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Harnessing AI for Transformative Healthcare:

Proceedings and Strategic Roadmap from AI4Health Industry Day 2026 in Delaware

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Abstract

Artificial intelligence (AI) is reshaping healthcare, offering new capabilities to improve specialty care delivery, reduce administrative burden, enhance operational efficiency, and accelerate biomedical discovery. Yet implementation remains constrained by workforce shortages, fragmented data infrastructure, governance requirements, and the need for responsible deployment aligned with patient-centered outcomes. AI4Health Industry Day 2026 convened 50–60 stakeholders from across Delaware's healthcare & Innovation ecosystem, including ChristianaCare, the Delaware Department of Health and Social Services (DHSS), the University of Delaware, NVIDIA, IBM, and emerging startups,to examine the current state of healthcare AI and identify pathways for scalable impact. This proceeding report synthesizes key themes spanning workforce analytics, robotics-enabled care operations, privacy-preserving machine learning, knowledge graph-driven discovery, and AI-accelerated gene editing. Panel discussions emphasized Delaware's Rural Health Transformation efforts and the importance of aligning innovation with access, cost, and equity priorities. We conclude with a strategic roadmap positioning Delaware as an emerging hub for responsible AI deployment in specialty care and public health.

Introduction: Why AI4Health, Why Delaware, Why Now

Healthcare delivery systems face converging pressures: rising costs, workforce shortages, increasing chronic disease burden, growing complexity in specialty care, and a growing awareness from the public making use of emerging AI technologies. At the same time, advances in artificial intelligence are already changing healthcare in measurable ways. National health expenditures reached $5.3 trillion in 2024 (18% of U.S. GDP),[1] underscoring why productivity and administrative efficiency matter as much as clinical innovation. Early real-world evidence suggests that some AI tools can reduce clinician burden: in a multicenter study of 263 ambulatory clinicians across six health systems, use of an ambient AI scribe was associated with a drop in reported burnout from 51.9% to 38.8% after 30 days, along with improvements in cognitive task load and reduced after-hours documentation time.[2] A randomized trial in routine practice similarly found that an ambient documentation tool reduced time spent writing each note by about 41 seconds per note (vs 18 seconds in controls), with modest improvements in validated burnout measures; importantly, it also surfaced safety and governance realities, including occasional clinically meaningful inaccuracies that require active clinician oversight.[3]

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The inaugural AI4Health Industry Day spearheaded by the Department of Computer and Information Sciences, the University of Delaware on January 31, 2025 responded directly to this inflection point. The event's mission is to convene members from all sectors of the economy (commercial, education, government, healthcare, and innovative startups) to drive AI solutions that address pressing challenges in healthcare; from improving patient outcomes to optimizing delivery systems, by bringing together students, faculty, industry, health system leaders, government stakeholders, and startups across the region's growing innovation ecosystem.

AI4Health Industry Day 2026 marked the second annual convening of this initiative and reflected a significant expansion in scope and participation. Co-chaired by Xi Peng; Weisong Shi; Celia Payen; and Patrick Callahan, the 2026 program broadened engagement beyond academic research to include increased representation from hospitals, global technology companies, state agencies, and healthcare startups. This deliberate expansion signaled a transition from exploratory dialogue toward implementation-focused collaboration, reinforcing the Delaware region's position as a nimble and highly collaborative environment for responsible healthcare AI deployment.

A consistent theme throughout the 2026 conference was that the promise of AI will not be realized through technology alone. Success depends on responsible implementation: trustworthy governance, interoperable data infrastructure, workflow integration, and alignment with human-centered outcomes such as clinician well-being, equity, and measurable improvements in patient care. It will also require cross-industrial advancements that focus on a growingly complex care-delivery model.

The industry-academic collaboration at the AI4Health conference was strategically vital because it bridged the critical gap between cutting-edge research and real-world healthcare implementation. While the University of Delaware's faculty brought deep technical expertise in areas like federated learning, neuroimaging AI, and CRISPR applications, industry partners like NVIDIA provided the computational platforms and deployment experience necessary to scale these innovations. By bringing together researchers developing solutions for Delaware's fragmented healthcare data systems with companies possessing the infrastructure to deploy these solutions at scale, the conference established a collaborative framework essential for transforming Delaware's expensive healthcare market into a model for AI-driven cost reduction and improved patient outcomes.

Event Overview

AI4Health Industry Day 2026 was held at the University of Delaware STAR Campus and convened 50–60 participants representing:

- Primary health care delivery system leadership and innovators
- State government leadership and stakeholders
- University leadership, faculty, researchers, and students along with regional academic partners
- Industry partners, including NVIDIA and IBM
- Regional startups, innovation leaders, and investors

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The event featured Secretary Young from Delaware's Department of Health as an opening speaker, demonstrating state-level commitment to AI healthcare solutions. This government backing will be crucial for implementing AI initiatives across Delaware's healthcare system serving 250,000 Medicaid recipients The program featured keynote perspectives, technical and clinical case studies, and a concluding panel discussion focused on implementation realities and Delaware’s opportunity to scale responsible AI innovation, including through rural health transformation initiatives (figure 1).

Figure 1. AI4Health Industry Day 2026

Proceedings Highlights: Speaker Contributions

Welcome Remarks — Miguel Garcia-Diaz (University of Delaware)

In his opening remarks, Dr. Miguel Garcia-Diaz welcomed attendees to the second annual AI4Health Industry Day and emphasized Delaware’s growing momentum at the intersection of artificial intelligence and healthcare innovation. He highlighted the event’s purpose of deepening collaboration between academia, industry, and healthcare systems to translate cutting-edge AI research into practical impact. He described AI as a strategic priority at the University of Delaware, noting major investments such as the First State AI Institute and the Data Science Institute, which support interdisciplinary research and real-world applications. He outlined AI’s transformative potential across biomedical discovery, clinical care, population health, and

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healthcare efficiency, while stressing that ethical considerations, such as equity, privacy, and trust must remain central. He concluded by recognizing the AI4Health organizing team and industry partners, encouraging attendees to build lasting partnerships that advance healthcare outcomes in Delaware and beyond.

Opening Address — Secretary Christen Linke Young (DHSS)

Secretary Christen Linke Young (Delaware Department of Health and Social Services) opened AI4Health Industry Day 2026 by framing innovation as central to the state's role in supporting complex and chronically ill populations through both healthcare and wraparound social services. She highlighted emerging opportunities for AI-enabled remote monitoring, population health tools, and telehealth; particularly in behavioral health; as mechanisms to improve access and care delivery statewide. Secretary Young emphasized Delaware's recent award of a major Rural Health Transformation Program grant, describing it as a catalyst to invest in technology deployment and innovation in underserved communities, especially in Sussex County. She also delivered a clear policy message that AI adoption must be evaluated through the lens of affordability and productivity: while early healthcare AI applications have often increased costs through higher coding intensity and billing, Delaware's priority is to create market conditions that steer innovation toward value-based care, total cost accountability, and structurally lower healthcare costs. This innovation imperative carries significant operational weight, as Delaware's Department of Health and Social Services currently serves 250,000 Medicaid recipients and 120,000 SNAP participants. She noted that new federal requirements, including six-month Medicaid eligibility verification, have created massive administrative burdens where 25% of beneficiaries lose coverage due to paperwork failures despite 95% meeting eligibility criteria. She concluded by positioning AI as a strategic enabler rather than a silver bullet, underscoring statewide initiatives including an AI regulatory "sandbox" and workforce development partnerships to ensure Delaware is prepared to deploy AI responsibly and effectively.

Industry Keynote — Jesse Tetreault (NVIDIA)

Jesse Tetreault delivered an industry keynote highlighting NVIDIA's strategic role in enabling the next generation of healthcare AI through accelerated computing infrastructure and full-stack platforms spanning hardware, software, networking, and large-scale AI systems. He noted that NVIDIA's healthcare efforts extend beyond GPUs, supporting end-to-end environments for medical imaging, genomics, robotics, and clinical AI deployment across the care continuum.

Tetreault framed the evolution of AI in distinct waves: from early "perception AI" focused on discriminative tasks such as image recognition, to today's generative AI paradigm that produces outputs token-by-token "word by word, amino acid by amino acid." He described the emergence of "agentic AI," characterized by reasoning and tool use to support more complex clinical workflows beyond simple autoregressive generation.

He connected these advances directly to healthcare delivery impact, arguing that automating routine tasks can allow radiologists, nurses, and care teams to refocus on diagnosing disease and delivering patient-centered care rather than spending disproportionate time on documentation and repetitive administrative work. Early examples included clinical documentation and virtual nursing support as part of a broader shift toward AI-enabled care coordination. He provided concrete examples of companies already deploying these technologies, including Ambience for clinical transcription and Hippocratic for virtual nursing support.

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Tetreault also highlighted the convergence of generative AI with digital biology and the rise of "physical AI" in healthcare systems. He cited breakthroughs such as AlphaFold and described an emerging "AI scientist" loop in drug discovery, where computational dry labs integrate with automated wet labs and robotics to accelerate hypothesis generation and experimentation. At the system level, he pointed to digital twins of operating rooms, automated pharmacy compounding, patient-facing robotics, and AI-guided medical devices as examples of how engineered clinical environments may improve consistency, early detection, and operational efficiency.

Collectively, the keynote positioned healthcare as a central domain for AI investment and underscored that scalable impact will require robust infrastructure, responsible governance, and integrated clinical systems, not just standalone models.

Session 1: AI in Clinical Care & Primary Health

Session Chair: Xi Peng (University of Delaware)

Session 1 highlighted how AI is already being applied to near-term healthcare delivery challenges, particularly workforce sustainability, clinical workflow support, and hospital operations. Presentations underscored Delaware's urgent staffing constraints and the potential for AI-driven workforce analytics to improve forecasting and reduce burnout. Speakers also emphasized the growing role of AI-enabled computational modeling for precision medicine, as well as robotics and automation, such as collaborative delivery robots, to reduce non-clinical workload and allow care teams to focus more directly on patient-centered care.

Speakers included: Tim Gibbs (Delaware Health Force), Ulf Schiller (University of Delaware), and Susan Smith (ChristianaCare).

Session 2: AI for Specialty Care

Session Chair: Celia Payen (AI4Health Industry Day 2026 Conference Chair)

Session 2 focused on specialty care transformation and the practical barriers to scaling AI beyond pilots. Speakers described AI as an enabling layer for proactive population health dashboards, quality forecasting, and long-term integration of genomic and clinical data. A recurring theme was that structured data readiness remains one of the most significant bottlenecks to adoption, alongside workflow integration, evaluation, and trust. Academic perspectives further highlighted the value of knowledge graphs and retrieval-augmented AI to connect biomedical evidence with clinical decision-making and health risk prediction.

Speakers included: Thomas Schwaab (ChristianaCare), Connor Callahan (Acellus Health), and Cathy Wu (University of Delaware).

Session 3: Data, Imaging & Gene Editing in Health

Session Chair: Ulf Schiller (University of Delaware)

Session 3 explored the data foundations required for responsible healthcare AI, spanning neuroimaging analytics, privacy-preserving machine learning, and AI-enabled gene editing. Presentations emphasized that clinical AI translation requires both technical performance and interpretability, particularly in sensitive domains such as neurological risk profiling. Speakers

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also addressed federated learning, differential privacy, and machine unlearning as essential tools to enable innovation while protecting patient data. The session concluded with advances in AI-supported CRISPR therapeutic development, reinforcing Delaware's leadership at the convergence of AI and next-generation genomic medicine.

Speakers included: Austin Brockmeier (University of Delaware), Parul Yadav (Robert Morris University), and Kelly Banas (ChristianaCare Gene Editing Institute).

Case Studies

Health System Leadership Perspective — Omar Khan, MD & Robert Asante (ChristianaCare)

Omar Khan, MD, Enterprise Chief Scientific Officer at ChristianaCare and President and CEO of the Delaware Health Sciences Alliance, delivered a leadership-level keynote focused on the fundamental "why" of AI in healthcare. He emphasized that AI must be evaluated not as an end, but as a strategic tool to address the deeper structural challenges facing the U.S. healthcare system: excessive cost, inconsistent outcomes, and inequitable access. Drawing on international comparisons from the Commonwealth Fund's Mirror, Mirror report, Dr. Khan underscored that the United States remains an outlier; spending the most per capita while achieving among the lowest performance across peer nations; and argued that meaningful innovation must be aligned with affordability and population health impact.

Dr. Khan framed Delaware as uniquely positioned to translate responsible AI innovation into real-world healthcare delivery, citing ChristianaCare's scale, community-based mission, and academic and research partnerships create an unusually strong environment for implementation. He further framed Delaware's advantage as its collaborative infrastructure through the Delaware Health Sciences Alliance, enabling cross-sector problem solving across health systems, academia, and public health organizations. Importantly, Dr. Khan cautioned that while AI-enabled tools such as clinical documentation and imaging support are promising, many of healthcare's most pressing challenges are not purely technical.

Collectively, Dr. Khan's remarks framed Delaware's opportunity not merely as adopting new AI tools, but as shaping the governance, partnerships, and delivery-system conditions required for AI to improve outcomes, equity, and affordability at scale.

Industry Perspective — Carlos Hernandez (IBM)

Carlos Hernandez contributed an industry view on AI adoption, emphasizing trust, governance, and the practical realities of implementing AI systems in complex healthcare environments. His remarks reinforced the importance of secure architecture, transparency, and responsible deployment frameworks.

Panel Discussion: Implementation Realities and Rural Health Transformation

A concluding panel discussion, moderated by Tom Pellathy (Senior Partner, McKinsey & Company), brought together leaders from healthcare policy, innovation investment, and value-based care implementation: Neil Hochstein (Delaware Health Care Commission), Maureen Rinkunas (Rock Health), Paul Meyer (SmartPBC).

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Panelists emphasized alignment with measurable system needs. Moderator questions then shifted toward rural healthcare transformation, referencing substantial federal funding streams and exploring how technology; including telehealth expansion, AI-enabled care navigation, and operational analytics; can improve outcomes while lowering cost of care in underserved communities.

Panelists also addressed barriers to capturing AI's promise, highlighting the need for trustworthy governance, interoperable data infrastructure, workflow-integrated deployment, and sustainable reimbursement alignment.

The panel concluded with a rapid closing prompt "AI in healthcare: what are the 2–3 words you want to leave the audience with?" reinforcing shared priorities around trust, equity, implementation, and patient-centered value.

Strategic Roadmap: The Delaware Region's Opportunity as a Responsible AI Hub

AI4Health Industry Day 2026 surfaced a clear roadmap for the region to position itself as a national leader in responsible AI deployment across specialty care and public health. The discussions converged around five structural priorities necessary for Delaware to move from pilot innovation to durable system transformation:

1. Strengthened Data Infrastructure and Interoperability: AI adoption is constrained by fragmented clinical data. Delaware can lead by strengthening interoperable pipelines, structured data readiness, and shared evaluation frameworks.
2. Prioritize Workforce-Sustaining AI Applications: Early wins will come from AI that reduces burnout, optimizes staffing, and improves workflow efficiency.
3. Scale Operational Automation with Demonstrable ROI: Robotics and logistics automation provide measurable impact today and can serve as scalable models for other institutions.
4. Build Trust Through Privacy-Preserving and Ethical Frameworks: Federated learning, differential privacy, and machine unlearning approaches will be essential for regulatory compliance and public trust.
5. Invest in Talent, education, and Cross-Sector Collaborations: The Delaware region's size and connectivity are strategic assets. Expanding AI integration into medical and health professional education, creating internship and experiential learning pipelines, and sustaining AI4Health as an annual anchor convening will ensure a durable workforce and accelerate translational partnerships.

Conclusion: From Proceedings to Action

AI4Health Industry Day 2026 demonstrated that Delaware is uniquely positioned to lead in responsible, human-centered healthcare AI deployment. By convening diverse stakeholders; from NVIDIA to ChristianaCare, from UD researchers to startups and state leaders; the event highlighted both the transformative promise of AI and the practical requirements for implementation. A recurring theme was that durable impact will depend on strong industry–

academia partnerships that translate research into practice, align technical innovation with clinical needs, and create clear pathways for adoption within real healthcare systems.

The path forward is clear: invest in infrastructure, prioritize workforce-sustaining applications, scale proven operational successes, embed governance and trust, and train the next generation of clinicians and innovators. The organizers emphasized the importance of expanding experiential learning opportunities, such as internships, applied research collaborations, and clinical-industry placements, to ensure students and trainees are prepared to contribute meaningfully to healthcare AI development and deployment. AI4Health will continue to serve Delaware's anchor platform for responsible healthcare AI collaboration.

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