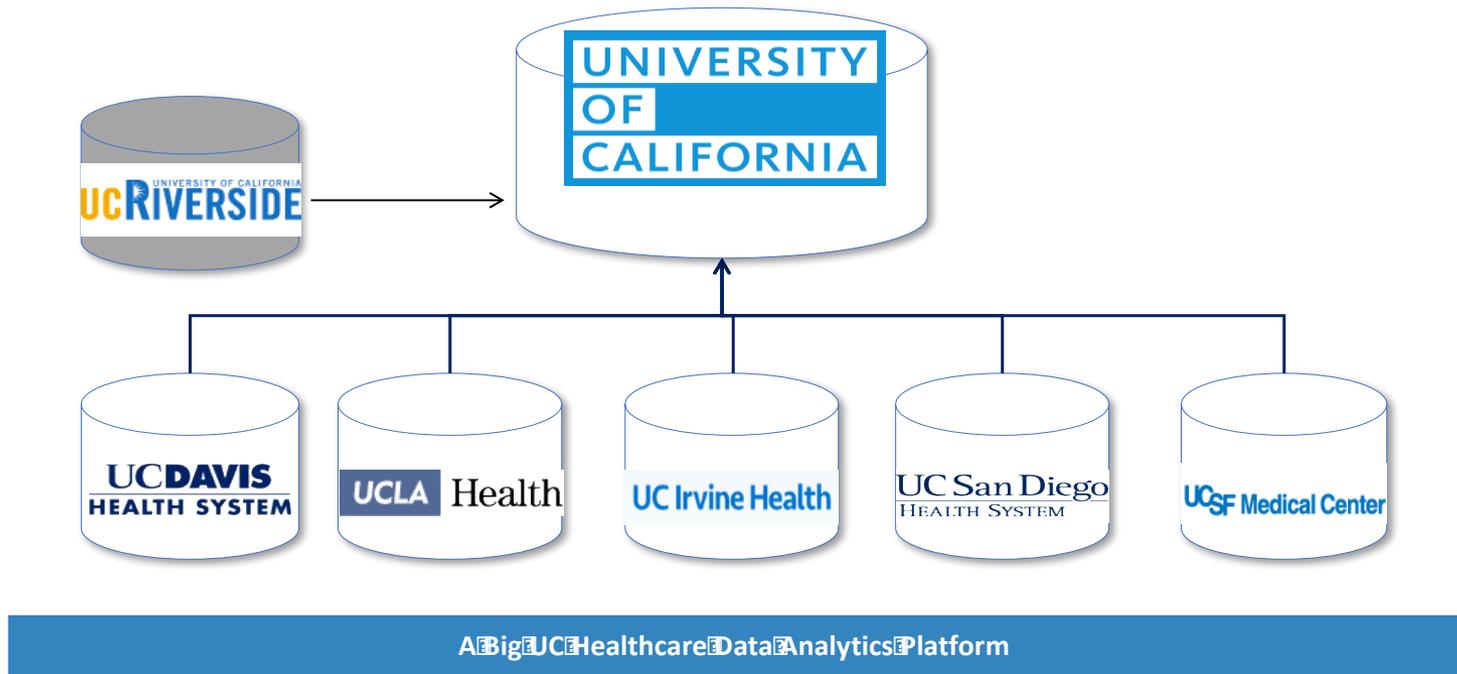


Precision Medicine is the intersection between:

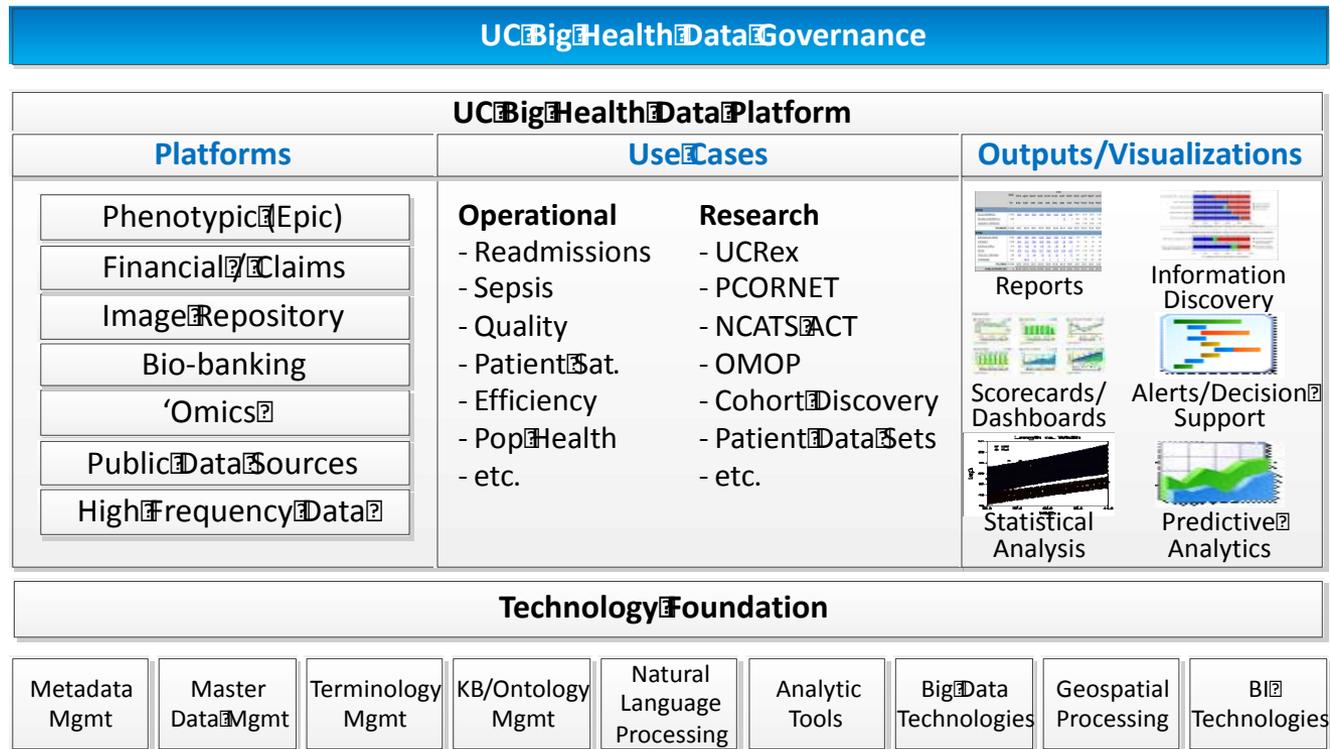
- ✓ Individuals & Populations
- ✓ Markers of health and illness
- ✓ Environment
- ✓ Behavioral Health



Combining healthcare data from across the six UC medical schools and systems



Bringing UC's clinical data together creates an asset with few (if any) peers





Transforming Healthcare in disruptive Times
the challenges in the Time of deconstruction of business processes and
Disruption of business models and the strategic fields of action

To Dos for change – evolve or perish (Disruption)



Introduction – Summary of the visits



Build Up a Health Information Management (HIM) Strategy



Institutionalization of Health Information Exchange (HIE) in the Strategy

Vormittag
Key Note Vorträge

Nachmittag

- Problemstellung
- Gruppenarbeit
- Ergebnispräsentation



Summer School, Rady Childrens Hospital San Diego

Friday, 27.07.2018, 09:00

Akademie für Unternehmensführung und IT-Service-Management in der Gesundheitswirtschaft

Transforming Healthcare in disruptive Times
the challenges in the Time of deconstruction of business processes and
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To Dos for change – evolve or perish (Disruption)

Introduction – Wrap Up Day one

Prepare your self, install a Change and a Lean management.

Vormittag
Key Note Vorträge

Nachmittag

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Summer School

Saturday, 28.07.2018, 09:00

Akademie für Unternehmensführung und IT-Service-Management in der Gesundheitswirtschaft

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the challenges in the Time of deconstruction of business processes and
Disruption of business models and the strategic fields of action

To Dos for change – evolve or perish (Disruption)

**Special
Workshop**

Introduction – Wrap Up of the first two days

Build Up a Health Information Management (HIM) Strategy

Fundamental influences on the HIM Strategy - Precision Medicine

Institutionalization of Health Information Exchange (HIE) in the Strategy

Prepare your self, install a Change and a Lean management.