U.S. Department of Health and Human Services

Artificial Intelligence (AI) Strategy

January 2021

Table of Contents

1. HHS Mission & AI Ambition

The Department of Health and Human Services (HHS) serves to enhance the health and well-being of all Americans, by providing for effective health and human services and by fostering sound, sustained scientific advances in medicine, public health, and social services. This mission, supported by and connected to the missions of its partners, including state, local, tribal and territorial (SLTT) governments, requires HHS to continue to align Department efforts and priorities to address the evolving health and human services needs of the Nation.

HHS plays a variety of critical roles within this shared mission, serving as, for example, a regulator of the health industry, purchaser of healthcare, catalyst for innovation in the delivery of health and human services, investor of grant and research funding, and convener of common interests and priorities for ensuring the health and wellbeing well-being for all Americans. As the Department builds upon its current capabilities and adapts to a changing environment and emerging technology, HHS recognizes that Artificial Intelligence (AI) will be a critical enabler of its mission in the future. An enterprise AI strategy will provide direction and guidance in achieving the Department's AI ambition:

> *Together with its partners in academia, industry and government, HHS will leverage AI to solve previously unsolvable problems by **continuing to lead advances in the health and wellbeing** of the American people, **responding to the use of AI** across the health and human services ecosystem, and **scaling trustworthy AI adoption** across the Department.*

To achieve HHS's ambition, this enterprise AI strategy will set forth an approach and focus areas intended to encourage and enable Department-wide familiarity, comfort, and fluency with AI technology and its potential (AI adoption), the application of best practices and lessons learned from piloting and implementing AI capabilities to additional domains and use cases across HHS (AI scaling), and increased speed at which HHS adopts and scales AI (AI acceleration).

AI refers to the theory and development of computer systems able to perform tasks normally requiring human intelligence, in order to deliver solutions that can automate routine tasks, draw data-based insights, or augment human activities. HHS has already made advances in the use of AI, for example, the Food and Drug Administration (FDA) has been developing a regulatory framework for AI/Machine Learning (ML)-driven software modifications to provide appropriate safety and effectiveness guidelines, and the National Institutes of Health (NIH) has collaborated and invested in AI-based projects to discover health solutions across research and medical settings, including analysis of biomedical imaging to diagnose diseases such as COVID-19. HHS' efforts to date demonstrate its desire and commitment to fully realize the benefits of AI. Given the immense potential for AI to improve health and human services, HHS will leverage AI capabilities to solve complex mission challenges and generate AI-enabled insights to inform efficient programmatic and business decisions, while removing barriers to AI innovation.

The strategy of the Department is aligned with the commitment of the Federal Government to "promote the use of trustworthy AI" (Executive Order 13960) and to "maintain American leadership in AI" (Executive Order 13859) in both its own Departmental activities and the

broader health and human services ecosystem.

2. Strategic Approach

2.1 Leading Health and Human Services AI Innovation

HHS will prioritize the application and development of AI across common enterprise mission areas in which the Department serves as a lead in health and human services innovation. HHS Divisions will continue to lead in identifying opportunities for mission-driven AI solutions, mitigating risks appropriately, against a shared framework of federal and Departmental guidance. Key HHS and Division missions include:

Regulating and overseeing the use of AI in the health industry
HHS' regulatory responsibility spans all aspects of healthcare including standards for healthcare delivery, payments, medical device software, medical products and food, and privacy to ensure compliance, safety, and effectiveness. AI can be leveraged to reduce regulatory burdens and streamline processes that accelerate advancements in the health and wellbeing of Americans. To harness these benefits, HHS will continue to develop standards that inform policy and guidance for safe and transparent AI use and encourage agile and adaptable innovation.

Funding programs, grants, and research that leverage AI-based solutions to deliver outcomes
As the largest grant-making agency in the federal government, HHS evaluates and oversees grants supporting thousands of projects that invest in research and deliver services in support of its mission. As a steward of federal funds, HHS will encourage grant recipients to consider AI's utility and prioritize and enable programs, grants, and research that use AI in trustworthy ways in order to more efficiently or effectively realize mission impact. Specifically, these efforts include, but are not limited to, advancing biomedicine through AI-enabled insights into large datasets, predictive analytics in public health surveillance and responses, and advancing the use of cognitive technologies to identify new approaches to health and behavioral conditions with complex multifactorial causality. HHS will also deploy AI in the grantmaking process itself, for example, to facilitate risk-based review of grants, in order to optimize the allocation of resources and to reduce (detect, prevent, mitigate) opportunities for waste, fraud, and abuse of federal funds.

2.2 Partnering and Responding to AI-Driven Approaches within the Health Ecosystem

HHS will prioritize the application and development of AI across common enterprise mission areas that enable the Department to respond to the dynamic, shared needs of various partners in health and human services innovation, including:

Collaborating with internal partners, external partners, including academia, the private sector, and SLTT governments, to enhance programs and services through the potential of AI
HHS collaborates across Divisions and with partners in private industry, academia, and various SLTT governments to advance common interests across shared missions in administering essential human services and health programs. The Department will engage with these partners

to identify opportunities for AI applications that advance health and human services, including streamlining processes that span the Department and its partners, reducing costly or inefficient resources allocated to low-value, repetitive tasks, and providing enhanced experiences and services for program beneficiaries and the American public. The Department will also engage with partners to prioritize needs and opportunities for AI advancements that enable better outcomes in research, improve clinical practice, public health and safety, social services, disease prevention, and wellness.

Identifying gaps and unmet needs in health and scientific areas that would benefit from government involvement and AI application
HHS continually strives to identify and pursue opportunities utilizing individual and population health data to improve the public health of Americans. This vast knowledge and data pave the way for AI-based solutions to better understand trends, outcomes, and opportunities across the health and human services ecosystem. HHS, at the enterprise level, will position itself to facilitate public-private partnerships (PPP), including those that may be implemented at the HHS Division level. It is anticipated that these partnerships will be one among several approaches that can link AI technology with the support necessary for success: (1) external and governmental expertise engaged in mutual dialogue, (2) external and governmental datasets, models, and algorithms appropriately shared, interlinked, and leveraged for insight, (3) policy support and risk-based oversight tied to the E.O. 13960 principles for trustworthy AI, and (4) well-defined use cases tied to the advancement of health and welfare, with clear criteria for success, interoperability, and reuse.

3. Execution and Governance

3.1 AI Council & AI Community of Practice

To effectively advance the AI ambition outlined in this strategy, the HHS AI Council will be established to support AI governance, strategy execution, and development of strategic AI priorities across the enterprise. The AI Council has complementary objectives to:

I.   Communicate and champion the Department's AI vision and ambition
II.   Execute and govern the implementation of the enterprise AI strategy and key strategic priorities to scale AI across the Department

In support of these objectives, the HHS AI Council will:

Set and Execute Priorities. As the champion of the Department AI Strategy, the HHS AI Council is responsible for translating strategic objectives to identify and refine enterprise AI priorities, as well as oversee the execution of the Enterprise AI Strategy. The AI Council will communicate Department AI priorities to enable Operating and Staff Divisions to scale AI adoption in key mission areas. To ensure progress in AI priorities, the Council will develop and leverage performance plans, implementation timelines, and key performance indicators (KPIs) to drive accountability. The AI Council will report annually on this progress and communicate a

developed report to the Secretary and the HHS Management Council.

Cultivate Partnerships. The AI Council will convene AI interests across the Department and the health and human services ecosystem to advance and better outcomes in healthcare, research, and SLTT government missions. The AI Council will identify and foster relationships with public and private entities aligned to priority AI initiatives, as well as promote collaboration across partnerships to develop AI innovations.

Provide Governance Support. The AI Council will align HHS' AI governance approach and implementation planning across strategic objectives including the White House and other federal AI guidance. The AI Council will collaborate with existing Department governance forums, as well as other federal government oversight offices, to advance the Department's AI ambition in accordance with the objectives of the American AI Initiative.

Sponsor a Community of Practice. The AI Council will establish and support a Community of Practice (CoP) comprised of AI practitioners – such as data scientists, machine learning experts, mathematicians, system developers, computer programmers, solution architects, and other technologists, as well as the health scientists and program leaders who employ AI within their projects and organizations – at all employee levels across Divisions. While the AI Council is responsible for translating and identifying Department AI priorities, the AI CoP will align Department priorities to the efforts of AI practitioners across Divisions to support scaling of AI pilots and use cases. The AI Council, recognizing the importance of dedicated resources, will identify and provide required resources to ensure effective CoP support for enterprise-wide AI adoption.

The CoP will foster enterprise-wide AI adoption by sharing lessons learned, identifying AI opportunities, providing peer recommendations for scaling AI use cases, and supporting shared access to AI tools, resources, innovation labs, and best practices. Members of the Community of Practice may elect to support Work Groups, established by the AI Council, to activate and drive priority AI initiatives across the Department.

3.2 Enabling Focus Areas

The AI Council will identify and support priority activities within key focus areas that will accelerate AI adoption and scaling across HHS divisions, such as developing an AI use case inventory to catalogue active and planned AI use cases, fostering new public and private partnerships to drive AI innovation, and establishing best practices and recommendations for trustworthy and ethical AI use to adhere to federal and ethical guidelines, as well as federal civil rights laws, including conscience and religious liberty provisions.

To enable Divisions to apply, advance, and invest in trustworthy AI solutions across key mission areas, the AI Council will invest in and align enterprise-level support to four (4) key focus areas:

Develop an AI-ready Workforce and Strengthen AI Culture. Leveraging AI to solve previously unsolvable problems requires domain expertise, as well as a degree of AI fluency, to identify

relevant AI technologies and techniques that can address a given problem set or process. It also requires a workforce that is aware of, and comfortable with, the potential of AI and how it is being used by its organization. HHS will (1) cultivate AI fluency and skillsets to enhance scientific expertise and accelerate the Department's ability to develop innovative solutions across health and human services, (2) support a culture of rigor, collaboration and innovation to ensure successful scaling of AI solutions by communicating Department AI priorities and projects and promoting AI awareness, and (3) increase adoption by focusing on broad, Department-wide awareness of the potential of AI, provide regular communications that inform employees of how AI is being used, and bring visibility to available AI trainings and workshops that enable practitioners to more readily learn about AI and apply those learnings to their domain of expertise, creating an opportunity for all HHS employees to play a role in identifying relevant use cases and potential applications.
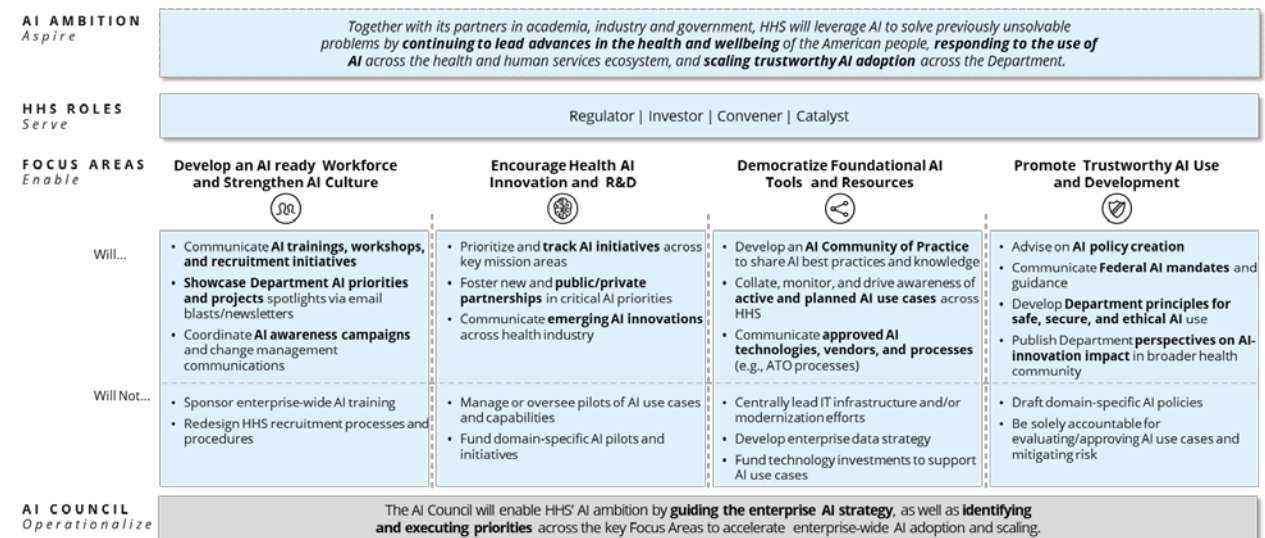
Encourage Health AI Innovation and Research & Development (R&D). Advancing health and human services outcomes and research with AI will require continuous convening of missions and unmet needs across academia, private sector, and SLTT governments. The Department will foster new partnerships to identify critical AI priorities and emerging AI innovations across health and human services. The Department will communicate these shared priorities with Divisions to inform, accelerate, and guide research grant investments, and ultimately advance shared health and human services mission outcomes. The Department will also track internal AI initiatives and prioritize AI applications that enable overall advancements in the health and well-being of Americans.

Democratize Foundational AI Tools and Resources. Readily accessible tools, data assets, resources, and best practices will be critical to minimizing duplicative AI efforts, increasing reproducibility, and ensuring successful enterprise-wide AI adoption. To accelerate scaling of cross-Division AI use cases, the enterprise will promote access to AI resources and tools, as well as drive awareness of current and planned AI use cases across HHS. The Department will leverage the established AI Community of Practice to further develop a common understanding of AI, share AI expertise across Divisions, and communicate and promote effective AI technologies, vendors, and processes.

Promote Ethical, Trustworthy AI Use and Development. Inspiring trust and confidence in AI use, internally and across the health and human services ecosystem, will be of paramount importance to successful AI adoption. The Department will translate federal directives outlined in Executive Order 13960 to support Divisions in deploying reliable, explainable, non-biased, and secure AI systems that respect citizens' privacy and data security. The enterprise will support Divisions in developing policies that ensure transparency and accountability in AI use by communicating Department-specific principles for effective, equitable, safe, secure, and ethical AI and data used to create and operate AI.. The Department will also promote and support the application of existing cybersecurity frameworks to AI use cases across Divisions. The Department will also promote the evaluation of applied AI for accuracy, effectiveness, and health equity.

Successfully accelerating AI adoption will require a coordinated effort across the Divisions. The Department will continue to enable Operating and Staff Divisions to manage and oversee critical AI activities within their respective domains, such as implementing AI pilots and initiatives, developing domain-specific policies and regulations, evaluating AI use cases and mitigating risk, and furthering an AI-ready workforce and collaborative culture.

Figure 3.2: HHS Enterprise AI Strategy Summary

AI AMBITION *Aspire*	Together with its partners in academia, industry and government, HHS will leverage AI to solve previously unsolvable problems by **continuing to lead advances in the health and wellbeing** of the American people, **responding to the use of AI** across the health and human services ecosystem, and **scaling trustworthy AI adoption** across the Department.			
HHS ROLES *Serve*	Regulator	Investor	Convener	Catalyst			
FOCUS AREAS *Enable*	Develop an AI ready Workforce and Strengthen AI Culture	Encourage Health AI Innovation and R&D	Democratize Foundational AI Tools and Resources	Promote Trustworthy AI Use and Development
Will...	• Communicate **AI trainings, workshops, and recruitment initiatives** • **Showcase Department AI priorities and projects** spotlights via email blasts/newsletters • Coordinate **AI awareness campaigns** and change management communications	• Prioritize and **track AI initiatives** across key mission areas • Foster new and **public/private partnerships** in critical AI priorities • Communicate **emerging AI innovations** across health industry	• Develop an **AI Community of Practice** to share AI best practices and knowledge • Collate, monitor, and drive awareness of **active and planned AI use cases** across HHS • Communicate **approved AI technologies, vendors, and processes** (e.g., ATO processes)	• Advise on **AI policy creation** • Communicate **Federal AI mandates** and guidance • Develop **Department principles for safe, secure, and ethical AI use** • Publish Department **perspectives on AI-innovation impact** in broader health community
Will Not...	• Sponsor enterprise-wide AI training • Redesign HHS recruitment processes and procedures	• Manage or oversee pilots of AI use cases and capabilities • Fund domain-specific AI pilots and initiatives	• Centrally lead IT infrastructure and/or modernization efforts • Develop enterprise data strategy • Fund technology investments to support AI use cases	• Draft domain-specific AI policies • Be solely accountable for evaluating/approving AI use cases and mitigating risk
AI COUNCIL *Operationalize*	The AI Council will enable HHS' AI ambition by **guiding the enterprise AI strategy**, as well as **identifying and executing priorities** across the key Focus Areas to accelerate enterprise-wide AI adoption and scaling.			

4. Conclusion

HHS must continue its leadership at the vanguard of health and human services innovation to meet the dynamic needs of the American people. Trustworthy, ethical, and intentional use of AI technologies will accelerate HHS' ability to meet these evolving needs as both a leader and responsive partner in innovations across health and human services. AI will be critical to the Department in achieving its mission and vision, as well as positioning HHS to address the health and human services *challenges of today and tomorrow*.

Ultimately, this strategy is the first step towards transforming HHS into an AI fueled enterprise. This strategy lays the foundation upon which the AI Council can use to drive change across the Department by encouraging the application of AI to promote advances in the sciences, public health, and social services—improving the quality of life for all Americans.