



U.S. Department of Health and Human Services

Information Technology Strategic Plan

FY 2021 - 2023

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MESSAGE FROM THE CHIEF INFORMATION OFFICER



The year 2020 was nothing short of extraordinary as the Nation began responding to an unforeseen public health emergency. The COVID-19 pandemic has disrupted traditional information technology (IT) operating environments, accelerated the adoption of emerging technology, and demonstrated the importance of coordination across the Department to establish a measured response. I am honored to work alongside the dedicated and highly skilled staff of the United States (U.S.) Department of Health and Human Services (HHS) and am immensely proud of what we have accomplished together.

HHS has shifted its strategic focus to confront the COVID-19 pandemic by revamping its technology and data infrastructure to support the Nation's response while seamlessly transitioning over 95% of the Department's workforce to remote work with minimal disruption to mission-critical functions. Further, the Department successfully defended its assets against significant cybersecurity attacks, while achieving more than \$700 million in IT cost savings across the enterprise. The capabilities we developed over the past three years enabled us to be resilient during this monumental transition and resulted in a stronger, faster, and more innovative HHS. While I could not be prouder of these achievements, I recognize the work that lies ahead.

The HHS IT Strategic Plan for Fiscal Years (FY) 2021-2023 draws from lessons learned over the past several years, informed by mission needs, emerging technology, and workforce trends. Developed in collaboration with the HHS Operating Division (OpDiv) IT community and in coordination with the Office of the Chief Information Officer (OCIO), the **HHS IT Strategic Plan FY 2021-2023 represents the Department's future ambitions to deliver its core functions with greater agility, security, and effectiveness amidst an evolving public health landscape.** The HHS OCIO will release additional guidance on tactical next steps and the implementation of this strategy.

Like our response to the COVID-19 pandemic, this strategic plan demonstrates the potential of our strength when we work together. I am committed to achieving the vision laid out in the HHS IT Strategic Plan FY 2021-2023 and look forward to collaborating with OpDivs, our customers, and partners to ensure that IT continues to enhance the health and well-being of all Americans.

Sincerely,

/Perryn B. Ashmore/

Perryn B. Ashmore

Department of Health and Human Services (HHS)

Chief Information Officer

HHS CIO COUNCIL ENDORSEMENT

This plan was developed with input and endorsement from information technology (IT) leaders across the Department of Health and Human Services (HHS). The following Chief Information Officers (CIOs) have endorsed this plan and have committed to operationalizing the plan within their Operating Divisions (OpDivs).

/Sebrina Blake/

Sebrina Blake

Administration for Children and Families
(ACF)
Chief Information Officer

/Amy Abernethy/

Amy Abernethy

Food and Drug Administration
(FDA)
Chief Information Officer (Acting)

/J. Scott Cory/

Scott Cory

Administration for Community Living
(ACL)
Chief Information Officer

/Adriane Burton/

Adriane Burton

Health Resources and Services Administration
(HRSA)
Chief Information Officer

/Tim Erny/

Tim Erny

Agency for Healthcare Research and Quality
(AHRQ)
Chief Information Officer

/Mitchell Thornbrugh/

Mitchell Thornbrugh

Indian Health Service
(IHS)
Chief Information Officer

/Suzi Connor/

Suzi Connor

Centers for Disease Control and Prevention
(CDC)
Chief Information Officer

/Andrea T. Norris/

Andrea Norris

National Institutes of Health
(NIH)
Chief Information Officer

/Rajiv Uppal/

Rajiv Uppal

Centers for Medicare & Medicaid Services
(CMS)
Chief Information Officer

/Dawn Carr/

Dawn Carr

Substance Abuse and Mental Health Services
(SAMHSA)
Chief Information Officer (Acting)

HHS IT STRATEGIC PLAN FY 2021-2023

STRONGER. FASTER. MORE INNOVATIVE THAN BEFORE.

MISSION

Deliver HHS IT resources and services, leverage common solutions, and provide a secure infrastructure throughout the Department that enables Division-level IT organizations to focus on the unique mission requirements of the programs they support.

VISION

Cost-effective, secure, innovative, and timely IT solutions and services address the breadth of pressing human services and health care challenges across HHS program users and stakeholders.

GUIDING PRINCIPLES

Amplify Mission Impact, Exceed Customer Expectations, Improve Sharing,
Increase Value & Quality, Enable Agile Execution

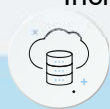


Goal 1:

Optimize the IT Organization

Cultivate a highly-skilled, diverse, and agile IT-savvy organization that can use emerging tech and innovations to serve the mission

- 1.1 Enhance Recruitment Strategies & Policies
- 1.2 Improve Collaboration
- 1.3 Accelerate Workforce Development
- 1.4 Improve Workforce Experience

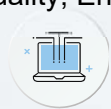


Goal 2:

Accelerate Technology Modernization & Innovation

Enhance and augment IT infrastructure, systems, cloud capabilities, and processes through innovation and emerging technologies to address pressing human services and healthcare challenges

- 2.1 Modernize Legacy IT
- 2.2 Share Technology Solutions
- 2.3 Establish Common Standards
- 2.4 Drive Innovation

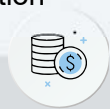


Goal 3:

Enhance Data & Interoperability

Establish data as a strategic asset by developing data and interoperability policies, ethics, strategies, and standards that default to sharing and discovery in order to increase data-driven innovation across HHS

- 3.1 Standardize Data Sharing
- 3.2 Create Data Policies
- 3.3 Cultivate Data Sharing Culture
- 3.4 Increase Data Insights



Goal 4:

Improve IT Management & Governance

Enable greater flexibility to procure and manage IT investments and services through enhanced acquisition mechanisms and streamlined governance processes

- 4.1 Enhance Acquisitions & Combined Purchasing Power
- 4.2 Increase Investment Transparency
- 4.3 Improve Compliance



Goal 5:

Strengthen Cybersecurity

Strengthen cybersecurity capabilities and risk-based strategies to enhance HHS' ability to detect and respond to cyber threats and improve overall user and customer experience

- 5.1 Improve Threat Detection
- 5.2 Enhance Enterprise Risk Management & Incident Response
- 5.3 Improve Customer Experience
- 5.4 Promote Greater Cybersecurity Awareness

INTRODUCTION

The United States (U.S.) Department of Health and Human Services (HHS) works to “enhance the health and well-being of all Americans, by providing for effective health and human services and fostering sound, sustained advances in the sciences underlying medicine, public health, and social services.” This mission has become increasingly central to the Nation as it recovers from a public health emergency and as healthcare and technology trends transform the world.

HHS requires reliable, secure, and high-quality data and technology to successfully accomplish its mission and address pressing health and human services challenges. Over the past year, there has been strong partnership between the HHS Office of the Chief Information Officer (OCIO) and HHS Operating Divisions (OpDivs) in using data and technology to enable greater innovation, customer-centric operations, and value-driven actions to improve mission outcomes. This partnership has led to the successful deployment of enterprise-level platforms, unprecedented levels of data sharing, a successful defense against the most significant cyberattack in the Department’s history, and a substantial increase in customer satisfaction. Recent advances within HHS OCIO and the OpDivs have rapidly accelerated change – by adopting emerging technology, acknowledging the need for timely and accurate data, responding to elevated threats, moving to virtualized work, and shifting resources to focus on pandemic priorities – enabling an information technology (IT) foundation that is stronger, faster, and more innovative.

As the Department looks toward the future, external pressures from an ongoing public health emergency and evolving workforce trends disrupt the traditional IT operating environment and service delivery model. To address this disruption, HHS OCIO and the OpDivs collaborated through a series of enterprise workgroups to iteratively develop the new HHS IT Strategic Plan (ITSP) for Fiscal Years (FY) 2021-FY 2023. The HHS Chief Information Officer (CIO) Council and HHS OCIO co-developed the following guiding principles that shape the value drivers in the ITSP and enable a culture of enterprise collaboration for the common good of HHS. The guiding principles shape IT activities across HHS and provide a shared understanding of how IT leaders strive to operate and create value for the Department.

GUIDING PRINCIPLES



Enabling a culture of cross-enterprise collaboration for the common good at HHS



Amplify Mission Impact

Enable HHS OpDivs to focus energy, resources, and investments on delivering world-class IT services with the centralization of certain IT commodities as well as easing the burden of processes through modernization.



Exceed Customer Expectations

Create a culture that seeks to continuously exceed customer expectations with high quality services and products created through a customer-centric lens.



Improve Sharing

Establish a culture of collaboration with clear roles and responsibilities between HHS OCIO and HHS OpDivs to share assets, lessons learned, best practices, and products and licenses across the Department.



Increase Value & Quality

Enable efficiencies, scalability, and flexibility across enterprise IT services for increased value to users, improved user experiences, and enhanced overall quality.



Enable Agile Execution

Drive greater agility within the Department to react, respond, and advance emerging mission requirements, enabling HHS OpDivs to flexibly meet customer needs with mission specific services at the Department-level.

The HHS ITSP FY 2021-2023 builds on HHS' established IT mission and vision; outlines the trends impacting the enterprise; and defines the five strategic goals and corresponding objectives to guide HHS' IT priorities over the next three fiscal years. Additionally, implementation of the HHS ITSP will further strengthen the Department's ability to deliver core IT functions with greater agility, security, and effectiveness, thereby providing for effective health and human services.

The health and human services environment changes rapidly, from advancements in technology, responding to public health emergencies, and evolving customer and mission needs. HHS conducted an analysis of current trends that could impact the Department's enterprise IT environment to inform the development of the HHS ITSP. The business challenges and IT landscape outlined in this section highlight the need for HHS to enhance core IT capabilities.

Business Challenges

The Digital Workplace Drives a Need for Enhanced Cybersecurity

The COVID-19 pandemic coupled with the expansion of advanced technologies have accelerated the need for digital services across HHS and the Federal Government. Federal employees and the American public now expect a digital experience from the Federal Government, for both convenience and safety. Most federal employees are now working remotely for an extended period. To meet shifting mission needs, agencies have invested in new technologies and processes for working remotely, collaborating virtually, delivering digital services, and improving security. The digitization of core operations and service delivery makes cybersecurity paramount. HHS has experienced more tenacious and sophisticated cyber-attacks with the increase in frequent digital interactions that generate sensitive data. HHS will meet expanding security and digital needs with the enhancement of core IT capabilities to comply with federal mandates like the Federal Information Security Modernization Act (FISMA) of 2014 and the 21st Century Integrated Digital Experience Act (IDEA).

The Evolving IT Workforce Challenges Traditional Employee Management Norms

Demographic shifts and emerging technologies have caused the IT workforce and its capabilities to rapidly evolve. Two key trends impacting the enterprise include: 1) engaging a workforce that spans multiple generational categories with diverse skills and needs; and 2) operating in an environment where mission and technology needs consistently evolve. As technologies shape needed workforce skills, HHS will establish strategies to reskill, retain, and expand the workforce. To keep pace with changes, HHS will align shifting workforce skill requirements and evolving mission needs to establish effective IT workforce practices (e.g., knowledge management, succession planning, workforce management, and workforce development). HHS will create a tailored approach to address the changing workforce trends in alignment with federal guidance.

The Shifting Role of the IT Organization Drives Enterprise Collaboration, Agility, and Flexibility

The expanding capabilities of IT create a dynamic where the IT organization no longer solely supports the mission but is part of the mission that shapes the enterprise strategy. As the IT organization's role changes, it increasingly focuses on service orchestration via Platform as a Service (PaaS) or Infrastructure as a Service (IaaS) technologies, in addition to service delivery. These shifts come with new governance responsibilities as well as new customer and partner expectations. Increasingly, IT organizations facilitate collaboration across the enterprise and drive agility, cost savings, interoperability, and flexible solutions that IT leaders tailor to various mission needs. HHS will create an approach, guided by the Federal Information Technology Acquisition Reform Act (FITARA) and other federal mandates, to meet these new responsibilities.

Technology Landscape

Emerging Technologies Drive Transformation and Enhance Mission Outcomes

Artificial Intelligence (AI), Machine Learning (ML), Distributed Ledger Technology (DLT), Robotic Process Automation (RPA), Cloud, Decentralized Solutions, Digital Reality, and other capabilities transform the way the enterprise delivers services, operates business processes, and governs today and into the future. Technology-driven innovation affects all parts of the enterprise, from day-to-day operations to the skillsets required for the workforce. Federal mandates provide guidance to drive transformation using emerging technologies. The impact of new technologies cause organizations to consistently reevaluate and adapt to their mission delivery. In operationalizing the HHS ITSP, HHS IT leaders will keep innovation at the forefront of planning efforts as they lay out their strategic vision as well as adapt to constant change and new capabilities, while preparing the organization's infrastructure to quickly deploy new technology.

Modernizing Legacy Technology Creates Cost Savings, Streamlines Processes, and Improves Capabilities

As enterprise leaders strategize on the future of IT, they balance desires for new capabilities with the reality of current technologies. Large portions of the federal government still utilize legacy systems. While these technologies have been fundamental to HHS' mission delivery, the current landscape of legacy systems presents challenges with the integration of new technologies and capabilities, as well cybersecurity risks. Modernizing these systems may require initial investment, but provides a significant opportunity for cost savings, new capabilities, and streamlined processes. As the enterprise plans, they will make strategic decisions not only on operations and maintenance of legacy systems, but also on the modernization of legacy systems to meet changing operational and mission needs.

Data Fuels Better Decisions, Enhances Collaboration, and Improves Mission Delivery

As the workplace and federal service delivery continue to become more digital, the amount of data generated grows exponentially. This data represents a significant opportunity to generate new insights, improve decision making, and enhance collaboration across the enterprise. The U.S. Congress enacted the Foundations of Evidence Based Policy Making Act of 2018 to modernize its data management practices and guide agencies in making better data-driven decisions. To realize the impact of Department data, HHS will revisit strategies for data management, including creation, capture, organization, storage, and sharing. Traditional data processes will change to improve consumption by machines and sharing across the enterprise. These changes enable the enterprise to become more data-driven, open, and collaborative to improve decision making and mission delivery.

GOALS AND OBJECTIVES OVERVIEW

HHS requires reliable and high-quality data and technology to achieve its mission. The environment that HHS IT operates in drives a need for tighter integration across the Department and clear roles as the IT community collectively responds to HHS’ complex, multi-faceted, and evolving health and human services concerns. The HHS ITSP FY 2021-2023 focuses on five core goals and associated objectives to strengthen the Department’s ability to deliver core IT functions with greater agility, security, and effectiveness amidst an evolving public health landscape. The goals are distinct aspirational statements of where HHS will focus to make progress towards a future vision. The objectives are specific results that will enable the achievement of each goal through HHS OCIO and OpDiv collaboration.

Overview of HHS IT Strategic Plan FY 2021-2023 Goals and Objectives

GUIDING PRINCIPLES

• • • • •

Amplify Mission Impact, Exceed Customer Expectations, Improve Sharing, Increase Value & Quality, Enable Agile Execution

<p>Goal 1: Optimize the IT Organization</p> <p>Cultivate a highly-skilled, diverse, and agile IT-savvy organization that can use emerging technologies and innovations to serve the mission</p>	<p>Goal 2: Accelerate Technology Modernization & Innovation</p> <p>Enhance and augment IT infrastructure, systems, cloud capabilities, and processes through innovation and emerging technologies to address pressing human services and healthcare challenges</p>	<p>Goal 3: Enhance Data & Interoperability</p> <p>Establish data as a strategic asset by developing data and interoperability policies, ethics, strategies, and standards that default to sharing and discovery to increase data-driven innovation across HHS</p>	<p>Goal 4: Improve IT Management & Governance</p> <p>Enable greater flexibility to procure and manage IT investments and services through enhanced acquisition mechanisms and streamlined governance processes</p>	<p>Goal 5: Strengthen Cybersecurity</p> <p>Strengthen cybersecurity capabilities and risk-based strategies to enhance HHS’ ability to detect and respond to cyber threats and improve overall user and customer experience</p>
<ul style="list-style-type: none"> 1.1 Enhance Recruitment Strategies & Policies 1.2 Improve Collaboration 1.3 Accelerate Development Opportunities 1.4 Improve Workforce Experience 	<ul style="list-style-type: none"> 2.1 Modernize Legacy IT 2.2 Share Technology Solutions 2.3 Establish Common Standards 2.4 Drive Innovation 	<ul style="list-style-type: none"> 3.1 Standardize Data Sharing 3.2 Create IT Policies For Data Use 3.3 Cultivate Data Sharing Culture 3.4 Increase Data Insights 	<ul style="list-style-type: none"> 4.1 Enhance Acquisitions & Combined Purchasing Power 4.2 Increase Investment Transparency 4.3 Improve Compliance 	<ul style="list-style-type: none"> 5.1 Improve Threat Detection 5.2 Enhance Enterprise Risk Management & Incident Response 5.3 Improve Customer Experience 5.4 Promote Greater Cybersecurity Awareness



GOAL 1: OPTIMIZE THE IT ORGANIZATION

Cultivate a highly skilled, diverse, and agile IT-savvy organization that can use emerging technologies and innovations to serve the mission

IMPERATIVE FOR CHANGE

The advancement of emerging technologies and the rapid pace of innovation is fundamentally changing the function of IT. The need for qualified talent is increasing as the workforce of retiree-eligible employees grows in relation to the historically low numbers of young professionals entering the government IT field. To prepare the Department to utilize new technologies and ready the workforce for the future, HHS will invest in staff and enhance the IT community to enable and empower the Department-wide IT workforce to fully utilize the technologies, tools, and resources available to them.

OBJECTIVE 1.1: ENHANCE RECRUITMENT STRATEGIES AND POLICIES

Identify diverse and skilled IT talent and rapidly hire and onboard new employees by developing flexible, enterprise-wide recruitment strategies and streamlining talent acquisition authorities, policies, and processes

HHS aims to maximize the quality of incoming talent and strategically evaluate the skillsets necessary to meet HHS' mission needs. HHS recognizes the need to streamline and minimize the burden in the hiring and onboarding process to improve the talent acquisition experience both for incoming talent and for department hiring offices. HHS will collaborate with stakeholders across the Department to develop enterprise-wide recruitment strategies that support OpDivs and Staff Divisions (StaffDivs) in the hiring process. HHS will both identify diverse talent – in terms of demographics and professional experience – and form partnerships externally to diversify its workforce and maximize the quality of incoming talent pool. This will include a focus on refining talent acquisition authorities, clarifying federal policies, and modifying hiring governance processes to

streamline the hiring process and maximize the scale of HHS' hiring and onboarding. To ease the workload burden on both applicants and hiring departments, HHS will better coordinate the use of hiring technologies and tools. By collaborating across the enterprise on recruiting hard-to-hire positions, the Department will collectively capitalize on the top talent in the market and share these resources across the enterprise.

OBJECTIVE 1.2: IMPROVE COLLABORATION

Improve collaboration across HHS by sharing best practices and in-demand resources to meet evolving priorities

HHS will orchestrate recurring sessions and events with OpDivs and StaffDivs to collaborate and share best practices and in-demand resources across the Department. This approach will reduce redundancy of similar processes and programs by enabling offices and employees in different areas of the Department to share best practices, lessons learned, and success stories. This approach will also provide a forum to share in-demand resources within the Department and more easily fill opportunities. HHS will accomplish this objective by maximizing the use of automated collaboration tools and solutions, which will also enhance the ability for employees to telework and further enable virtual work and sharing capabilities.

OBJECTIVE 1.3: ACCELERATE DEVELOPMENT OPPORTUNITIES

Develop diverse skillsets required for tomorrow's customer-centric IT environment by enhancing professional learning and development opportunities across HHS

To keep up with the growing demand of new skillsets and accelerate the adoption of emerging technologies throughout the Department, HHS will



GOAL 1: OPTIMIZE THE IT ORGANIZATION

Cultivate a highly skilled, diverse, and agile IT-savvy organization that can use emerging technologies and innovations to serve the mission

enhance its professional learning and development opportunities. In collaboration with OpDivs and StaffDivs, HHS will create shared career paths to amplify career mobility opportunities, develop rotational programs to allow employees to learn about different aspects of the Department and diversify their skillsets, and create mentorship programs to support the upskilling of talent. These programs will ready the workforce for the future customer-centric IT environment.

modernization and innovation, data and interoperability, IT management and governance, cybersecurity, and mission. This will create an IT organization with a workforce that is capable, comfortable, and confident to meet the ever-changing needs of HHS and motivated to continue to serve the American people.

OBJECTIVE 1.4: IMPROVE WORKFORCE EXPERIENCE

Improve workforce experience throughout the organization by improving retention activities to further develop the workforce

HHS will focus on improving the workforce experience to maximize employee satisfaction. HHS will coordinate with OpDivs and StaffDivs to evaluate incentive structures and programs to foster an environment that promotes a positive workforce experience. HHS will focus on creating unique retention programs and iteratively evaluate how implemented activities and pilots are impacting talent to modify these programs with agility. The enterprise working together will elevate the focus on the workforce experience to collectively improve career mobility and increase the rate of retention.

WHAT DOES SUCCESS LOOK LIKE?

Optimizing the IT organization by focusing on recruitment, hiring, onboarding, training, and retention will prepare HHS for the future of technology and spotlight the Department as an ideal place to work. Reducing time-to-hire, increasing retention, and improving diversity in staff and leadership will enable HHS to usher its IT organization into the future. The focal point for these elements within HHS will be the IT organization because it offers the greatest ability to accomplish the other goals of technology



GOAL 2: ACCELERATE TECHNOLOGY MODERNIZATION & INNOVATION

Enhance and augment IT infrastructure, systems, cloud capabilities, and processes through innovation and emerging technologies to address pressing human services and healthcare challenges

IMPERATIVE FOR CHANGE

The high proportion of legacy IT infrastructure, systems, and processes impede the Department's organizational agility and cost optimization, hinder the implementation of new mission-driven capabilities, and represent security and operational risks. Public health emergencies heighten the strain on legacy systems to deliver IT solutions that address healthcare and human services challenges. To mitigate these challenges, HHS requires a modernization and innovation plan that fits into budget, operations, and maintenance constructs. A tailorable modernization and innovation plan will guide the HHS enterprise and OpDivs to improve mission outcomes by driving new capabilities, greater agility, secure systems, and streamlined business processes.

OBJECTIVE 2.1: MODERNIZE LEGACY IT

Enable greater agility, scalability, and efficiency in operations to meet evolving mission needs by modernizing legacy IT infrastructure, processes, and systems

HHS will modernize its legacy IT infrastructure, systems, and processes (e.g., modern application architecture, cloud, AI). This will help the enterprise rapidly adapt to evolving customer needs, improve interoperability to drive collaboration, decrease maintenance costs, and create new capabilities. Overall, modernization that retires legacy systems with limited functionality will improve mission outcomes by driving new capabilities and reducing operational risk.

OBJECTIVE 2.2: SHARE TECHNOLOGY SOLUTIONS

Develop and scale reusable emerging technology solutions and tailorable on-demand shared service solutions by creating a mechanism to encourage enterprise-level collaboration

HHS OCIO and OpDivs consistently develop new technology solutions to meet mission and customer needs. Examples include cloud, tool, or platform-based solutions. Learning from these experiences can be shared across the enterprise and, in some cases, common approaches to adopting emerging technology will increase adoption and scaling. HHS will create a mechanism to enable OpDivs to efficiently explore, understand, and reuse technology solutions developed by peer organizations to accelerate the availability and adoptability of new technology solutions across the enterprise. HHS will apply inner source to all software engineering, when possible, to achieve an open source-like culture for software development.

OBJECTIVE 2.3: ESTABLISH COMMON STANDARDS

Improve technology interoperability, modernization, security, and federal standard adherence with a common enterprise-wide approach to modernization and innovation tailorable at the OpDiv level

HHS operates in a federated environment where OpDivs must meet unique mission and customer needs as well as collaborate to accomplish common enterprise goals. HHS will improve mission outcomes by setting tailorable guidelines for modernization that drive towards interoperability, collaboration, federal compliance, and improved mission outcomes. These guidelines will shape unique modernization approaches across the enterprise, reduce costs, and mitigate risks.



GOAL 2: ACCELERATE TECHNOLOGY MODERNIZATION & INNOVATION

Enhance and augment IT infrastructure, systems, cloud capabilities, and processes through innovation and emerging technologies to address pressing human services and healthcare challenges

OBJECTIVE 2.4: DRIVE INNOVATION

Create new and innovative IT capabilities by fostering both external and internal engagements to research, pilot, and test new ideas

Emerging technologies create new possibilities to transform the operating environment across the enterprise, which provides the potential for new and enhanced HHS capabilities. At the same time, customer and mission needs are rapidly changing. HHS will partner with private industry and external agencies to augment the Department's research and development and create new solutions that improve mission outcomes. External engagement strategies for consideration will include public-private partnerships, prize challenges, crowdsourcing, hack-a-thons, and reverse industry days.

WHAT DOES SUCCESS LOOKS LIKE?

A holistic approach to modernizing legacy technology and embracing innovation across HHS will help the enterprise adapt to a changing nation and meet frequently evolving customer needs. Modernization and innovation will drive cost savings, reduce new system adoption time, increase interoperability, improve security, enhance collaboration, improve customer focus, and drive new capabilities that help HHS achieve its mission.



GOAL 3: ENHANCE DATA & INTEROPERABILITY

Establish data as a strategic asset by developing data and interoperability policies, ethics, strategies, and standards that default to sharing and discovery to increase data-driven innovation across HHS

IMPERATIVE FOR CHANGE

Data has become a foundational aspect of the healthcare ecosystem and a key component of improving mission outcomes. However, HHS experiences barriers to maximizing the value of data within the enterprise. HHS' internal and external stakeholders expect data sharing, transparency, integrity, accuracy, and reliability to make evidenced-based decisions and deliver against mission goals. Re-evaluating technologies, policies, standards, and culture to improve data reuse, interoperability, and sharing can help HHS better achieve its mission to enhance the health and well-being of the American people.

OBJECTIVE 3.1: STANDARDIZE DATA SHARING

Improve visibility of data to make informed, mission-critical decisions by establishing data sharing and interoperability standards, models, assets, and platforms across HHS

HHS strives to default to data reuse and sharing when possible. Entities across the Department will work together to establish enterprise data sharing and interoperability standards, models, assets, and platforms to encourage data-sharing when appropriate across the Department. This will improve access to data and enhance the ability for leaders, scientists, researchers, and other stakeholders to make data-driven, mission-critical decisions. HHS will elevate data as an asset and enhance data usage to connect to the mission of the Department and to that of OpDivs and StaffDivs by guiding its entities in defining excellence; creating a mechanism to share best practices, research, and resources; and communicating the value of data across the Department.

OBJECTIVE 3.2: CREATE IT POLICIES FOR DATA USE

Enhance effective data management and ethical data use by creating enterprise data governance policies, as well as by establishing clear connections between public and private datasets

To advance HHS' goal of using data as a strategic asset, the Department will focus on data governance and data use policies. The essential elements to advance effective data management and ethical data use across the Department include data integrity, quality, ethics, transparency, privacy, and security. HHS will dually focus on establishing clear lineage between datasets across the enterprise, as well as between its external customers (e.g., academic institutions, other federal government agencies, state and local government agencies, public health institutions, and the public). The endeavors here will further efforts on data management within the confines of existing security and privacy policies and amplify the use of the Department's open data to foster innovation. HHS will create policies, governance, and ethical data and data use principles to safeguard data for the Department.

OBJECTIVE 3.3: CULTIVATE DATA SHARING CULTURE

Drive a culture shift towards data-driven innovation and decision-making by creating mechanisms to share data with internal and external stakeholders

To maximize the power of data, the Department will focus on strategically shifting the culture of data use across the enterprise towards sharing. This culture shift will amplify evidenced-based decision making, encourage data-driven innovation, and increase insight into data to improve the health and well-being of all Americans. The Department will evaluate the behaviors, risk-framework, and incentive structure around data sharing and increase



GOAL 3: ENHANCE DATA & INTEROPERABILITY

Establish data as a strategic asset by developing data and interoperability policies, ethics, strategies, and standards that default to sharing and discovery to increase data-driven innovation across HHS

the value of data to be an enterprise-level asset for the Department. HHS will also refine the processes for data sharing to be timelier and more user-friendly. These focus areas will collectively create a culture that defaults to sharing across the Department.

OBJECTIVE 3.4: INCREASE DATA INSIGHTS

Increase use and analysis of mission-critical data to optimize operational efficiencies and make evidenced-based decisions by using emerging technologies, automation, and data science expertise

Along with the data sharing standards, data governance policies, and improved data sharing culture, HHS will simultaneously focus on furthering insight into data itself. HHS recognizes the importance of emerging technologies and automation (e.g., AI and DLT) as well as the potential value they can bring to collecting, producing, handling, curating, storing, and understanding data. Technologies require not only technologists and engineers to deploy systems, but also data science expertise to interpret trends and insights. HHS will focus on furthering the use of technologies and automation, while growing the expertise required to maximize the potential of data. This will optimize operational efficiencies and maximize the potential integration of new data sources, while enhancing the ability to make data-driven decisions and foster innovation.

WHAT DOES SUCCESS LOOK LIKE?

To enhance data and interoperability across the Department, HHS will focus on the democratization of data by shifting the mentality from “need to know” to “responsibility to share” across the Department. HHS will encourage the Department to collect, produce, handle, curate, and store data with sustainable reuse in mind. This will shift the paradigm around trust and power preventing the Department from sharing data and alleviate commonly cited barriers to data sharing. HHS will focus on making datasets that are findable, accessible, interoperable, and reusable (FAIR)¹, developing sharable data assets, best practices, and tools, growing the quantity and quality of data scientists in the workforce, and refining data processes, policies, and technologies to maximize the use and power of data.

¹ FAIR Principles - GO FAIR. (2017). GO FAIR. <https://www.go-fair.org/fair-principles/>



GOAL 4: IMPROVE IT MANAGEMENT AND GOVERNANCE

Enable greater flexibility to procure and manage IT investments and services through enhanced acquisition mechanisms and streamlined governance processes

IMPERATIVE FOR CHANGE

The Department's current operating environment highly values agility, flexibility, and transparency. The Department's response to the COVID-19 pandemic created a renewed focus on modernizing legacy health IT systems and infrastructure and increased awareness of the challenges with traditional IT management and governance processes. To meet demand for modernization, HHS will continue to drive more efficient and innovative procurement of technology services and solutions while also streamlining governance processes to enable quicker decision making and responsiveness to meet customer and mission needs.

OBJECTIVE 4.1: ENHANCE ACQUISITIONS AND COMBINED PURCHASING POWER

Drive greater agility to procure technology services and solutions by improving program life cycle and IT acquisition planning to leverage the combined purchasing power of the Department

The COVID-19 pandemic has transformed the landscape of HHS. The Department's existing operating environment demands greater agility and flexibility in adopting innovative practices and emerging technologies to quickly meet evolving customer and mission needs. To address this, HHS will nimbly approach IT planning and acquisition planning improvement while taking steps to share information effectively across the Department. HHS will enhance acquisitions with tools and resources to support program offices with planning and execution, maximize information sharing of market and vendor capabilities, and leverage common contracting mechanisms to drive down costs for acquiring the required technology.

OBJECTIVE 4.2: INCREASE INVESTMENT TRANSPARENCY

Enhance transparency into IT decision making by promoting enterprise governance processes that provide flexibility while adhering to legislative requirements and IT management best practices

Making smarter IT investment decisions has become increasingly paramount amid rising technology costs and a need to consistently deliver greater transparency to the American public. This will require greater visibility into IT spend and responsive management and governance practices that consider the diverse portfolio of IT investments and the need for modernizing legacy systems and infrastructure. HHS will increase IT investment transparency and enhance data-driven decision-making by enabling greater flexibility within enterprise IT governance processes; driving towards full implementation of a common framework and taxonomy for categorizing investments; and exploring opportunities for automation using AI and ML.

OBJECTIVE 4.3: IMPROVE COMPLIANCE

Improve compliance with regulatory requirements and adoption of best practices by promoting greater information sharing across the enterprise and with other federal agencies

HHS recognizes its responsibility towards complying with federally mandated IT requirements (e.g., FITARA) to demonstrate effective management of the Department's portfolio of investments and assets. Adherence to these mandates is critical, but HHS should achieve this in a manner that does not sacrifice the agility and flexibility required to keep pace with a rapidly evolving public health landscape. HHS will promote greater information sharing across the Department and with other federal agencies to



GOAL 4: IMPROVE IT MANAGEMENT AND GOVERNANCE

Enable greater flexibility to procure and manage IT investments and services through enhanced acquisition mechanisms and streamlined governance processes

improve its ability to anticipate and meet future federal requirements.

WHAT DOES SUCCESS LOOKS LIKE?

Advancements in technology, rising costs of managing legacy IT infrastructure and systems, and a need for greater flexibility within program life cycle and IT acquisition planning will require HHS to modernize traditional IT management and governance practices. This dictates a greater focus on becoming leaner and more responsive to customer needs. Achieving this future ambition will enable HHS to deliver services faster by reducing acquisition time, realize significant cost savings through improved sharing, improve compliance with mandated IT requirements, and make data-driven decisions with greater ease and transparency.



GOAL 5: STRENGTHEN CYBERSECURITY

Strengthen cybersecurity capabilities and risk-based strategies to enhance HHS' ability to detect and respond to cyber threats and improve overall user and customer experience

IMPERATIVE FOR CHANGE

More than ever, the proliferation of data entrusted to HHS, advances in technologies, and a transition to an increasingly mobile operating environment have made HHS more vulnerable to cyberattacks on its IT infrastructure, networks, systems, and applications. Every employee and contractor must continue to share the security responsibility. This includes close security alignment with the overall IT and acquisition strategy to proactively manage risks while strengthening cybersecurity defenses amid an expanding threat landscape.

HHS will continue to enhance threat detection, risk management, and cybersecurity customer experience by utilizing Zero Trust Architecture principals. Zero Trust is beneficial as it addresses the decentralized, fast-paced, and variable threat environments that HHS operates in today.

OBJECTIVE 5.1: IMPROVE THREAT DETECTION

Enhance the early and ongoing detection and validation of cybersecurity threats through improved information sharing and use of automation, analytics, and Artificial Intelligence/Machine Learning (AI/ML)

HHS has the vital responsibility of safeguarding information entrusted to the Department to protect the health and well-being of all Americans. This responsibility is more important than ever as cybersecurity attacks take on greater complexity due to decentralization of information management, transition of the HHS workforce to a virtual environment, and the need for quick adoption of emerging technologies to support the mission. HHS will enhance the detection of cybersecurity threats and risk by improving information sharing and deploying emerging technologies such as AI/ML and zero trust to drive greater operational visibility into potential vulnerabilities across the Department.

OBJECTIVE 5.2: ENHANCE ENTERPRISE RISK MANAGEMENT AND INCIDENT RESPONSE

Improve overall cybersecurity posture by establishing and implementing common frameworks, programs, and processes that enable HHS to make informed, data-driven, and risk-based decisions

Continuous risk management is critical to protecting the Department's IT networks, systems, and infrastructure amid an ever-expanding threat landscape. Without effective strategies for risk management at an enterprise level, HHS is vulnerable to attacks that can cripple delivery of mission-critical operations that impact millions of human lives. HHS will enhance its capabilities to make informed, risk-based decisions by integrating security considerations more intentionally across business functions, clearly articulating the roles and responsibilities of key security stakeholders across the Department, and implementing leading frameworks, programs, and tools to manage cybersecurity vulnerabilities and streamline incident response more effectively across HHS.

OBJECTIVE 5.3: IMPROVE CUSTOMER EXPERIENCE

Improve internal and external stakeholder collaboration and service delivery by providing actionable cybersecurity information optimized by user-focused visualizations, enabling risk-based decision-making

HHS continues to experience increases in cyber-attacks on its infrastructure and systems. To protect Department assets, HHS must understand the needs of its customers and business partners in navigating cybersecurity threats and risks. This dictates a focus on better understanding challenges and insights of the end-user as well as developing simple and easy-to-use solutions. HHS will promote a greater focus



GOAL 5: STRENGTHEN CYBERSECURITY

Strengthen cybersecurity capabilities and risk-based strategies to enhance HHS' ability to detect and respond to cyber threats and improve overall user and customer experience

on improving overall customer experience with human-centered design approaches to identify the unique requirements to provide customers and business partners easily understood and actionable cybersecurity information in real-time.

OBJECTIVE 5.4: PROMOTE GREATER CYBERSECURITY AWARENESS

Improve performance on meeting regulatory and compliance requirements by promoting greater awareness, understanding, and adoption of cybersecurity best practices into core IT operations and technologies

The HHS community will share the responsibility for securely managing sensitive information on behalf of the Nation. This includes, but is not limited to, HHS staff, customers, business partners, and contractors across the Department. The Department can only safeguard HHS' assets with these stakeholders understanding the security implications on delivery of mission-critical operations. HHS will provide tailored approaches to better engaging, educating, and communicating with the HHS community to help improve the Department's overall cybersecurity posture, ability to consistently meet mandated requirements, and ability to safeguard against insider threat.

WHAT DOES SUCCESS LOOKS LIKE?

Increasing the security and resiliency of our IT infrastructure, systems, and workforce will continue to be a priority across the Department. Achieving this future ambition will enable HHS to have greater operational visibility into cybersecurity risks facing the enterprise; enhance the sharing of mission-critical information in real-time; reduce vulnerability to future cybersecurity threats; improve compliance with Federal Information Security Modernization Act of 2014 (FISMA) standards and requirements; and increase our ability to quickly recover from a crisis like COVID-19 and threats posed by malicious actors while continuing to serve the American people. This requires that the HHS community focus on crisis management, disaster recovery, and business continuity.

The HHS ITSP FY 2021-2023 represents the Department's shared IT ambition for the future and will strengthen HHS' ability to deliver its core IT functions with greater agility, security, and effectiveness. Operationalizing this plan will require enterprise-level collaboration and support from leaders across the Department to champion the goals and objectives outlined in this plan. Success will require a collaborative organizational culture that promotes information sharing and the continued exploration of new opportunities to work together.

The HHS OCIO will lead efforts across HHS to provide flexible enterprise-wide guidance that is easily adoptable across different operating environments; explore opportunities for collaboration, cost savings, and reducing administrative burden; and provide value add services that amplify mission impact. As partners in this strategy, OpDivs will break down silos to enable greater collaboration and sharing of information, resources, and lessons learned as well as operationalizing enterprise initiatives across the Department. With the publication of this plan, HHS will begin implementing enterprise initiatives that will enable the achievement of the goals and objectives detailed in this strategy. To support this larger implementation effort HHS will:

- **Develop an Implementation Plan:** HHS OCIO leaders, in close collaboration with OpDiv CIOs, will develop an implementation plan for executing the enterprise-level initiatives that will operationalize the ITSP and achieve the goals and objectives defined in this strategy. This tactical plan will help identify and organize the groups of enterprise stakeholders that will support the implementation of enterprise-level initiatives. The implementation plan will also provide insight into the investments and sequencing of the initiatives.
- **Establish a Strategy Implementation Governance Structure:** HHS will establish an enterprise-level governance approach comprised of IT leaders across the Department and OpDivs that have decision-making authority to drive the implementation of the strategy. This group will hold responsibility for implementation of the different initiatives across each goal.
- **Launch Initiative Teams:** To operationalize the Implementation Plan, HHS OCIO and OpDiv CIOs will stand up initiative teams for each enterprise-level initiative. The teams will hold responsibly to both further progress toward the defined milestones and coordinate with the Governance Structure.
- **Manage and Communicate Change:** Everyone within the HHS IT community – HHS leadership, workforce, customers, business partners, and the public health community at large – share responsibility to successfully achieve the Department's future IT ambition. Engaging and involving this diverse group of stakeholders to support implementation of this strategy will require the HHS IT community to manage and communicate change effectively. This includes creating opportunities to collaborate with others more meaningfully as well as an overarching communications strategy that will indicate how and when HHS will share information.

Implementation of this new enterprise-wide IT Strategic Plan is more important than ever and will position HHS for long-term success and help the Department better address future IT challenges and opportunities.



U.S. Department of Health and Human Services

APPENDICES

FY 2021–2023

APPENDIX A – DEVELOPMENT OF THE IT STRATEGIC PLAN

Among the ongoing public health emergency, leaders across HHS and the OpDivs understood the necessity of enterprise-level collaboration to meet Department’s priorities in this unprecedented environment. The HHS OCIO’s Office of Enterprise Services (OES) spearheaded the development of the HHS ITSP FY 2021-2023 with participation from the HHS CIO, the HHS CIO Council, HHS OCIO Executives, and subject matter experts from across the Department.

OES convened the HHS CIO and OpDiv CIOs at a CIO Summit in August 2020. At this Summit, HHS leaders designated key IT priorities and defined guiding principles to serve as a foundation for the ITSP. Five goals emerged from the discussions in the CIO Summit: Optimize the IT Organization, Accelerate Technology Modernization & Innovation, Enhance Data & Interoperability, Improve IT Management & Governance, and Strengthen Cybersecurity.

To further develop the goals for the IT Strategic Plan, OES established enterprise ITSP Working Groups. The HHS CIO Council nominated leaders from their OpDivs to participate in enterprise workgroups focused on each goal. Each workgroup, with guidance from OES and HHS OCIO Executives, executed a series of sprints to develop the new ITSP. Sprint 1 focused on establishing ITSP goals and objectives to create a shared, overarching vision for collaboratively advancing strategic IT efforts across HHS. Sprint 2 focused on identifying strategic initiatives to advance the implementation of the goals and establishing measures for determining success. Sprint 3 focused on determining how HHS OCIO and OpDivs will move forward to execute and implement the new HHS ITSP. The CIO Council, OCIO Executives, and the HHS CIO iteratively provided feedback throughout the development process to weigh in on the discussions and outputs. The participants in the ITSP development process can be found in Appendix B –Participants In ITSP Development.

Key stakeholders across the enterprise received frequent communication throughout the development of the ITSP. The goal of these communications was to share regular and consistent updates to key stakeholder groups involved in the ITSP development journey and provide key stakeholders with opportunities to offer feedback throughout the ITSP development process to collaboratively discuss the shared vision for HHS ITSP. The ITSP Team provided communications for the HHS OCIO staff, the OpDiv CIOs staff, and the Administration and Management Domain IT Steering Committee (AMD ITSC).

The review and approval process culminated with a CIO Council meeting in April 2021 where the members approved the publication of this document.

APPENDIX B – PARTICIPANTS IN ITSP DEVELOPMENT

HHS Enterprise Workgroup Participants

Administration for Children and Families (ACF)	Sebrina Blake, Francisco Romero
Administration for Community Living (ACL)	Scott Cory, Terrill Curtis, Kowanna Parran
Agency for Healthcare Quality and Research (AHRQ)	Pat Bosco, Eric Colombel, Tim Erny, Amy Ngan
Centers for Disease Control and Prevention (CDC)	Brian Lee, Paul Morris, Dawn Seckinger
Centers for Medicare & Medicaid Services (CMS)	Brian Jennings, George Hoffmann, George Linares, Erin Mangle, Jennifer Mooney, Aaron Pleines, Bobby Saxon, Shakia Ward
Food and Drug Administration (FDA)	Mohammed Sohail Chaudhry, Cindee Hogan, Ram Iyer, Mia Mercer, Joe Montgomery, Craig Taylor, Lewis Watson, Tarsha White
Health Resources and Services Administration (HRSA)	Adriane Burton, Ratima Kataria, Brent Kopp
Indian Health Service (IHS)	Ben Koshy, Mark Rives, Andrea Scott
National Institutes of Health (NIH)	Dennis Papula, Amber Simco, Chris Todd
Office of Inspector General (OIG)	Erica Harris, Justin Stekervetz
Substance Abuse and Mental Health Administration (SAMHSA)	Ammar Ahmad, Dawn Carr, Wei Chen, Rich Troutman, Terrence Dunne

HHS Office of the Chief Information Officer (OCIO) Participants

Perryn Ashmore	Christos Skeadas
George Chambers	Kevin Duvall
Oki Mek	Chris Zeleznik
Janet Vogel	Jaime Robinson
Chris Bollerer	Phil McNeal
John Shimabukuro	Sherrell Parker
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Julie Chua	Steven Verber
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