UNIVERSITY OF CALIFORNIA HEALTH

2024-2025
ANNUAL REPORT

Center for Data-driven Insights and Innovation

Table of Contents

In Memoriam: Atul Butte, MD, PhD

Dr. Atul Butte, co-founder of CDI2 and the UCHDW, a world-renowned biomedical informatician and pioneer in using big data and AI for healthcare, passed away on June 13, 2025, at the age of 55 after a battle with cancer. He was a pediatrician, professor, inventor, entrepreneur, mentor, and cherished colleague, friend, husband, and father. He will be greatly missed, and his legacy will continue to inspire us all.

> “Nowhere else in the United States do six large academic health centers share data in a manner like we do in the University of California.
>
> Like many universities, we have multiple strengths, and figuring out how to pull together and channel resources for the common good is a challenge.
>
> **When it works, it’s incredible and I do believe nothing can stop us.”**

– Atul Butte, MD, PhD
(1969 – 2025)

Letters of Introduction

Letter from Cora Han

Cora Han, JD
Chief Health Data Officer
UC Health

Throughout this past year marked by great change, the Center for Data-driven Insights and Innovation (CDI2) continued its mission of responsibly leveraging health data to enhance clinical care, research, and operational excellence across UC Health. Our journey underscored our steadfast commitment to collaboratively driving data-informed decisions and discoveries that empower all Californians.

I deeply appreciate the CDI2 team, our Oversight Board, former UC President Michael Drake, Executive Vice President David Rubin, and the entire UC community for their invaluable support and dedication. We remember Atul for his incomparable and relentless commitment to the promise of data, his generous spirit towards collaboration and mentorship, and his engaging sense of humor.

This year, we significantly advanced our capabilities by migrating the UC Health Data Warehouse (UCHDW) to a cloud-based infrastructure and incorporating clinical notes into the warehouse for the first time. We deepened collaborations across UC Health through targeted projects improving ambulatory care access, maternal health equity, chronic disease management, and patient safety. These efforts directly support UC Health's strategic objectives.

Research initiatives supported by CDI2 achieved remarkable growth, with user engagement on the CDI2's secure data science research environment increasing over 113%. CDI2 also contributed to high-impact research projects, notably in Alzheimer's disease and autoimmune treatment guidelines. CDI2 actively promotes responsible Artificial Intelligence (AI) governance, providing expert input on legislative matters and creating frameworks for ethical and secure AI use. Our commitment to AI innovation and responsibility was highlighted in a presentation to the UC Board of Regents.

Strategic partnerships with industry leaders such as Merck, Amgen, Genentech, and BeOne further reinforced UC Health's prominence in generating impactful real-world evidence. We continue to gather university, industry, and community leaders and advocates annually at our UC Health CDI2 data conference.

As we navigate ongoing challenges and opportunities, we remain focused on our vision to revolutionize data-driven healthcare. On behalf of the CDI2 team, I welcome our new UC President James B. Milliken. Together, we look forward to another year of transformative collaborations, innovation, and progress, continually working towards a healthier, more equitable future for all.

Fiat lux,

Cora Han, JD
Chief Health Data Officer
UC Health

Letter from David Rubin

As we reflect on another year of transformative progress at the Center for Data-driven Insights and Innovation, I am both humbled and inspired by our collective efforts to harness data as a catalyst for expanded access, innovation and impact.

This past year, CDI2 enabled work across the UC system at the intersection of health data science and clinical care to translate complex data into meaningful improvements for patients and communities. By integrating millions of de-identified patient data points, we have enabled research that begins to identify some of the causes of health disparities, inform new pathways for equitable access to care, and accelerate the adoption of best practices across our hospitals and clinics.

We have seen these efforts in action: from leveraging artificial intelligence to streamline diagnosis and treatment, to using real-world data to uncover gaps in cancer screenings. Such initiatives not only sharpen the precision of care but also ensure that innovations benefit the people who are at highest clinical and social risk for poor health outcomes.

Yet our aspirations are tinged with profound loss. Earlier this year, we mourned the passing of Dr. Atul Butte, a visionary pioneer whose relentless curiosity and insight into biomedical informatics shaped the very core of our field. His legacy—fueled by generosity, clarity, and bold exploration—remains woven into the foundation of our work.

As we carry forward his spirit, we reaffirm our commitment to transform data into meaningful action to advance the health of people in California and across the nation. Together, we will continue building bridges between insights and outcomes, ensuring that data fuels compassion, inclusion and health for all.

Sincerely,

David Rubin, MD, MSCE
Executive Vice President
UC Health

David Rubin, MD, MSCE
Executive Vice President
UC Health

CDI2 Mission, Vision & Team

Mission

CDI2 responsibly leverages health data in innovative ways to advance improvements in clinical care, research, and operations throughout UC Health, driving decisions and discoveries that empower and inspire the people of California, the nation, and beyond.

Vision

CDI2 will revolutionize what it means to be a data-driven healthcare system.

CDI2 is dedicated to every Californian's right to access equitable, high-quality, personalized healthcare. We cultivate exceptional expertise in data science and governance to collaborate with partners across UC Health and with partners in the public and private sectors. By leveraging health data and insights in these collaborations, we empower our partners to reduce costs, improve care quality, and accelerate state-of-the-art research. We are relentless in catalyzing transformational change in healthcare and a more just future through the responsible and safe use of health data - serving as a model for the nation and the world.

Team

The CDI2 team is led by Cora Han, JD (Chief Health Data Officer) and advised by Monte Ratzlaff (Chief Information Security Officer, UC Systemwide and UC Health Data Warehouse), Mike Kilpatrick (Technology Program Director, UC Systemwide IT and Chief Technology Officer, UC Health Data Warehouse), and Karandeep Singh, MD (UCSD Chief AI Officer and CDI2 AI Advisor). CDI2 reports on a quarterly basis to an Oversight Board with representatives from each campus. We are fortunate to have the guidance of our Oversight Board, chaired by Tom Andriola (Vice Chancellor for Information Technology & Data, UC Irvine) for many years, which brings valuable expertise and perspectives to guide our strategic direction. On our board this past year, we said farewell and thank you to Tom, Parag Agnihotri, MD (Chief Medical Officer for Population Health, UCSD), Kay Burke, RN, MBA (Chief Nursing Informatics Officer, UCSF), Helen Lau (former Director of Quality, Patient Safety, Risk Management, and Population Health, UC Riverside) and Noelle Vidal (Healthcare Compliance and Privacy Officer, UCOP). We welcomed Amy Sitapati, MD (Chief Medical Information Officer, UCSD), Sara Murray, MD, MAS (Vice President and Chief Health AI Officer, UCSF), and Naveen Raja, DO, MBA (Chief Medical Officer, UC Riverside) to the Board. We appointed Albert Duntugan, MHA (Chief Data and Analytics Officer, UCLA) as our new chair and celebrated the return of Shanda Hunt, JD, CCEP, CHRC, Director of Compliance at UCOP. The full and current membership of the Oversight Board is shown in Appendix 1, and the complete CDI2 and UCHDW team rosters are shown in Appendix 2.

The primary function of CDI2 is the maintenance and growth of the data analytics capabilities and technical infrastructure for the UC Health Data Warehouse (UCHDW), a unique system-level data asset that contains electronic health records (EHR) from the six academic health centers – UC Davis, UC Irvine, UC Los Angeles, UC Riverside, UC San Diego, and UC San Francisco. The UCHDW also includes claims data from the UC self-funded health plans, as well as other data from external sources including Vizient.

Currently, the UCHDW contains data on over 10 million patients who received care at a UC facility since 2012. Over this time, providers at UC Health conducted over 1.3 billion procedures, ordered or prescribed nearly 1.8 billion medications, made more than 6.4 billion vital signs and test result measurements, including 55,000 sequenced cancer genomes, and assigned more than 1.5 billion diagnosis codes.

CDI2 collaborates closely with various teams and departments across UCOP and UC Health, including Executive Leadership, Clinical Affairs (including UC Population Health), Strategic Sourcing and Value-Based Initiatives (including UC Pharmacy), as well as with each health campus. At this writing, our team has developed over 265 unique dashboards and contributed to over 100 data-driven projects across UC Health. The data and analytics provided by the CDI2 team have also enabled 24 new peer-reviewed publications since the prior Annual Report (58 to date), demonstrating our commitment to advancing research and clinical care.

UCHDW | Systemwide Partnerships & Projects

The UCHDW continues to set the standard for best-in-class, data-driven learning in healthcare. Most recently, the team migrated the warehouse to the cloud, a two-year initiative that modernized the database and optimized data ingestion and utilization. The scalable, cloud-based infrastructure not only allows the UCHDW to increase the breadth and type of data available, but also accelerates the development of tools and algorithms for advanced data analytics offered to our partners across UC Health.

Over the past fiscal year, CDI2 continued to collaborate on various initiatives with Executive Leadership, our colleagues at UC Health including Clinical Affairs (and UC Population Health), Strategic Sourcing and Value-Based Initiatives ("S2VBI" and UC Pharmacy), and Health Policy and Regulatory Affairs. CDI2 also partners across the Office of the President (Federal and State Government Relations), and the UC system.

Three major areas of focus are described below.

Leveraging Data to Support Systemwide Medicaid Advocacy

CDI2 continues to play an instrumental role in systemwide advocacy efforts to articulate the scope and impact of UC Health's care for patients who rely on Medicaid (in California, "Medi-Cal").

Over the past fiscal year, UC's Institutional Research and Academic Planning department (IRAP), State Governmental Relations, Federal Governmental Relations, and UC Health's Policy and Regulatory Affairs teams have all utilized CDI2 data and analytics support to demonstrate UC Health's impact for Medi-Cal patient care. UC advocates combine the Medicaid Dashboard information shown in the figure below with other data making for powerful and transformative conversations with state and federal legislators. In these ways, CDI2 has helped to demonstrate our significant provision of care to the Medi-Cal population and how those services have grown over time.

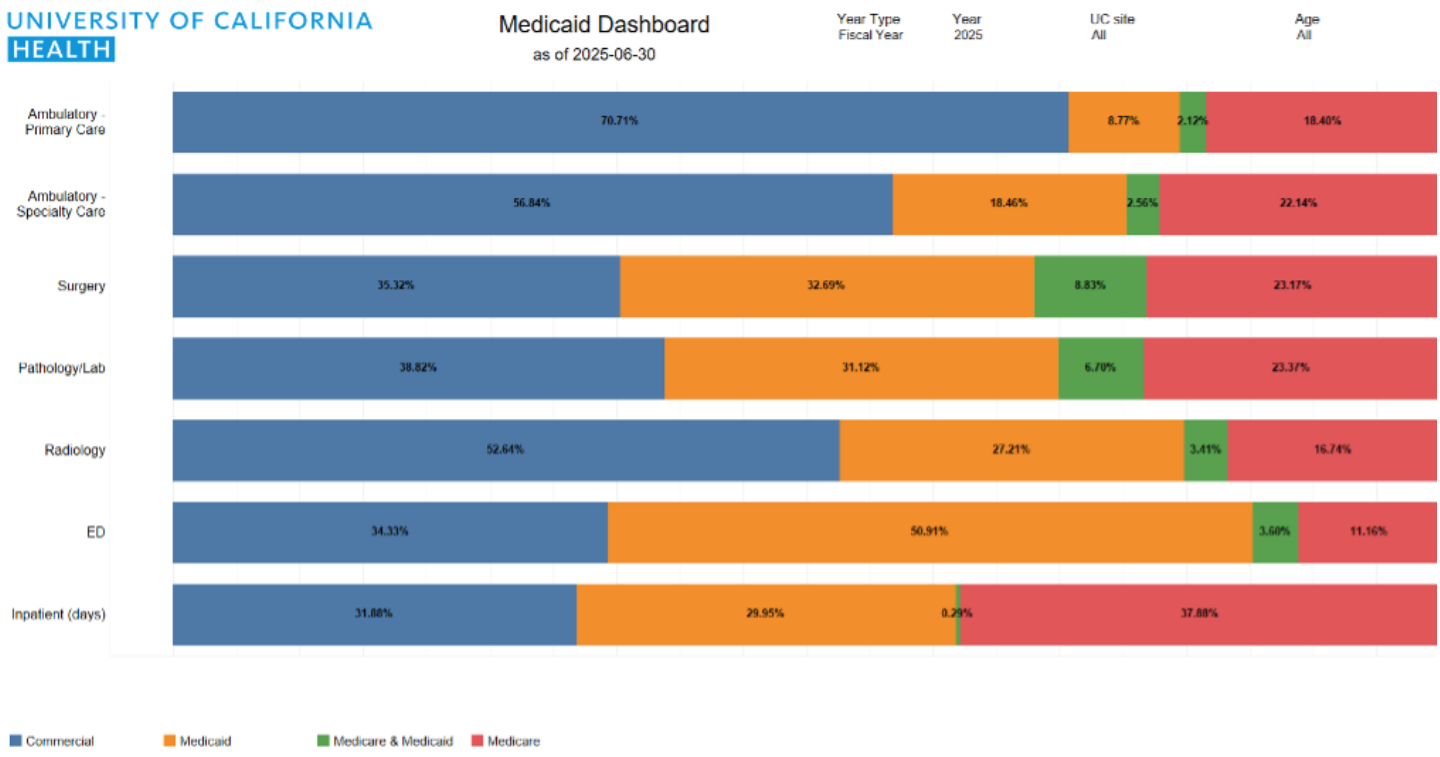


Figure 1: This dashboard details the various sources of payment received by UC Health across selected medical specialties, primary care, and inpatient care, for FY2024-2025.

UC Health is proud of our contributions to Medi-Cal* over the past few years:

UC Health is the largest provider of outpatient services to Medi-Cal patients in the state of California.

UC Health is the second-largest provider of in-hospital care for Medi-Cal patients, despite having only 7% of the inpatient beds in the state.

The volume and complexity of care provided to Medi-Cal patients has increased over time; for example, 25% of transplants across UC Health are now covered by Medi-Cal.

**Data derived from UC Health report to the UC Regents in January 2025.*

Towards Continued Improvement in Ambulatory Care Access and Quality

CDI2 works closely with the Clinical Affairs team (formerly Clinical Strategy and Operations) in pursuit of UC Health's short- and long-term goals to improve ambulatory care and advancing equitable maternal care. Below we highlight two collaborative projects:

IMPROVING WAIT TIMES FOR APPOINTMENTS

- Improving access to ambulatory care, especially for new patients and newly diagnosed cancer patients, is a primary short-term objective across the six UC academic health centers. CDI2 plays a critical role in helping to achieve this objective by providing analytics on the number of days between when a patient calls and when they have their first appointment. The cohort is defined as all adult patients including those seeking primary, medical, and/or surgical specialty care.

ADVANCING MATERNAL CARE

- Healthcare inequities in maternal care and outcomes is a nationally known public health problem, especially among Blacks or African Americans in which inequities exceed all other groups.
- The Centers for Disease Control define Severe Maternal Morbidity (SMM) as unexpected outcomes of labor and delivery that result in life-threatening complications or consequences for the mother, such as stroke, sepsis, or heart attack. (**LINK**)
- Preliminary data pulled from the five UC academic health centers demonstrate higher rates of SMM in patients who identify as Black, have Medi-Cal insurance, and/or those without access to pre-natal care prior to hospitalization and labor.
- CDI2 is engaged with the Clinical Affairs team on a comprehensive data analysis to identify the primary clinical and social drivers that contribute to inequities in maternal outcomes across each health center.

SUSTAINING HIGH QUALITY CARE FOR PATIENTS WITH CHRONIC ILLNESS

Throughout this fiscal year, CDI2 also continued its active collaboration with UC Population Health (UCPH) on three systemwide initiatives:

- CDI2 provides data and analytics to UCPH to help identify and disseminate best practices for management of diabetes care. UCPH team members partner with UC clinical experts to identify interventions that generate improvements across various clinical quality diabetes measurements, such as controlling blood sugar and having timely eye exams.
- CDI2 and UCPH similarly collaborate on hypertension management. The focus of this initiative is controlling blood pressure and ensuring that all patients with hypertension have accurate blood pressure checks. The data also helped UCPH and UC clinical experts to develop new, standardized guidance for the system; another example of how UCPH (with CDI2 data and analytics) partners with local sites to align best practices and improve patient outcomes through systemwide metrics.

CAMPUS HIGHLIGHT – UCSD HEALTH

When patients with hypertension are seen by a UC Health provider, they have their blood pressure (BP) taken. If that first measurement is elevated, best practice is to retake the patient's BP. Taking confirmatory BP measurements when the first measurement is high can provide actionable data to inform clinical decisions. UCSD Health tracks monthly reports from CDI2 to improve patient outcomes – now, 85% of all UCSD Health care locations met or exceeded targets for clinical best practice in supporting patients with hypertension.

"Thanks to your reports promoting best practices, UCSD Health is seeing real progress in blood pressure control. That's a win for improving heart health across our population."

– Parag Agnihotri
Chief Medical Officer of Population Health Services, UCSD Health

- The third initiative includes providing data and metrics toward improving care for patients with cancer. Most recently, CDI2 supported the development of two new metrics and dashboards that help to identify barriers to access for new patients and implement best practices to streamline processes and minimize delays.

CDI2 and UCPH built upon prior work with the Self-Funded Health Plan (SFHP) team to increase utilization of drug alternatives that were lower cost with the same or better efficacy.

These newer drugs are called "prescription biosimilars." As more biosimilars became available to UC Health, CDI2 tracked utilization across health centers. Over the past fiscal year, this initiative has saved UC SFHP over $1.75M. Cost savings achieved through increased utilization of biosimilar drugs helps the SFHP become more financially resilient, and benefits UC employees through increased access to medications for complex or chronic conditions.

Supporting S2VBI's UC Pharmacy Across Initiatives that Improve Patient Outcomes

PHARMACIST ENGAGEMENT IMPROVES CLINICAL OUTCOMES FOR PATIENTS WITH DIABETES

- For the past few years, CDI2 has collaborated with UC Pharmacy's goals to provide cardioprotective care for patients with diabetes.
- This past fiscal year, a new project sought to quantify improvements in cardioprotective care by adding direct engagement with a pharmacist prior to hospital discharge. The data thus far demonstrate improvement in rates of cardioprotective care when a pharmacist is involved in patient education and treatment.

SUPPORTING SYSTEMWIDE PHARMACY IN TREATMENT OF ATOPIC DERMATITIS

- Patients with severe atopic dermatitis or eczema are treated with specialized, high-cost medications. Systemwide pharmacy teams realized a potential for greater success in obtaining prior authorization for the medication, thereby reducing costs and improving patient outcomes, by consistent use of the Patient Oriented Eczema Measure (known as POEM).
- Given this potential, CDI2 collaborated with UC Pharmacy in FY25 to track patient outcomes by POEM score by providing data to obtain baseline rates for POEM utilization. The first step in this initiative was to understand the baseline rates of POEM utilization, specifically by determining the percentage of patients with POEM documentation in the EHR. After establishing this baseline, the initial goal is to monitor POEM documentation across the system, followed by a second goal to increase documentation rate by 10% annually.

UC PHARMACY EXEMPLIFIES BEST PRACTICES FOR PATIENT SAFETY

- CDI2 partnered with the Acute Care Pharmacy team to ensure that patients discharged from the hospital received oral anticoagulation education from a pharmacist, developing a curated dashboard for systemwide tracking. This effort supports UC Health's commitment to the Joint Commission's National Patient Safety Goal on anticoagulation therapy, which aims to reduce patient harm associated with the use of anticoagulant medications.
- The goal is achieved through a combination of standardized practices, patient and resident education, and the use of evidence-based guidelines.

Research Initiatives

CDI2 supports researchers from all six academic health centers, providing real world data to enable research projects across disease types and convening a Systemwide Research Collaborative. Resources available to researchers include the UC Data Discovery Platform, a secure data science environment, as well as a patient cohort discovery tool (coming in 2025).

Growing the UC Data Discovery Platform (UCDDP)

The UC Data Discovery Platform (UCDDP), our secure data science environment, allows researchers to query and analyze a HIPAA limited data set generated from the UCHDW. The EHR data in the UCHDW includes diagnosis, medication and device usage, procedure, test result, and vital sign data on over ten million patients over the past 13 years. This rich data resource does not require IRB approval for use.

Researchers who are interested in using the UCDDP work with our partners at each UC Health site to begin the process of developing their research queries locally. Each project undergoes local review to evaluate the scientific merit of the project and to confirm the value of running the query systemwide. CDI2 provides documentation and support for users of the UCDDP, as well as resources for getting started in the data science environment.

Over the last year, CDI2 has engaged with researchers throughout the UC system to build awareness of this resource. Outreach has included 16 presentations including UCSF's Innovation Grand Rounds with industry partners, the systemwide Clinical Informatics Grand Rounds, and others. This has led to increased interest by clinical, population health, and other researchers who have incorporated the use of the UCDDP into their projects and proposals.

The total number of users working in the UCDDP has increased 113% over the previous 12 months, a nearly 10-fold increase over the prior year's growth.

To support this unprecedented growth in the UCDDP user base, CDI2 also launched monthly virtual office hours in February 2025. These sessions provide a regular opportunity for users to ask questions, troubleshoot issues, and receive guidance directly from CDI2's data warehouse team.

In FY24-25, we deployed our second annual User Experience Survey to gather insights from both new and long-standing users about their experience with the UCDDP. Feedback from this survey will guide improvements to platform usability, training resources, and support services over the coming year. UC Health researchers interested in accessing CDI2's research resources may email **healthdata@ucop.edu**.

Advancing Systemwide Research Collaboration

CDI2 continued to partner with University of California Biomedical, Research, Acceleration, Integration, and Development (UCBRAID) in FY2025 to support an expanded pilot to enable more systemwide clinical trials across UC Health. To date, the pilot has enrolled five studies, with collaborators at five of the academic health centers.

This effort is focused on diversifying clinical trial cohorts, as well as improving efficiency in participant recruitment across the system, enabling systemwide clinical trials recruitment supported by UCHDW data. Participating studies are on track to conclude recruitment by December 2025.

In FY24-25, CDI2 also kicked off a Systemwide Research Collaborative, aimed at growing visibility for CDI2's research offerings while enhancing the breadth and depth of collaboration across UC Health. This collaborative brings together clinical, academic, and data science leaders from the six academic health centers to explore new modes of discovery, infrastructure sharing, and coordinated research support.

Highlighting Publications Utilizing the UCHDW and UCDDP

Since 2018, CDI2 has provided rich data resources to the UC community, leading to 58 publications since 2020. Eleven papers were published in calendar year 2024 with authors from five UC Health campuses. Publications have covered a wide range of clinical practices, risk factors, exposures, and disease endpoints, including cirrhosis, endometriosis, cancer, diabetes, and Alzheimer's disease. Below are two examples from UC Davis authors.

CAMPUS HIGHLIGHT – UC DAVIS HEALTH

UCHDW helps UC researchers set dosing standards for treatment of autoimmune diseases.

Kareem Moussa, MD

In March 2025, Kareem Moussa, MD, along with collaborators from UC Davis, UCSF, UCLA, UCSD, and UCI published a paper examining how well physicians at the University of California adhered to recommended dosing guidelines for hydroxychloroquine, a medication used to treat autoimmune diseases. [Citation #25 in Appendix 4 and **LINK**] The purpose of this study was to improve systemwide adherence to hydroxychloroquine dosing guidelines.

Using data from the UCHDW for over 20,000 patients across the UC Health system, the authors found that 36% of patients are prescribed higher doses than the dosage guidelines that were released in 2020. Excessive dosing can increase the risk of retinal toxicity and irreversible vision loss. Proper dosing is therefore crucial to minimize the risk of toxic retinopathy. The researchers suggest that the introduction of a clinical decision support tool could improve adherence to dosage guidelines.

Using the UCDDP to identify associations between metabolic dysfunctions and Alzheimer's disease.

In August 2024, Rex Liu and collaborators across UC Davis published results from an analysis of patients aged 65+ and their age-, sex-, and race/ethnicity matched controls across six UC Health hospitals, which showed significant associations between a variety of metabolic factors and development of Alzheimer's disease. [Citation #22 in Appendix 4 and **LINK**]

Among various findings, the authors found that association between obesity and Alzheimer's risk differed among racial and ethnic groups, with Asian patients exhibiting greater risk than their White counterparts. They also found that alcohol consumption and non-infectious hepatitis were associated with greater risk of Alzheimer's disease. This work highlights the potential for using machine learning approaches to develop novel risk prediction models.

Data Governance & Health Policy

CDI2 is at the forefront of promoting responsible data stewardship and governance across UC Health, enabling safe and innovative uses of health data. These efforts balance the importance of utilizing health data at scale with appropriate guardrails around safety, reliability, fairness, transparency, privacy, and cybersecurity. CDI2 also works collaboratively to ensure that these principles are at the forefront of state and federal legislative advocacy.

Data Governance

This fiscal year, CDI2 began implementing the recommendations in the President's Systemwide Health Data Governance Task Force Report (**LINK**) released in May 2024. Notably, CDI2 began to roll out the updated UC Health Data Sharing Guidelines included in the Report. The Data Sharing Guidelines establish a standardized and ethical approach to sharing health data with external partners for both the health locations and at the systemwide level. These guidelines were created to support research, healthcare improvement, and innovation, while ensuring patient privacy, data security and public trust are preserved. By formalizing how UC Health evaluates data sharing requests – including legal, ethical, and equity considerations – the Guidelines enable consistent and transparent oversight of collaborations with third parties.

- The guiding principles for all data sharing are to:
- Support UC's mission to create and share knowledge broadly but also responsibly
- Ensure clear public benefit, not just financial gain
- Promote justice and take into consideration health inequities
- Be transparent about data activities
- Ensure responsible protection and management of data

Health Policy

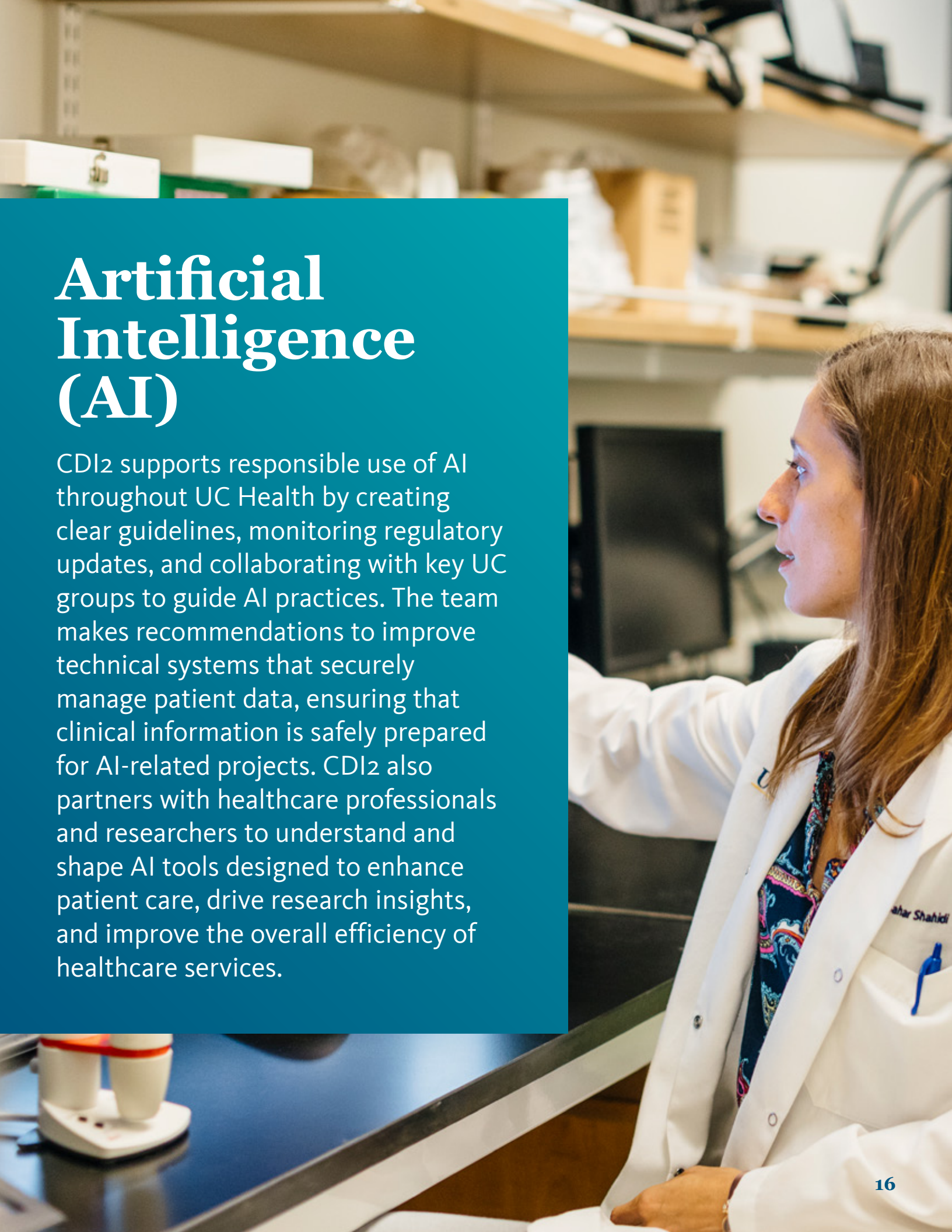
CDI2 continues to coordinate with UC Health Policy and Regulatory Affairs (HPRA), UC State Governmental Relations (SGR) and UC Federal Governmental Relations (FGR) to assess relevant state and federal AI legislative proposals and provide subject matter expertise. CDI2 provides subject matter expertise by reviewing the bills, providing cost estimates where requested, and coordinating meetings with systemwide experts (e.g., legal, compliance, cybersecurity) for discussion.

During the 2024 state legislative session, more than 30 AI-related bills were introduced in California, with UC SGR and HPRA policy teams closely tracking 14. Of those 14, 9 made it to Governor Newsom's desk, where 7 were signed and 2 were vetoed.

Since the beginning of 2025, CDI2 has reviewed 12 state bills, 8 of which are AI-related. On a federal level, CDI2 submitted a comment on behalf of the academic health centers in response to a Request for Information (RFI) from the National Institutes of Health (NIH) on its artificial intelligence (AI) strategy. In its comment (**LINK**), UC Health advocated for funding research that supports real-world evaluation and implementation of AI, the creation of new funding opportunities to encourage industry-academic partnerships, investing in the upskilling and education of the health workforce capable of delivering AI innovation at scale, and encouraging regulatory coordination to enable high-impact, higher-risk AI research.

Artificial Intelligence (AI)

CDI2 supports responsible use of AI throughout UC Health by creating clear guidelines, monitoring regulatory updates, and collaborating with key UC groups to guide AI practices. The team makes recommendations to improve technical systems that securely manage patient data, ensuring that clinical information is safely prepared for AI-related projects. CDI2 also partners with healthcare professionals and researchers to understand and shape AI tools designed to enhance patient care, drive research insights, and improve the overall efficiency of healthcare services.



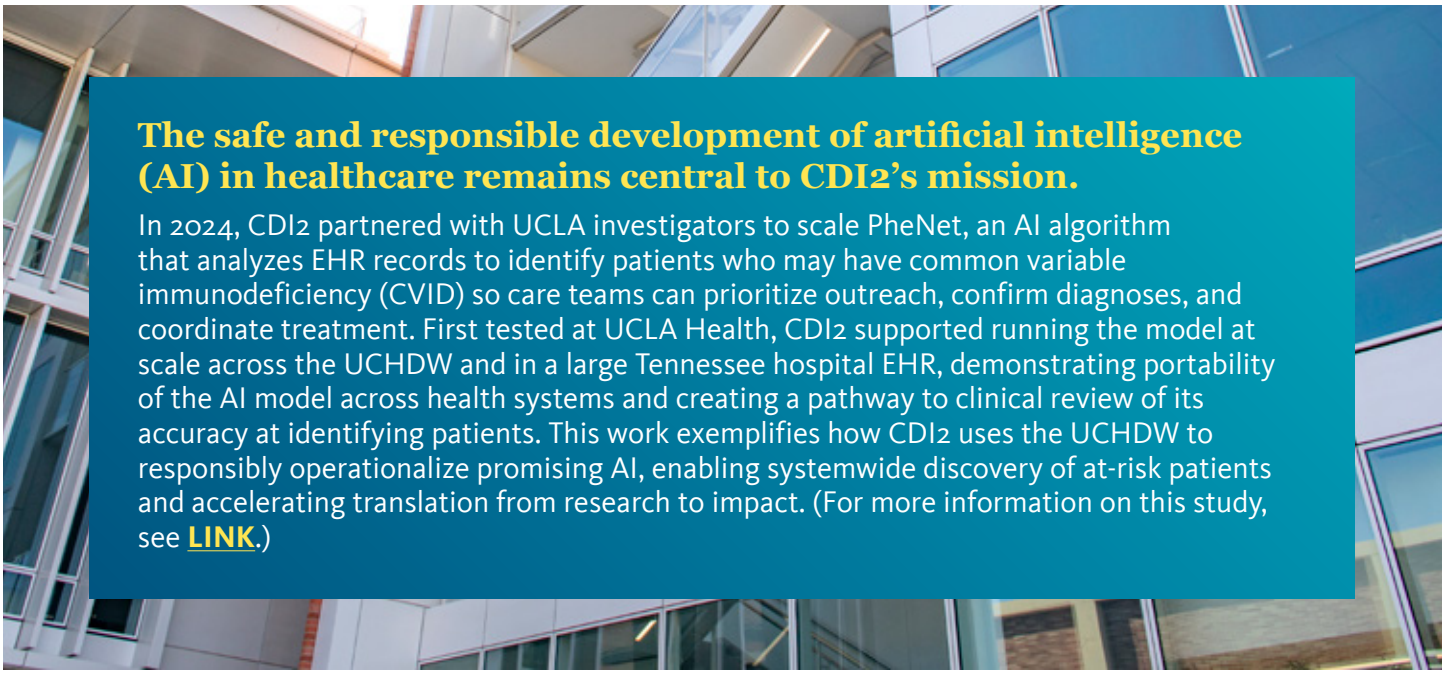
As the use of AI accelerates across UC Health, CDI2 continues to be at the forefront of promoting responsible AI across the health system through providing briefings on the evolving regulatory landscape and developing communications and guidance materials. CDI2 collaborates on this work with stakeholders and systemwide groups including the UC AI Council, UC Health Policy and Regulatory Affairs, UC Legal, and UC ECAS, and the subject matter experts across the academic health centers. CDI2 also supports a growing number of operational and research AI projects, including several predictive models, and is optimizing its technical infrastructure to prepare for growing AI needs.

Over the past fiscal year, the UCHDW team began to optimize its technical environment to help with AI projects utilizing systemwide data. The team accelerated the process of ingesting clinical notes into the environment and deidentifying these notes in accordance with applicable law as well as the highest industry standards for data privacy and security. The team also began to develop AI features – pieces of data that have been transformed into a format suitable for use in machine learning models – to share with users across the system.

Two highlights from FY25 include:

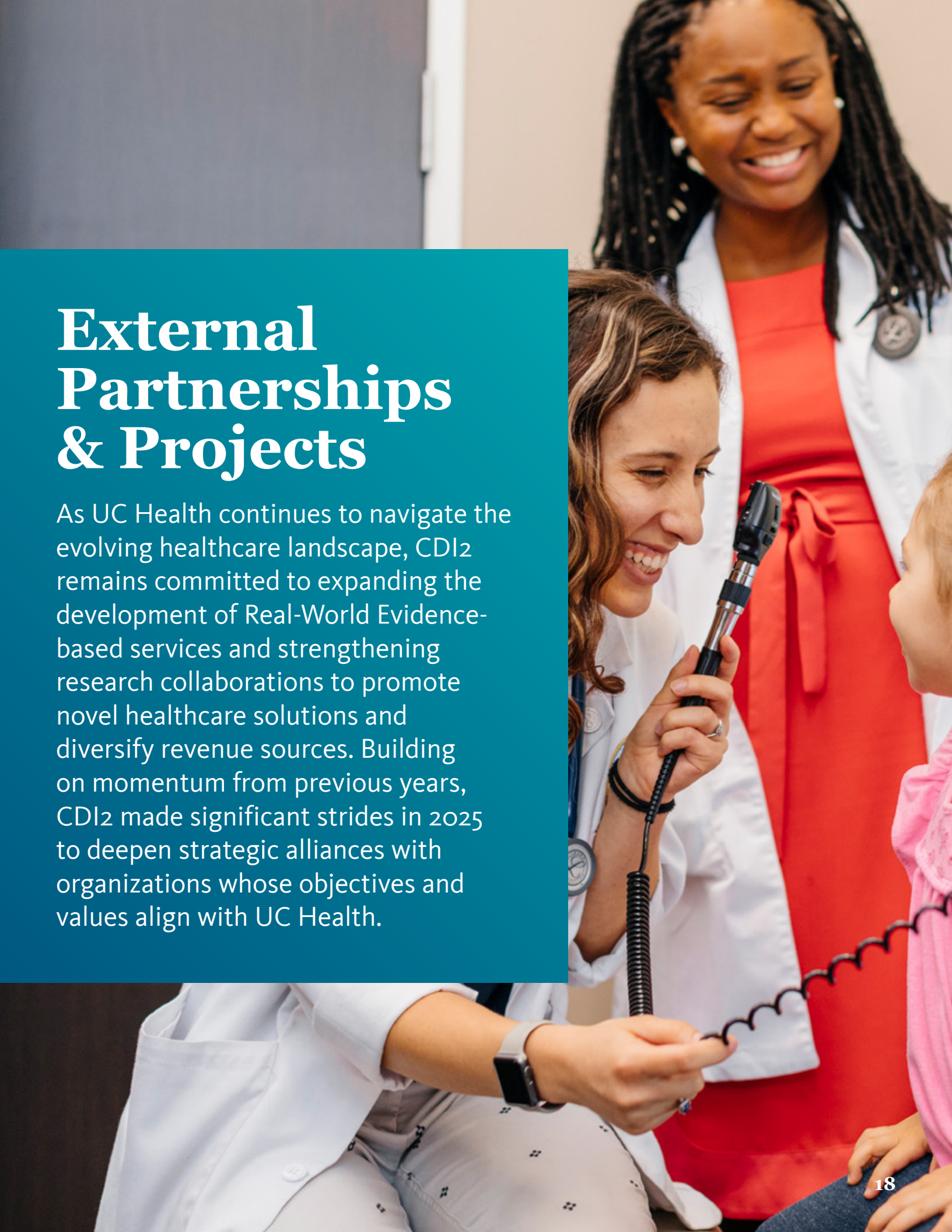
- In July 2024, Dr. Atul Butte was joined by Dr. Christopher Longhurst (Chief Clinical & Innovation Officer, UC San Diego Health) and Dr. Matthew Lungren (Chief Scientific Officer, Microsoft Health and Life Sciences and Clinical Associate Professor UCSF) in presenting to the Public Engagement and Development Committee of the Regents of the University of California. The panelists discussed early uses of AI across UCH, including use of generative AI to provide physicians with draft responses to non-emergency questions and developing machine-learning models to better predict patients' risk of certain cancers and other conditions. The panelists also discussed the importance of developing and implementing AI tools responsibly as well as rigorously evaluating the effectiveness to help determine if they are measurably improving aspects such as patient outcomes, treatment and workflow efficiencies, and cost-effectiveness.
- In collaboration with nursing informatics leaders across UC Health and UC Health Communications, CDI2 helped to develop an article highlighting perspectives from the nursing community on AI. Entitled, "**Writing the new history for health care: UC nurses set a vision for the future of AI in nursing**," this first of several planned publications around how AI innovation at UC Health unfolds includes recent examples from frontline nurses that participated in decision-making around practice changes. According to Donna Wellbaum, MSN, RN, NEA-BC, NI-BC, chief nursing informatics officer at UCLA Health, nurses spend almost 20% of a 12-hour shift documenting patient information in the electronic health record. She states, "Nurses spend a lot of time in the charts. AI helps them put the time back with the patients."

CAMPUS HIGHLIGHT – UCLA



The safe and responsible development of artificial intelligence (AI) in healthcare remains central to CDI2's mission.

In 2024, CDI2 partnered with UCLA investigators to scale PheNet, an AI algorithm that analyzes EHR records to identify patients who may have common variable immunodeficiency (CVID) so care teams can prioritize outreach, confirm diagnoses, and coordinate treatment. First tested at UCLA Health, CDI2 supported running the model at scale across the UCHDW and in a large Tennessee hospital EHR, demonstrating portability of the AI model across health systems and creating a pathway to clinical review of its accuracy at identifying patients. This work exemplifies how CDI2 uses the UCHDW to responsibly operationalize promising AI, enabling systemwide discovery of at-risk patients and accelerating translation from research to impact. (For more information on this study, see **LINK**.)



External Partnerships & Projects

As UC Health continues to navigate the evolving healthcare landscape, CDI2 remains committed to expanding the development of Real-World Evidence-based services and strengthening research collaborations to promote novel healthcare solutions and diversify revenue sources. Building on momentum from previous years, CDI2 made significant strides in 2025 to deepen strategic alliances with organizations whose objectives and values align with UC Health.

CDI2 plays a pivotal role in enabling high-impact industry-sponsored research across UC Health by cultivating strategic partnerships with life sciences and medical technology companies and facilitating research projects for better healthcare outcomes. Our External Partnerships team also leads the way in convening internal and external stakeholders for our annual UC Health CDI2 data conference and the Real-World Evidence Collaborative.

Developing UC Real-World Insights

Last fiscal year, CDI2 laid the foundation for UC Real-World Insights, a new systemwide service designed to deliver curated, aggregate insights derived from the UCHDW to external collaborators. This offering will support evidence generation and informed healthcare decision-making across the life sciences and medical technology sectors, while ensuring the ethical, secure, and responsible use of health data.

After completing a proof-of-concept and incorporating feedback from key strategic partners, CDI2 is now positioned to launch pilot projects with select partners in late 2025. These pilots will test the delivery of insights, operationalize stakeholder collaboration, and inform the broader roadmap for scaling this initiative across therapeutic areas. For more information, please reach out via email at **cdi2@ucop.edu**.

Facilitating Over $3.1M in Sponsored Research Projects for Better Healthcare Outcomes

CDI2's External Partnerships and Projects team proactively identifies areas of alignment between industry interests and UC Health priorities, recruits principal investigators, and provides end-to-end support through proposal development.

These partnerships exemplify CDI2's commitment to creating mutually beneficial opportunities that advance clinical innovation, generate real-world evidence, and reinforce UC Health's leadership in data-driven healthcare research. Since program inception, over $3.1M in total industry-sponsored research has been awarded directly to UC campuses.

CAMPUS HIGHLIGHT – UCI HEALTH AND UCSF HEALTH

CDI2 facilitated two significant industry-sponsored studies.

In FY24-25, Merck awarded $423,000 to support a study on Long COVID (Post-Acute Sequelae of COVID-19, or "PASC") at UC Irvine and UCSF. The research will analyze EHR data to characterize PASC symptoms, develop a Large Language Model-based framework for symptom identification. The findings aim to inform care strategies for Long COVID patients and improve understanding of long-term disease trajectories.

Amgen provided $475,000 to UCSF in FY24-25 to support the development of AI tools that enable more efficient extraction of insights from EHR data for patients with inflammatory bowel disease (IBD). The project seeks to streamline data abstraction and enhance real-world evidence generation, with potential applications in drug development and chronic disease management.

Leading the Way: Innovation Through Data

CDI2 continued to host our annual two-day UC Health CDI2 data conference in April 2025, bringing together experts and stakeholders to explore the impact of healthcare data and innovation. The event, titled "From Insight to Impact: Facilitating Healthcare Excellence," provided a platform for fostering partnerships between UC Health experts, industry leaders, and community stakeholders.

2025 Panel Presentations:

- Driving Innovation and Improving Patient Outcomes: AI's Emerging Role in Healthcare
- Data-Driven Solutions for Patient Engagement and Health Equity
- Systemwide Clinical Trials Recruitment Pilot
- Steering Through Change: Policy Updates in Health Data Management, AI, and Research
- The Analytics Advantage: Driving UC Health's Strategic Goals Forward
- Shaping the Future: Innovation, Advocacy, and Opportunity

This year, the conference also featured six short TED-style talks on various innovation topics, delivered by UC Health colleagues. We thank the staff at The Cove and our UC Irvine colleagues for their support and look forward to future events.

2025 UC Health CDI2 Data Conference

From Insight to Impact: Accelerating Healthcare Excellence

April 24-25, 2025 | UC Irvine, The Cove

> "Getting better every year!"

L-R: Andenet Emiru (CDI2), Eric Anthony (UCSF), Tam Ma (UC Health), Rhodri Dierst-Davies (UCOP)

> "The panel discussions were engaging, and the short Innovation presentations were very effective.

L-R: Karandeep Singh (UCSD), Ryan Copping (Genentech), Vivek Rudrapatna (UCSF), Jenna Weins (University of Michigan)

> **“Thank you for including the patient’s voice.”**

L-R: Ayan Patel (CDI2), Albert Duntugan (UCLA)

> **“This type of engagement is critical to the development of relevant, impactful External Partnerships!”**

Shaping the Future

For CDI2, shaping the future means transforming our unparalleled data resources into trusted, actionable insights that improve care quality, advance health equity, accelerate research, and strengthen our role as a national model for a learning health system. As we work towards UC Health's systemwide goals, our priorities over the next year include strengthening the UC Health Data Warehouse, expanding research capabilities, guiding responsible policy and AI, and building purposeful partnerships.

EXPANDING AND EVOLVING THE UC HEALTH DATA WAREHOUSE

With over 10 million patient records, billions of clinical observations, and growing inclusion of unstructured data such as clinical notes, the UCHDW is one of UC Health's most valuable strategic assets. Having migrated to a modern, cloud-based infrastructure, CDI2 is poised to deliver faster, more comprehensive, and more secure analytics. Our next chapter will focus on developing the technical infrastructure needed to support growing systemwide needs including supporting both operational and research AI at scale.

ADVANCING RESEARCH AND DISCOVERY

We will continue to grow usage of the UC Data Discovery Platform and other research tools that enable investigators across UC Health to tap into systemwide data science resources. By supporting multi-campus studies, expanding the Systemwide Research Collaborative, and implementing new patient cohort discovery capabilities, CDI2 will help shorten the time from question to insight and magnify UC Health's contributions to high-impact, peer-reviewed science.

SHAPING HEALTH POLICY AND RESPONSIBLE AI

CDI2 will remain a trusted advisor on health data policy at the state and federal levels, providing subject matter expertise to lawmakers, convening systemwide experts, and ensuring UC Health's voice is represented in the development of AI and data governance frameworks. Building on our leadership in responsible AI, we will continue to promote transparency, fairness, and equity in AI development, with particular emphasis on patient and community engagement during early design and evaluation stages. CDI2 will work with partners to encourage bias assessment, clear documentation of model intent and limitations, and pathways for patient perspectives to shape how AI tools are conceived and validated.

FORGING PURPOSEFUL PARTNERSHIPS AND DRIVING REVENUE

The UC Real-World Insights (RWI) service, launching its pilot in late 2025, will deliver curated, aggregate-level evidence from the UCHDW to external collaborators, supporting research, innovation, and improved patient care under strict privacy and governance standards. Designed to generate revenue and strengthen UC Health's leadership in real-world evidence, RWI aligns with the UC Health Data Governance Task Force guidelines ensuring the highest levels of data stewardship and incorporates clinician validation throughout.

Conclusion

A VISION OF MEASURABLE IMPACT

At CDI2, our success is measured by real-world change: tangible improvements in healthcare, shorter paths from question to insight, systemwide adoption of transparent and trusted data governance, and partnerships that empower—not overwhelm—patients and their communities. We look forward to continuing this work together with our partners and communities, and we are grateful for the support that makes it possible.

Appendix 1

Oversight Board Membership

COMMITTEE LEADERSHIP

Chair
Tom Andriola, MS
Vice Chancellor, Information, Technology and Data, ***UCI***

CAMPUS APPOINTEES

Davis
Jason Adams, MD, MS
Director, Data and Analytics Strategy

Irvine
Lisa Gibbs, MD
Chief, Division of Geriatric Medicine and Gerontology

Los Angeles
Albert Duntugan, MHA*
Chief Data Officer

Riverside
Naveen Raja, DO, MBA
Chief Medical Officer

San Diego
Amy Sitapati, MD
Chief Medical Information Officer

San Francisco
Sara Murray, MD, MAS
Vice President and Chief Health AI Officer

Office of the President (Interim)
Georgette Lewis, MPH
Deputy to the Chief Clinical Officer, ***UC Health***

AT-LARGE APPOINTEES

CMO/CQO
Chris Longhurst, MD, MS
Chief Medical and Digital Officer, ***UCSD Health***

Research
Elizabeth Boyd, PhD
Director, UC BRAID, ***UCSF***

Non-Health Campus
Josh Stuart, PhD
Professor, Jack Baskin Endowed Chair of BME, ***UCSC***

Ethics
Barbara Koenig, PhD, RN
Professor Emeritus of Medical Anthropology and Bioethics, ***UCSF***

Health Equity and Inclusion Excellence
Medell Briggs-Malonson, MD, MPH, MSHS
Chief of Health Equity and Inclusion Excellence, ***UCLA Health***

Patient Voice
Ysabel Duron
President and Executive Director, ***The Latino Cancer Institute***

Thu Quach, PhD, MPH
President, ***Asian Health Services***

EX-OFFICIO (OFFICE OF THE PRESIDENT)

Healthcare Compliance
Shanda Hunt, JD
Director, Compliance

Healthcare Compliance
Noelle Vidal, JD
Healthcare Compliance & Privacy Officer

UC Legal
Hillary Kalay, JD
Senior Principal Counsel, ***UC Legal***

**Incoming Board Chair*

Appendix 2
CDI2 Team

UC HEALTH TEAM

Cora Han, JD
Chief Health Data Officer

Monte Ratzlaff
Systemwide & UCHDW Chief Information Security Officer

Mike Kilpatrick
UCHDW Chief Technology Officer

Karandeep Singh
CDI2 AI Advisor

Laura HF Barde, PhD
Senior Advisor

Andenet Emiru, MBA
Director, External Partnerships and Projects

Pagan Morris, MPH
Director, Research Initiatives

Emrica Pitolin, MPH, MBA
Project Manager

Ana Maria Deluca
Executive Assistant

Ellen Lenzi
Executive Assistant

UC HEALTH DATA WAREHOUSE TEAM

Lisa Dahm, PhD
Director, Health Data and Analytics

Ayan Patel, MS
Lead Data Scientist

Nadya Balabanova, MBA
Data Scientist

Aiden Barin
Data Scientist

Jennifer Benbow, MS
Bioinformatics Analyst and Research Initiatives Project Manager

Rob Follett
Lead Data Architect

David Gonzalez
Lead Infrastructure Architect

Tim Hayes
Technical Project Manager

Chaya Mohn
Data Scientist

Ray Pablo
Data Scientist

Paulina Paul
Data Engineer

Teju Yardi, MS
Data Scientist

Appendix 3
Campus & Health Partners

TECHNOLOGY LEADERSHIP PARTNERS

John Cook
Interim Chief Information Officer, *UCD Health*

Scott Joslyn
Chief Information Officer, *UCI Health*

Ellen Pollack, MSN, RN-BC
Chief Information Officer, *UCLA Health*

Matthew Gunkel
Chief Information Officer, *UCR Health*

Josh Glandorf, MBA
Chief Information Officer, *UCSD Health*

Joe Bengfort
Chief Information Officer, UCSF Health

TECHNOLOGY GOVERNANCE PARTNERS

Scott Harrison
Chief Technology Officer, UCD Health

Nic Borton
Chief Information Security Officer, UCD Health

Jim Davis
Chief Technology Officer, UCI Health

Gabe Gracia
Chief Information Security Officer, UCI Health

Bill Lazarus
Chief Technology Officer, UCLA Health

Edgar Tijerino
Chief Information Security Officer, UCLA Health

Mike Kennedy
Chief Technology Officer, UCR Health

Dewight Kramer
Chief Information Security Officer, UCR Health

John Torello
Chief Technology Officer, *UCSD Health*

Scott Currie
Chief Information Security Officer, *UCSD Health*

Susan Tincher
Chief Technology Officer, *UCSF Health*

Pat Phelan
Chief Information Security Officer, *UCSF Health*

TECHNOLOGY IMPLEMENTATION PARTNERS

Puneet Gill
Manager IT Health Informatics, *UCD Health*

Supraja Radhakrishnan
ETL Developer, *UCD Health*

Hemanth Tatiparthi
ETL Developer, *UCD Health*

Nora Lewin
Manager, Data Management and Operations, *UCI Health*

Kathy Pickell
Data Engineer, *UCI Health*

Vajra Kasturi
Data Engineer, *UCLA Health*

Ghouse Mohammed
Manager, Data Architecture, *UCLA Health*

Subani Shaik
Data Engineer, *UCLA Health*

Myron Sztonyk
IAM Architect, *UCLA Health*

Hiram Cardoza
Senior ETL Developer, *UCSD Health*

Douglas Macleod
Manager, Data Integration, *UCSD Health*

Evan Phelps
Manager, Research Data Assets, *UCSF Health*

Vijay Ryanker
Data Engineer, *UCSF Health*

HEALTH SYSTEM ANALYTICS PARTNERS

Kent Anderson, MS
Director, IT Health Informatics, *UCD Health*

David Merrill, MS
Director, Enterprise Data and Analytics, *UCI Health*

Yael Berkovich
Director, Enterprise Information Architecture OHIA, *UCLA Health*

Jennifer Holland, MS
Director, Enterprise Reporting, *UCSD Health*

Rick Larsen
Director, Research Informatics, EIA, *UCSF Health*

BIOMEDICAL INFORMATICS RESEARCH PARTNERS

Nick Anderson, PhD
Clinical and Translational Science Institute, *UCD*

Kai Zheng, PhD
Institute for Clinical and Translational Science, *UCI*

Doug Bell, MD, PhD
Clinical and Translational Science Institute, *UCLA*

Mike Hogarth, MD
Clinical and Translational Science Institute, *UCSD*

Oksana Gologorskaya, MS
Clinical and Translational Science Institute, *UCSF*

Appendix 4

Publications

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