

NASEM AI in Genomics Workshop

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Disclosures

I have no disclosures to report.

Roadmap

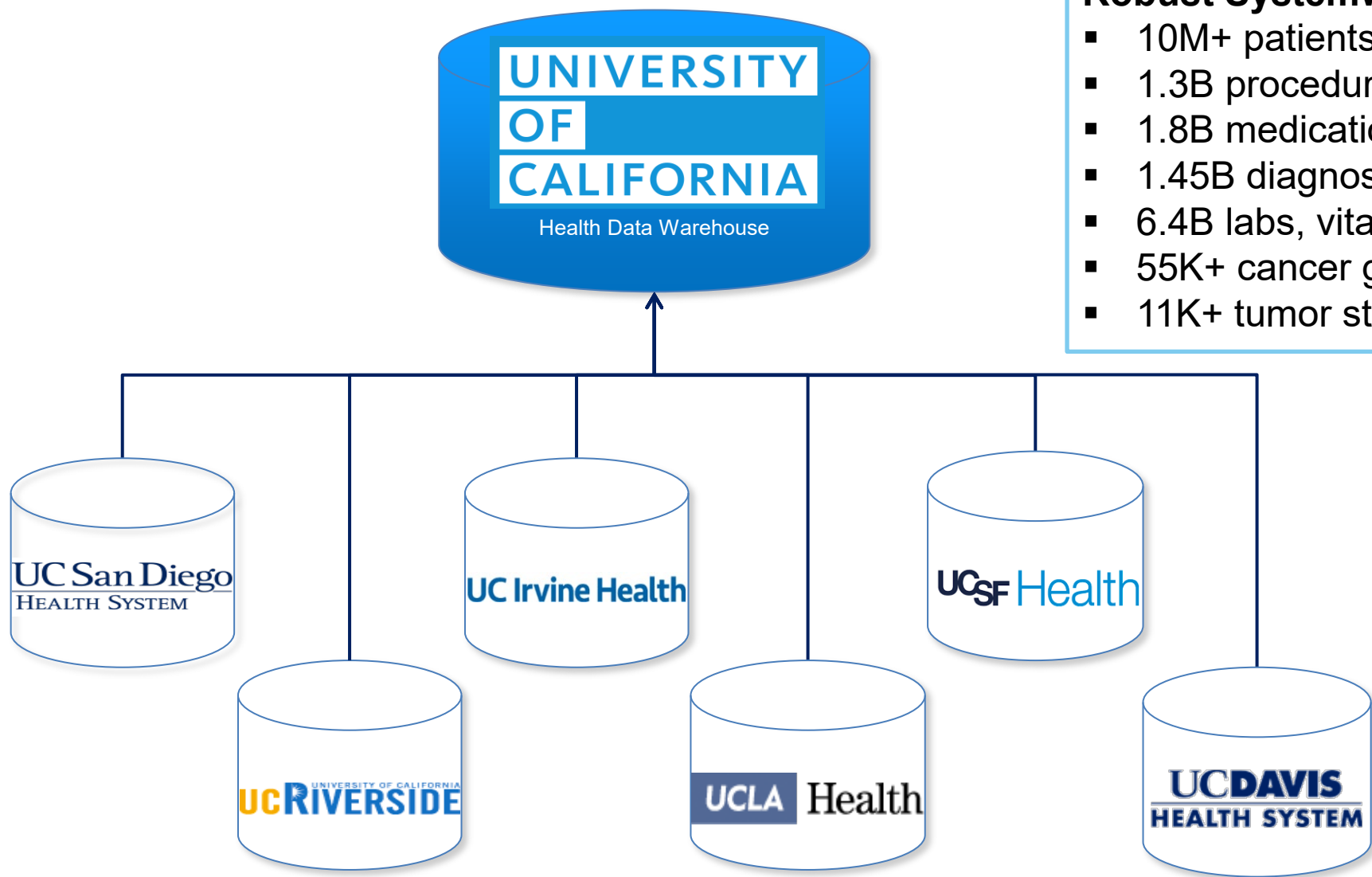
- AI in healthcare across University of California Health
- AI governance as a critical enabler of adoption
- Privacy considerations in genomics
- Takeaways and looking ahead

University of California Health



- Six academic health centers
- 21 health professional schools
- Global Health Institute
- Systemwide healthcare services for UC employees and students

UC Health Center for Data-driven Insights and Innovation (CDI2)



Robust Systemwide Data

- 10M+ patients data
- 1.3B procedures
- 1.8B medications
- 1.45B diagnosis codes
- 6.4B labs, vital signs, & measurements
- 55K+ cancer genomes
- 11K+ tumor staging data

AI use cases across UC Health

Research • July 16, 2024

Using AI to Improve Detection of Rare Diseases

UCSF-UCLA researchers co-create algorithm that searches electronic health records for faster diagnoses.

By Melinda Krigel

Publication | Articles | November 6, 2024
The American Journal of Managed Care
November 2024 | Volume 30 | Issue 11 | Pages: 548-554

Proactive Care Management of AI-Identified At-Risk Patients Decreases Preventable Admissions

Author(s) Ann C. Raldow, MD, MPH , Naveen Raja, DO, MBA , Chad W. Villaflores, MS
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Proactive care management for artificial intelligence (AI)-identified at-risk patients reduced potentially preventable hospital admissions.



PUBLIC HEALTH | April 10, 2025

UC Davis Health uses AI models to leave no patient behind

New algorithm can help identify patients in need of care management and advance health equity

[Home](#) | [JAMA Network Open](#) | [Vol. 8, No. 10](#)

Original Investigation | Health Policy

Use of Ambient AI Scribes to Reduce Administrative Burden and Professional Burnout

Kristine D. Olson, MD, MSc^{1,2}; Daniella Meeker, PhD³; Matt Troup, PA-C⁴; [et al](#)

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CASE STUDY



Large Language Models for More Efficient Reporting of Hospital Quality Measures

Authors: Aaron Boussina, Ph.D. [ORCID](#) , Rishivardhan Krishnamoorthy, M.S. [ORCID](#) , Kimberly Quintero, R.N., M.S. [ORCID](#) , Shreyansh Joshi [ORCID](#) , Gabriel Wardi, M.D. [ORCID](#) , Hayden Pour, M.S. [ORCID](#) , Nicholas Hilbert, R.N., M.S.N. [ORCID](#) , [+6](#) , and Shamim Nemati, Ph.D. [ORCID](#) [Author Info & Affiliations](#)

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AI governance as a critical enabler of adoption

- Builds trust with end users and those impacted – patients, providers, administrators, community
- Enables vetting and authorization of AI tools more quickly and in a transparent, replicable manner
- Reduces the risk of unexpected harm and reputational damage
- Ensures compliance with existing and evolving laws and regulations
- Promotes safe and ethical innovation ecosystem

Components of responsible AI

**Validity and
Reliability**

Safety

**Accountability and
Transparency**

**Security and
Resiliency**

**Explainability and
Interpretability**

Privacy

Fairness

**Addressing
Workforce Impacts**

Privacy considerations in genomics

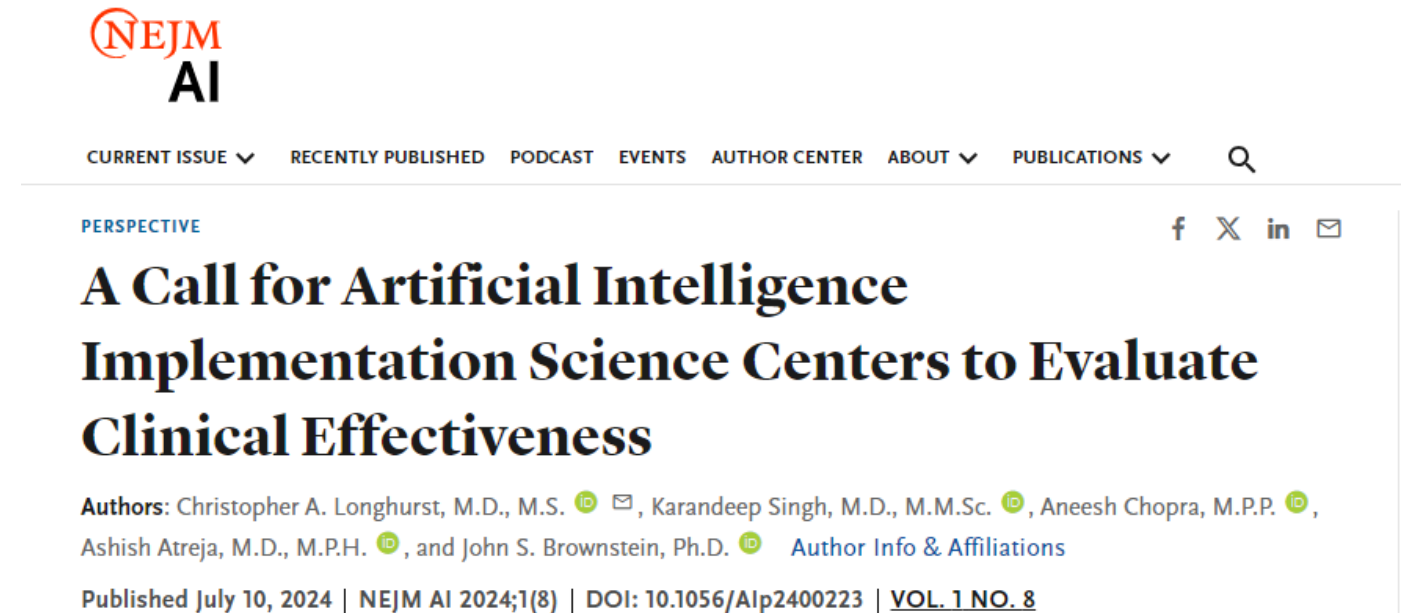
“Genomic data are largely immutable, associative, and convey important health, phenotype, and personal information about individuals and their kin (past and future). In some cases, small fragments of genomic data stripped of identifiers can be used to re-identify persons, though the vast majority of the genome is shared among individuals.”

NIST IR 8432: Cybersecurity of Genomic Data

- Privacy-enhancing technologies (PETs) may help mitigate risk by allowing sensitive data to be used and shared securely without exposing personal information BUT
 - Data utility versus privacy trade-off
 - Technical complexity
 - Practical deployment barriers

Initial model validation only the first step

Essential to evaluate clinical effectiveness for success – are AI technologies improving patient outcomes, treatment and workflow efficiencies, and cost-effectiveness?



UCSF Health receives \$5M gift to develop AI monitoring platform

San Francisco-based UCSF Health and the UCSF Division of Clinical Informatics and Digital Transformation received a \$5 million gift to develop an automated artificial intelligence monitoring platform for clinical care.

UC Health NIH engagement: fostering AI innovation

- UC Health Responds to NIH with Recommendations for Artificial Intelligence Strategy
 - Fund research that supports real-world evaluation and implementation of AI, especially in operational areas, to improve efficiency and lower costs.
 - Create new funding opportunities to encourage collaboration with industry partners, ensuring that health research discoveries can be translated to the real world in partnership with private sector partners.
 - Invest in the education and upskilling of a modern health workforce capable of delivering AI innovation at scale.
 - Convene regulatory agencies to develop a joint framework that enables safe, high impact research on transformative care models using AI.

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INSTITUTES
Global Health Institute

July 14, 2025

Creating a Healthy America by Advancing the Science of Healthcare Innovation, Academic-Industry Collaborations, and an AI-Enabled Workforce

On June 3, 2025, the National Institutes of Health (NIH) issued a Request for Information (RFI): Inviting Comments on the NIH Artificial Intelligence (AI) Strategy. On behalf of University of California Health, we appreciate the opportunity to respond to the RFI and hope that it may inform NIH's efforts to promote research and innovation while safeguarding patient interests.

Improving the health of the American people while lowering the cost of care is a national priority. At University of California Health, we serve millions of patients each year across urban, rural, and underserved communities and educate thousands of trainees, with our footprint spanning six academic health centers and 21 professional schools. Every day across our system, we use research and innovation to reimagine healthcare through redesign of healthcare operations, improvements in care delivery and patient safety, and reduction of waste. We believe that smart investments in science, technology, and workforce development will help secure America's leadership in health care and create a healthy America.

Takeaways for responsible AI in healthcare

- Start with a need that can be addressed by AI
- AI tools can provide benefit even when they don't save time
- Understanding how AI tools are implemented in workflow is critical to success
- Requires multidisciplinary approach
- Different risks presented by predictive and generative AI

Looking ahead

Areas of focus

- Reducing clinician burden
- Improving patient access and coordination of care
- Research collaboration
- Workforce readiness and change management for AI workflows
- Monitoring of AI tools for safety, equity, and performance

Extraordinary potential

"Scalable Privilege" – How AI Could Turn Data From the Best Medical Systems Into Better Care for All

Thank you!

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