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The Office of the National Coordinator for Health Information Technology
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2020-2025

Federal Health IT Strategic Plan

DRAFT FOR PUBLIC COMMENT

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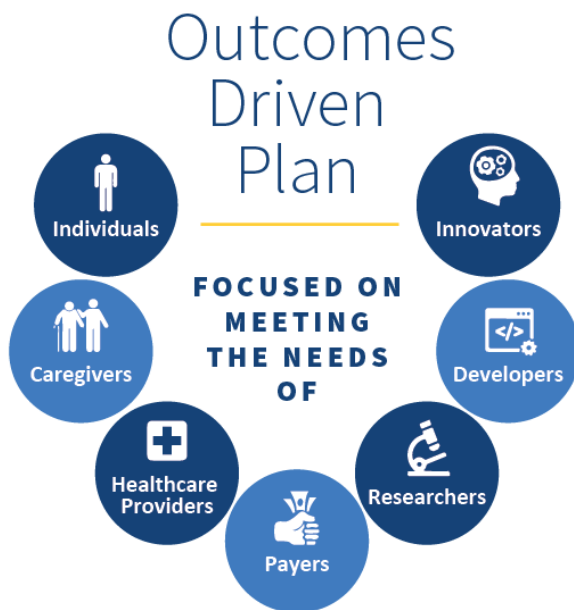
LETTER FROM THE National Coordinator

Letter from the National Coordinator

In our everyday routines, we rely on rapidly advancing technology to do a lot for us. From shopping for groceries, to requesting transportation, or managing our finances, we have come a long way since the dawn of the internet and mobile devices. However, one industry that has not quite caught up is healthcare. While individuals have access to an abundance of information and can use technology in other areas to interact with data in so many innovative ways, as patients they cannot access their health information when and where they need it. In today's digital world, patients' right to control their health must include the right to access and control their health information. Most healthcare providers and health systems now use electronic health records (EHRs), but information captured in these systems often remains inaccessible to patients, caregivers, and healthcare providers across different settings. All stakeholders in the healthcare sector will benefit from a fully connected health system that empowers patients, caregivers, and their healthcare providers to use and share electronic health information.

Thanks to provisions enacted by Congress, the U.S. Government is working to bring more robust health information into patients' hands and ensure that technology and smartphone applications (apps) will help them better manage their health and enable them to shop for care. The digitization of the nation's healthcare system has resulted in greater accessibility of health information to patients and caregivers. Yet, the system's transformation is hindered by entrenched interests looking to prohibit access to that information. We in the Office of the National Coordinator of Health Information Technology (ONC), along with our partners across the federal government, strive to promote a health information technology (health IT) economy that increases transparency, competition, and consumer choice, while also seeking to protect the privacy and security of individuals' health information. These efforts include coordinated investments, standards and policies for secure, standards-based application programming interfaces (APIs), and user-focused technologies.

In today's digital world,
patients' right to control
their health must include
the right to access and
control their health
information



This Plan is deliberately outcomes-driven, with goals focused on meeting the needs of individuals, caregivers, healthcare providers, payers, researchers, developers, and innovators.

With this *2020-2025 Federal Health IT Strategic Plan (Plan)*, federal partners will continue to play a role in ensuring that patients get access to their electronic health information and have the full transparency that they need to shop for care. The Plan will decrease provider burden and open up entirely new business models throughout the health app economy. This Plan is deliberately outcomes-driven, with goals focused on meeting the needs of individuals, populations, caregivers, healthcare providers, payers, researchers, developers, and innovators.

The federal government and private sector have worked together to help digitize health information and healthcare. Yet, much work remains to make sure patients and caregivers have access to information they value and can use. With this Plan, the federal government demonstrates its ongoing coordinated focus on interoperability of health information. It emphasizes product and price transparency, allowing individuals to select the technology or app they wish to use to access their information and control its movement. ONC, the Department of Health and Human Services (HHS), and their federal partners have taken and will continue to take major steps to make healthcare more transparent, accountable, and accessible, while preserving the patient-provider relationship.

From mobile apps to automation and machine learning—the future of healthcare is promising.

Donald W. Rucker, M.D.

*National Coordinator for
Health Information Technology*

Federal Health IT Vision and Mission



FEDERAL HEALTH IT

Vision

A health system that uses information to engage individuals, lower costs, deliver high quality care, and improve individual and population health.





FEDERAL HEALTH IT

Mission

Improve the health and well-being of individuals and communities using technology and health information that is accessible when and where it matters most.

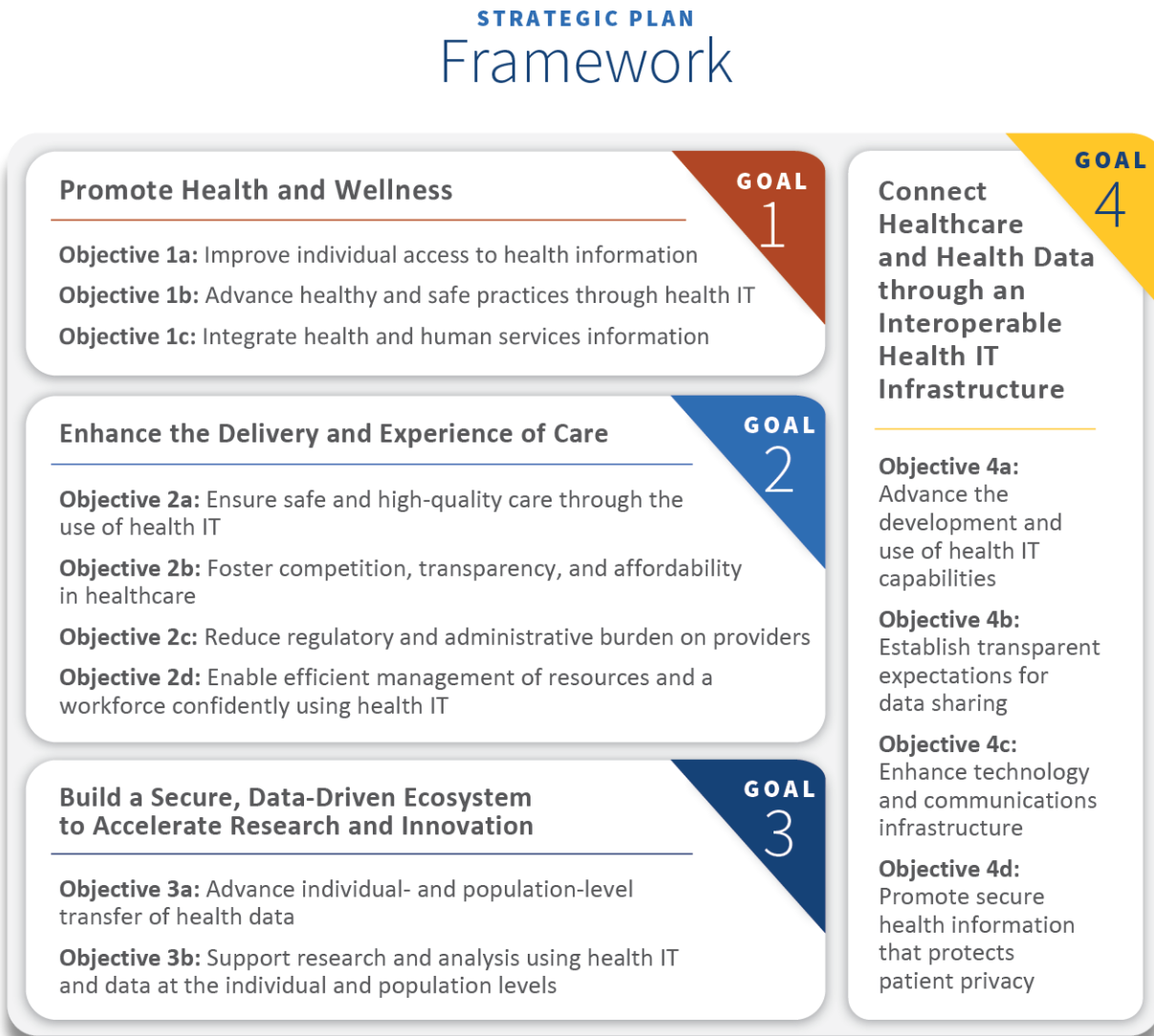
Federal Health Principles

Through this federal health IT strategy, the government strives to:

	Focus on value.	Promote and pursue activities that improve health and care quality, efficiency, safety, affordability, equity, effectiveness, and access.
	Put individuals first.	Embrace person-centered care that values the whole individual, including their goals, values, culture, and privacy.
	Build a culture of secure access to health information.	Support secure health information access, exchange, and use by individuals, caregivers, healthcare providers, and other stakeholders.
	Put research into action.	Strengthen feedback loops between scientific and healthcare communities to efficiently translate evidence into clinical practice and improvement.
	Encourage innovation and competition.	Support and protect innovation and competition in health IT that result in new solutions and business models for better care and improved outcomes.
	Be a responsible steward.	Develop health IT policies through open, transparent, and accountable processes; use federal resources judiciously; and, when possible, rely on the private sector.

Strategic Plan Framework

This Plan includes four overarching goals, each of which includes specific objectives. Taken together, these should not be viewed as sequential, but as interdependent with a collective purpose of improving the health of individuals, families, and communities.



Introduction

Health IT refers to the use of information and communication technologies in caring for patients, tracking diseases and protecting public health, conducting research, and improving the health of individuals and populations.ⁱ It is a foundational component of healthcare in the United States and is critical to improving our health system. Health IT has moved from being one tool in the healthcare toolbox to an integral component of healthcare delivery. As of 2017, 80 percent of physician offices and 96 percent of acute care hospitals use ONC-certified health IT.ⁱⁱ Information exchange among healthcare providers, patients, and organizations using health IT is also increasing rapidly. As a result of new technologies, the volume of electronic health information being generated each day has never been greater.

With the use of health IT rapidly advancing, it is essential for the federal government to continue to ensure health IT and electronic health information are accessible to patients and are used appropriately to improve healthcare decision making and health outcomes.

How Health IT is Used

Health IT is used in a variety of ways to help deliver care and improve health outcomes. Individual patients can use health IT (e.g., patient portals and patient-facing apps) to access their health information, track and manage treatment of their health conditions, and interact with healthcare providers. When available, they can also assess quality and cost information to make informed decisions about where to seek care.

Healthcare providers and healthcare organizations can use health IT to input and reference their patients' health information to make clinical decisions, create care plans, exchange health information with other clinicians and care settings, assess the overall health of their patient populations, and engage in quality improvement and population health management activities.

Public health workers, researchers, and community-based organizations increasingly use health IT outside of the care setting to assess health and healthcare quality across different individuals and populations so they can address health and related social disparities, lower costs, and improve outcomes. This often entails using health IT to exchange health information for population health activities and to collect data on reportable conditions to prevent and stop disease outbreaks.

While also engaging in the above activities, health plans use health IT to track member health status and cost and engage in care management activities.

The Federal Government's Role in Health IT

Federal agencies are purchasers, regulators, developers, and users of health IT. Health IT supports activities that help federal agencies carry out their missions and serve the nation every day. These activities include using EHRs, data systems, and other health IT to conduct public health surveillance and research, directly provide healthcare services to patients, and administer government coverage programs such as Medicare and Medicaid.

In addition, federal agencies play a role in fostering a culture of privacy and security of individuals' health information among developers and users of health IT, protecting competition and innovation, and providing funding to conduct research on the use and expansion of health IT. Agencies may also provide grant funding and technical assistance to acquire, upgrade, and deploy health IT.



Challenges in Healthcare

There are many challenges in the healthcare environment that must be considered when developing and implementing strategies to advance use of health IT. For instance, continued growth in healthcare spending may deprioritize investments in health IT development, purchasing, and deployment. Additionally, expanded reliance on health IT can potentially exacerbate health disparities at the individual and population levels due to unequal access to and use of technology among certain populations. For example, while personalized health information apps may help smartphone users manage their health, people without access to smartphones will not experience this benefit. In contrast to these challenges, the use of health IT also provides opportunities to address or mitigate some challenges, especially those related to poor health outcomes and access to care. For example, telehealth capabilities could bring new services to rural populations with a shortage of healthcare providers.

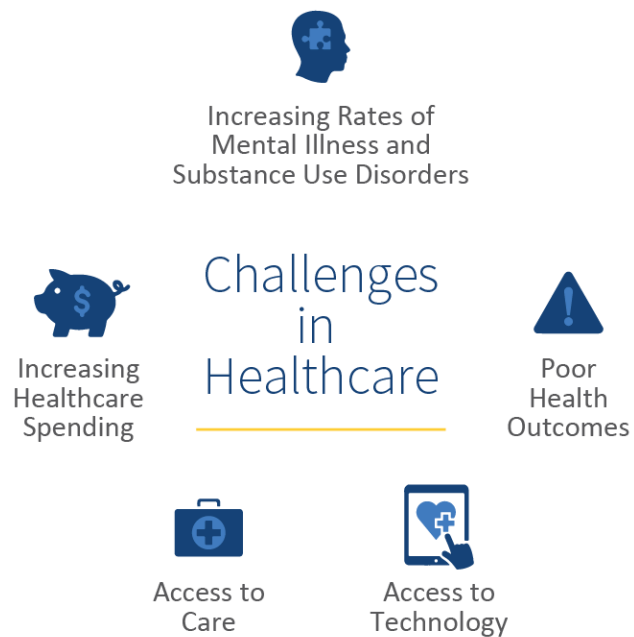
Increasing Healthcare Spending

National health expenditures were about \$3.5 trillion in 2017 and are projected to reach more than \$5.3 trillion by 2025, with annual increases averaging about 5.4 percent. As in previous years, this increase is projected to significantly outpace growth in the overall economy as healthcare will continue to account for a larger and larger portion of gross domestic product.ⁱⁱⁱ

Major factors driving projected increases in healthcare spending include population growth and aging of the U.S. population.^{iv} Older adults often have complex healthcare needs that may require expensive, ongoing care. The aging of the population will continue to result in higher healthcare spending, especially in Medicare and Medicaid programs.^v

Poor Health Outcomes

While healthcare spending is increasing, health outcomes are not significantly improving. Compared to other high-income countries, the United States has a high rate of disease burden and worse mortality rates, largely due to greater prevalence of chronic conditions such as diabetes and heart disease.^{vi} Disparities in health outcomes remain significant, with racial and ethnic minorities having higher rates of chronic conditions and worse outcomes overall.^{vii} Remarkably, the U.S. life expectancy decreased between 2016 and 2017 for the first time in decades.^{viii,ix}



Increasing Rates of Mental Illness and Substance Use Disorders

Increasing rates of mental illness and substance use disorders are major contributors to decreased life expectancy in the U.S. Rates of depression and suicide are increasing, and overdoses from opioids and other drugs and alcohol-related deaths continue to rise.^x Rural communities, which often face challenges accessing health services, are especially affected by mental illness and substance use.^{xi}

Access to Care

Health insurance coverage is a significant determinant of access to healthcare.^{xii} As health insurance premiums continue to increase, so does the rate of uninsured individuals in the U.S.^{xiii,xiv} Being uninsured increases the likelihood that people will avoid care and face financial hardships when care is received.^{xv} It can also lead to higher uncompensated spending as healthcare providers take on extra costs to treat uninsured patients who are unable to pay for their care out of pocket.^{xvi}

Even among Americans with health insurance, access to care can be a challenge due to lack of affordability.^{xvii} The insured may face significant out-of-pocket spending from deductibles, co-pays, and unknowing use of out-of-network healthcare providers. Access can also be limited by a lack of available healthcare providers within an insurer's network. In addition, barriers to entry and impediments to competition in healthcare can exacerbate access problems by increasing prices associated with products and services.^{xviii}

Access to Technology

Access to technology remains a challenge in the United States despite significant strides made in increasing broadband internet access in recent years. While more than 93 percent of the U.S. population lives in an area with both high speed internet and high-speed Long Term Evolution (LTE) mobile service^{xix} and 90 percent of Americans use the internet,^{xx} more than one quarter of Americans do not have broadband internet access at home.^{xxi}

Minority, low income, tribal, and rural populations are less likely to have broadband internet service at home than others.^{xxii} Lack of access to broadband-dependent technology and health information made available through technology can further exacerbate existing health disparities by creating a barrier to the range of technologies that support cost-effective and high-quality care.^{xxiii}

Even when patients and caregivers can access health information electronically, they may have low levels of health literacy and may not understand what the information means. This is a significant challenge for improving patient health, especially as individuals are increasingly being expected to take a greater role in managing their own health and care.

Opportunities in a Digital Health System

In addition to addressing challenges in healthcare and technology, strategies to advance the use of health IT must consider the current state of healthcare, as well as trends in technology development and use. These considerations, which are influenced by both regulatory and cultural shifts in the U.S. healthcare system, should be reflected in all federal health IT goals, objectives, and strategies.

Patient Empowerment

Healthcare continues to move in the direction of person-centered care. This more active role for patients includes responsibilities such as improving healthy behaviors, self-management of chronic conditions, and engaging in shared decision-making with healthcare providers. As a result of health IT, individuals now have greater opportunity to review quality and cost information to make more informed decisions on where to seek care for themselves and their families.

Patient access to their health data is a key component of these activities. Policies promoting use of application programming interfaces (APIs), including regulations that will implement certain provisions of the 21st Century Cures Act, will drive the development of health apps that provide access to and use of data in EHRs. HHS is encouraging payers and healthcare organizations to make price information available through regulations and policies, and the Federal Trade Commission ensures that health IT companies comply with antitrust laws to promote and protect competition. In addition, the Office for Civil Rights has announced its Health Insurance Portability and Accountability Act (HIPAA) right of access enforcement initiative earlier this year and brought its first enforcement action on the HIPAA right of access in September 2019.^{xxiv} The combination of these factors helps to support person-centered care.

Movement to Value-Based Care

The U.S. healthcare system's continued progress toward value-based care, in which payment is linked to some measure of performance and patient outcomes, connects with the growing emphasis on patient empowerment. In 2018, approximately 61 percent of public and private healthcare spending was part of a value-based payment or pay-for-performance model, up from 38 percent in 2015.^{xxv,xxvi} This movement is likely to continue and perhaps accelerate due to the projected increases in healthcare spending.

Opportunities in a Digital Health System



Patient Empowerment



Movement to Value-Based Care



Achieving Interoperability



New Technologies and Available Data



Reducing Regulatory and Administrative Burden



Privacy of Health Information



Security of Health Information

The shift to value-based care has resulted in new incentives for healthcare providers to improve quality and patient outcomes. These shifting incentives place greater importance on addressing social determinants of health and patient health behaviors, and engaging in preventive care, population health management, and disease management. Healthcare provider success in value-based payment models is contingent upon access to robust data that allows them to better understand the needs of their patients, stratify their patients by risk, engage in additional patient outreach, and track improvement over time. Further, health plans require new types of data at the population level to define and measure outcomes and assure improved health for Americans.

Achieving Interoperability

EHRs are now widely used in physician practices, hospitals, and health systems across the U.S. As a result, the federal government and the private sector have focused on improving interoperability—the secure exchange of electronic health information with, and use of electronic health information from, other health IT systems without special effort on the part of the user.^{xxvii}

The federal government promotes interoperability of health information through several programs. For example, the Centers for Medicare & Medicaid Services (CMS) includes health IT-focused incentives in programs like Medicare’s Promoting Interoperability (formerly the Medicare and Medicaid EHR Incentive Programs, or Meaningful Use) and the Merit-Based Incentive Payment System. In 2019, CMS also proposed a rule to advance interoperability by increasing the seamless flow of health information; reducing burden on patients, caregivers, and healthcare providers; and fostering innovation by unleashing data for researchers and innovators.^{xxviii} In its 2019 proposed rule, ONC promotes the interoperability of health information by supporting the use of Health Level Seven’s (HL7) Fast Healthcare Interoperability Resources (FHIR®) standard for APIs. The use of FHIR® encourages increased data sharing between patients, healthcare providers, payers, researchers, and other healthcare entities. In addition, as required in the 21st Century Cures Act, ONC proposed regulations that address information blocking, which is generally described as the practice of interfering, preventing, or discouraging the access, exchange, and use of electronic health information for competitive or other reasons.^{xxix}

The private sector recognizes the value of interoperable health information. Spurred by regulatory actions from ONC and CMS, it is increasingly using APIs to develop tools that provide patients and caregivers with their data and promote information sharing. Furthermore, the use of health information exchanges and health information networks continues to grow. This signifies continued investment in collaboration and information sharing among stakeholders in this sector.

New Technologies and Available Data

The private sector plays a critical role in developing new technologies to improve access to care and health information. New algorithms, analytic capabilities, and machine learning (ML) capabilities are quickly moving from limited, conceptual use to everyday use by healthcare providers, individuals, and researchers. Remote monitoring technologies such as wearables and web-enabled medical devices also continue to become more advanced. Their use is rapidly expanding as healthcare providers and patients become more comfortable using such technologies.

Use of these new technologies is increasing in certain areas in part due to improved access to broadband and increased computing power. Volumes of data can now be processed, manipulated, and exchanged almost instantaneously, and live, high-resolution video can be sent and received without interruption.

In addition, these new technologies, along with existing claims and EHR data, mean that the volume of health and health-related data being generated and available for improving care quality has never been greater. Collecting, organizing, analyzing, interpreting, and applying this “big data” to clinical decision making is both a challenge and a significant opportunity.

Reducing Regulatory and Administrative Burden

While interoperable health IT has the potential to improve patient care and outcomes, current system designs can be burdensome to healthcare providers and other users. Much of the burden on healthcare providers is a result of EHRs being originally designed to support reimbursement and financial processes. Activities such as clinical documentation and prior authorization take time that healthcare providers could otherwise spend seeing patients. Strategies to advance health IT should minimize burden by considering how best to incorporate technologies into existing workflows and reducing reporting requirements.

In the 21st Century Cures Act, Congress emphasized the importance of easing regulatory and administrative burden associated with the use of health IT and directed ONC and CMS to develop a strategy for reducing this burden.^{xxx}

Privacy of Health Information

The most sensitive information about a person is often their health information. Even with the implementation and use of robust privacy practices in response to federal and state regulations, health information can still be misused or inappropriately disclosed in ways that harm consumers. Individuals and their caregivers need education on data practices, their associated risks, and opportunities to provide consent to these uses. Further, government agencies, healthcare providers, health IT developers, researchers, and other stakeholders need to work together to implement robust mechanisms for ensuring the privacy of health information as more and more data are generated and health IT becomes more interoperable.

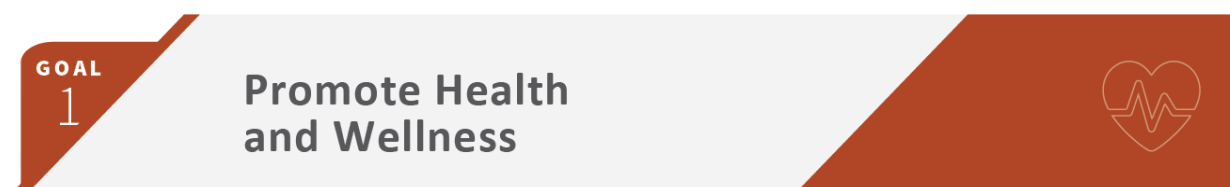
Security of Health Information

Individuals, healthcare providers, researchers, and other stakeholders alike have significant concerns about the confidentiality and integrity of electronic health information that is created, transmitted, and stored using health IT. This is especially true in light of the healthcare industry’s move toward cloud-based storage, where data on entire populations of patients is held in one place. Despite the risk of cybersecurity attacks, breaches, and other threats, healthcare organizations still have poor understandings of cybersecurity risks and best practices.^{xxxii} More robust mechanisms for securing information will be critical as health IT systems continue to become more advanced and interoperable.

Goals, Objectives, and Strategies

This section describes the 2020-2025 strategic goals and objectives and lists strategies for meeting each objective. In addition, Appendix B describes how federal agencies can benchmark progress and measure success over time.

Goal 1	Promote Health and Wellness
Goal 2	Enhance the Delivery and Experience of Care
Goal 3	Build a Secure, Data-Driven Ecosystem to Accelerate Research and Innovation
Goal 4	Connect Healthcare and Health Data through an Interoperable Health IT Infrastructure



Goal 1: Promote Health and Wellness

The use of health IT must go beyond the sharing of electronic health information between healthcare providers and the enabling of administrative tasks. Health IT should be used to empower individuals, address patients' full range of health needs, promote healthy behaviors, and facilitate the improvement of health for individuals, families, and communities.

Objective 1a: Improve individual access to health information

A key aspect of person-centered care is empowering individuals by providing them access to their health information. It allows patients to become more engaged in their care and management of their conditions and alleviates strain on caregivers who manage the care of their loved ones. To expand access to health information, it is necessary to improve access to technology, especially for populations in rural areas, persons with disabilities, racial and ethnic minorities, and those with low socioeconomic status.

Strategies

- **Enable individuals to access their health information** by ensuring that they are able to view and interact with their data via secure mobile apps, patient portals, and other tools.
- **Promote greater portability of health information** through APIs and other interoperable health IT that permits individuals to readily send and receive their data across various platforms.
- **Improve access to smartphones and other technologies** needed to attain and use health information, especially for at-risk, minority, rural, disabled, and tribal populations.
- **Build the evidence base on the use of health information**, including on the types of information that will benefit individuals most and the best ways to present information to patients and caregivers.

- **Provide resources on how to access and use health information** so that patients and caregivers understand how to use their data safely, securely, and effectively.

Objective 1b: Advance healthy and safe practices through health IT

Health IT is used every day to improve quality of care and patient outcomes. However, its full potential for improving overall population health and promoting safety is still being realized. Health IT can be further leveraged to promote access to care for preventing new or addressing existing health needs, as well as to identify and respond to public health threats.

Strategies

- **Promote healthy behaviors and self-management** through patient-facing apps and wearable technology to allow individuals to track physical activity, share and compare health and fitness data, adhere to care plans, and make informed lifestyle choices.
- **Leverage all levels of data** (e.g., individual- and community-level) to predict epidemics, inform and monitor public health action outcomes, improve quality of life, and address disease occurrence and preventable deaths.
- **Advance use of evidence-based digital therapeutics** as treatment options for patients to prevent, manage, and treat conditions through smartphones, tablets, and other personal devices.

Objective 1c: Integrate health and human services information

Integrated health and human services data are necessary for providing person-centered healthcare and human services, and for understanding and addressing social determinants of health at the individual and population levels. Today, there is little integration of data between the various federal, state, territorial, regional and local agencies, and tribes, some of which provide care to the same beneficiaries.^{xxxii} Additionally, there is almost no coordination between agencies in real-time, creating inefficiencies and inhibiting initiatives to address social determinants of health. Furthermore, community-based organizations providing health and human services (e.g., the aging and disability network funded by the Administration for Community Living) lack the requisite health IT infrastructure and adoption support that is needed in order to become fully integrated as a part of the care continuum.

Strategies

- **Strengthen communities' health IT infrastructure** by facilitating bi-directional, secure exchange of data across healthcare and human services settings to improve care and effectively administer social programs.
- **Foster greater understanding of how to use health IT** to assess and address unmet health and social needs for individuals and communities and available health IT solutions that can be utilized for improvement.
- **Capture and integrate social determinants of health data into EHRs** to assist in care processes, such as clinical decision support and referrals, integration of medical and social care, and address health disparities in a manner that is ethical and consistent with routine patient care.

GOAL
2

Enhance the Delivery and Experience of Care



Goal 2: Enhance the Delivery and Experience of Care

Health IT is a vital tool for assessing and improving the quality of healthcare while also improving patient choice and customization of care. However, in the current healthcare system, care choices are largely driven by payer preferences rather than active consumer choice. The provision of service is driven by what is needed for the healthcare provider to be “in-network” rather than what is needed to provide person-centered, evidence-based care. Moreover, data entry and reporting requirements for healthcare providers mean that the experience of care for patients is not always optimal. Advancements in health IT will allow individuals to take more control of the way they receive care and improve the quality and experience of care.

Objective 2a: Ensure safe and high-quality care through the use of health IT

Healthcare providers can develop care plans and deliver high quality, safe, person-centered care when health systems and programs deploy tools that collect, store, and use health data that addresses the unique needs of each individual patient. Achieving this objective will require the application of technologies such as machine learning, improved patient matching, patient safety solutions, and mechanisms for data governance and provenance. It will also require providing care daily and in the event of a public health emergency or disaster.^{xxxiii}

Strategies

- **Optimize care delivery by applying advanced capabilities** like machine learning, evidence-based clinical decision support, and smart dashboards and alerts.
- **Expand care beyond traditional clinical settings** by expanding access to remote monitoring, telehealth, and other mobile and health IT services that can supplement clinical care.
- **Continue efforts to establish identity solutions** that improve patient matching across data systems.
- **Support expanded use of health IT for promoting safer clinical practices** by automating patient safety and rapid reporting features into the health IT infrastructure to prevent and address adverse events, including overprescribing of controlled substances.
- **Use electronic clinical quality measure (eCQM) data** to optimize healthcare providers’ and researchers’ abilities to assess quality and outcomes.
- **Implement mechanisms of data governance and provenance** to promote safety, security, and accountability through all stages of care and uses of health IT.
- **Promote interoperability and data sharing through widely-accepted standards** to ensure health information is freely available across care settings for patient care, public health, research, and emergency and disaster preparedness, response, and recovery.
- **Customize care through precision medicine** to assist in the diagnosis of disease and targeting of treatment to individual patients through the use of data in real-time.

Objective 2b: Foster competition, transparency, and affordability in healthcare

Affordability of healthcare services and treatment remains a key barrier to accessing quality care for many individuals. The availability of information on prices and quality can help reduce barriers to entry and lower costs associated with switching healthcare providers. This encourages competition in healthcare and drives down costs and prices.^{xxxiv} Furthermore, competition addresses the needs of consumers to be able to choose from a variety of health products and services based on which best meet their needs.

Strategies

- **Encourage pro-competitive business practices** that allow individuals to easily use and choose from multiple validated health apps and other health IT tools without special effort.
- **Support efforts to merge administrative and clinical data streams** to have real-time financial data at the point of care.
- **Make care quality and price information available** to individuals in an accessible, easily understandable format.
- **Educate consumers** on the availability of quality and price information and how to use this information to shop for care based on value.

Objective 2c: Reduce regulatory and administrative burden on providers

Clinicians spend significant amounts of time entering data and other documentation in EHRs for the purposes of reimbursement, reporting quality measures, submitting data to clinical registries, public health reporting, and completing prior authorizations and referrals. The paperwork and box-checking associated with these third-party-driven activities is a two-fold threat to delivering high quality care. It leaves healthcare providers feeling burned out, and it reduces the amount of time they have to interact with patients.

Strategies

- **Simplify and streamline documentation** required of healthcare providers at the point of care when using health IT while ensuring that quality standards are upheld.
- **Promote the use of evidence-based automated tools** to streamline provider workflows, encourage electronic provider-to-provider data exchange, and improve efficiency.
- **Monitor the impact of health IT on provider workflows** to better understand and optimize the use of technology in ways that minimize unnecessary steps or negative outcomes for patients.
- **Promote greater understanding of applicable regulations and practices** by providing guidance and other tools to healthcare providers and health IT developers so that compliance is achieved efficiently.
- **Harmonize provider data collection and reporting requirements across** federal agencies.

Objective 2d: Enable efficient management of resources and a workforce confidently using health IT

As a result of previous federal efforts, EHRs and other health IT tools are now widely used across the U.S. However, health IT requires a significant amount of resources to adopt and maintain, which on a day-to-day basis places strain on healthcare providers and other healthcare staff, especially in under-resourced locations. To help reduce health IT expenditures, federal agencies, researchers, payers, and healthcare provider organizations should use innovative approaches to automate care processes through health IT so healthcare providers can spend more time on patient care.

Strategies

- **Streamline processes** to reduce the effort required by healthcare providers and health systems to generate, input, and share health information.
- **Implement education and training programs** to educate and build a strong, cross-functional health IT workforce that can support IT across healthcare settings, especially in rural areas.
- **Continue to invest in the federal health IT workforce** by allocating more resources to train, recruit, and retain workers and to support adequate job opportunities.

GOAL 3

Build a Secure, Data-Driven Ecosystem to Accelerate Research and Innovation



Goal 3: Build a Secure, Data-Driven Ecosystem to Accelerate Research and Innovation

Technology and analytic advancements like ML and forecasting have the potential to transform patient care and improve health. These tools will become essential in the future to support the individualized care of patients and communities. An integrated ecosystem that collects data from multiple sources is critical for these tools to unlock the power of data. Policies that promote use of secure, standards-based APIs can provide access to and use of data in EHRs can empower individuals, healthcare providers, payers, researchers and technology companies to work together on individual and population health research and management.

Objective 3a: Advance individual- and population-level transfer of health data

Access, exchange, and use of data using secure, standardized-based APIs is key to building an integrated ecosystem that can support research, clinical decision making, population health management, and individual access to quality and cost information.

Strategies

- **Improve harmonization of data elements and standards** by creating a common vocabulary set to improve the consistency, integrity, and quality of data and to enable data to be effectively shared between systems using APIs.
- **Bolster secure access to large datasets** of health information for use in quality improvement and outcomes research.
- **Enable individuals to securely provide data** via apps and other health IT for research in a manner that is consistent with individuals' consent preferences to participate in research.
- **Support appropriate use of health and human services data across** federal- and state-level systems to enable population health planning, analysis of quality and patient outcomes across care settings and programs, and clinical research.
- **Foster data governance that supports a secure, unified platform** of researchers, innovators, individuals, payers, and healthcare providers to support innovative uses of shared data.

Objective 3b: Support research and analysis using health IT and data at the individual and population levels

Vast amounts of health data are generated every day at the individual and population levels that can be ethically leveraged for disease prevention, quality improvement, and outcomes research. The volume of data is growing at an astounding rate. Partners should continue to work together to support research and innovation advances.

Strategies

- **Increase use of new technologies and analytic approaches** like ML and predictive modeling to harness the power of integrated data for improving quality, outcomes, and decision making.
- **Build the evidence base on use of health IT for improving quality** through research that investigates the impact of health technologies on patient care, safety, and outcomes.
- **Increase research into targeted therapies** through real-time data and ML intelligence, informed through public health principles, data, and research.
- **Identify and implement health IT opportunities** that support rapid sharing of disease surveillance data

GOAL 4

Connect Healthcare and Health Data through an Interoperable Health IT Infrastructure



Goal 4: Connect Healthcare and Health Data through an Interoperable Health IT Infrastructure

When patients, caregivers, and healthcare providers are equipped with complete and accurate health records, they can establish comprehensive and tailored care plans, make informed decisions about care, and engage in preventive care. An interoperable health IT infrastructure facilitates this by allowing the seamless exchange and integration of health information between platforms using shared data standards and common terminologies.

Objective 4a: Advance the development and use of health IT capabilities

Federal agencies can support greater health IT research and development by reducing barriers to entry for health IT developers. In addition, healthcare providers need clear and easy ways to keep up with the continually evolving digital health landscape, and all stakeholders need to have confidence and trust in health IT for wider use of new capabilities to be achieved.

Strategies

- **Promote a digital economy** that leverages research and development, and that can lead to the development of new business models in healthcare in a manner that protects privacy rights.
- **Reduce financial and regulatory barriers** that are perceived to prevent new health IT developers from entering and competing in the health IT market place.

- **Promote trustworthiness of health IT** through rigorous enforcement of information blocking and privacy and security laws when applicable, and by encouraging consumer reviews and reports on health IT products.
- **Develop frameworks to assess patient and care team use of new technologies** and build an evidence base on the utility and impact of health IT.
- **Support provider adoption and use of health IT** by requiring health IT use to participate in federal programs, investing in health IT, and making resources available to support adoption and use.
- **Enable competition by reducing switching costs** between EHR and other health IT products and systems.
- **Adopt and advance nationally endorsed standards, implementation specifications, and certification criteria** through continued collaboration across public and private sectors.
- **Follow health IT safety and user-centered design principles** in the development and design of solutions to ensure tools are safe, accessible, usable, and address the needs of the users for whom they are developed.

Objective 4b: Establish transparent expectations for data sharing

Congress took an important step to identify and address anti-competitive practices that could impact the access, exchange, and use of electronic health information by passing the 21st Century Cures Act and prohibiting information blocking. The current state of health IT—combined with the structure and conditions of healthcare markets—creates incentives for some actors to pursue and exercise control over information in ways that significantly limit its availability for access, exchange, and use by individuals and healthcare providers. The federal government through continued implementation of this Plan seeks to enable individuals to have seamless, secure, and free access to their electronic health information, which will allow them to more fully participate in the mobile app economy.

Stakeholders, including healthcare providers, healthcare staff, and developers may not understand what actions are required for compliance with the applicable federal and state privacy laws. Stakeholders can support better understanding and transparency by sharing user-friendly compliance resources and by continuing to encourage collaboration between stakeholders on implementation of industry best practices that leverage existing privacy and security principles and frameworks.

Strategies

- **Address information blocking** and other actions taken by healthcare providers, health IT developers, and other regulated entities that limit the access, exchange, and use of electronic health information.
- **Develop resources and communications plans** including guidance for healthcare providers and other staff at healthcare organizations on how to comply with regulations.
- **Support a common agreement for nationwide exchange of health information** that drives interoperability, supports federal agencies' strategies, and promotes effective governance.
- **Promote data liquidity** by working with developers, healthcare providers, payers, and state and federal entities to eliminate unnecessarily restrictive data sharing practices and to use endorsed standards, implementation specifications, and certification criteria.

Objective 4c: Enhance technology and communications infrastructure

The U.S. health IT and communications infrastructures are highly variable. While access to smartphones and broadband is increasing overall, gaps remain for some populations and regions. A disparity in health

IT access and capabilities separates rural and other typically unserved or underserved areas from areas with substantially greater connectivity and service options. Smaller practices and rural healthcare providers are unable to adopt the same advanced health IT capabilities used by larger health systems due to constrained resources. To mitigate these disparities, stakeholders should continue to work together to develop innovative solutions to improve the health IT and communications infrastructure.

Strategies

- **Assess current and expected broadband needs and gaps** in the health and healthcare sectors.
- **Improve and expand affordable broadband access and wireless infrastructure**, especially in rural and underserved areas that are less likely to have access to high speed internet.
- **Deploy cloud-based services** that comply with federal standards to modernize and streamline the way health information is stored and exchanged across the federal government.
- **Promote adoption of infrastructure needed for telehealth** to reach patients outside of traditional care settings.

Objective 4d: Promote secure health information that protects patient privacy

As capabilities for health information access, exchange, and use continue to expand, federal partners must prioritize protecting individuals' health data from misuse and threats like cybersecurity attacks, fraud, and other harms. Additionally, patients and caregivers must be informed to understand how health data may be used and to provide their privacy preferences where appropriate. Keeping health information secure, preventing breaches and fraud, and curtailing other harms is crucial for maintaining patients' trust in their healthcare providers and the health IT they use.

Strategies

- **Integrate privacy and security considerations into the design and use of health IT** to promote a culture of privacy and security and protect individual- and population-level data from cybersecurity attacks, fraud, misuse, and other harms.
- **Implement privacy and security mechanisms as appropriate to the sensitivity of the data** to help protect individuals' health data, including multi-factor authentication and encryption embedded in APIs and other technologies.
- **Increase patient understanding and control over their data** so they can make informed decisions about data exchange and secondary uses of their data.
- **Provide guidance and technical assistance on policies and regulations** at the federal, state, and tribal level that pertain to the secure exchange of health information and enforce such rules.

Appendix A. About this Strategic Plan

In developing this Plan for public comment, ONC collaborated with over 25 federal organizations involved in health IT. ONC conducted research and considered recommendations from its Health IT Advisory Committee. Following public comments, ONC, in collaboration with our federal partners, will consider comments received and publish a final version of this Plan.

This Plan considers the current state of health IT and the ideal future state for patients and caregivers, healthcare providers, payers, researchers, health IT developers, and other stakeholders. It also considers challenges in defining and implementing strategies. The broad scope of this Plan reflects the diverse roles federal government agencies play in health IT.

This Plan is motivated by several factors:

- The constant evolution of healthcare technologies such as mobile and web apps and medical devices
- The movement towards improved access, exchange, and use of electronic health information to inform healthcare decisions at the individual and population level
- Public and private sectors' increasing reliance on interoperable health IT and electronic health information
- Progress and lessons learned from investments in health IT and its use by federal agencies and federally-run care delivery organizations

This Plan is intended to serve as a roadmap for federal health IT initiatives and activities, and as a catalyst for activities in the private sector.

The Plan may be used to:

Prioritize Resources	Within an agency, the Plan is a valuable tool to assess and prioritize potential initiatives, programs, and investments. Using the Plan to prioritize activities can help ensure efficient use of agency resources.
Align and Coordinate Efforts	The Plan is intended to drive alignment of priorities and activities across different agencies. It may help agencies identify opportunities to coordinate and collaborate with public and private partners.
Signal Priorities to the Private Sector	Though the Plan only applies to the actions of federal agencies, the Plan can provide signals to the private sector on the direction of the federal government, which may guide coordination and investment decisions.
Benchmark and Assess Progress	The Plan includes indicators of success that can be used to benchmark and assess progress towards meeting the Plan's mission. These indicators may be used to provide the public with a better understanding of the federal government's direction to improve healthcare supported by the use of interoperable health information.

Appendix B. Measuring and Communicating Progress

By design, this Plan is broad in scope. It includes strategies that span many federal departments, agencies, and offices. Although each federal organization has its own respective mission, authorities, investments, programs, and activities, the federal government's collective mission for health IT is to improve the health and well-being of individuals and communities using technology and health information that is accessible when and where it matters most.

ONC's assessment of this Plan's impact will focus on industry-wide ability and progress toward connecting healthcare and health data. During the implementation of this Plan, ONC will report on health IT progress measures, actions taken, and describe barriers to connect healthcare and health data through an interoperable health IT infrastructure. ONC will communicate industry-wide progress in its [annual report to Congress on health IT adoption and use](#). Through the implementation of this Plan, ONC seeks to support and enable:

- Individual access to their health information on their smartphone so they can shop for and have greater control over their healthcare;
- New business models made possible through the use of APIs that benefit individuals and providers; and
- Established data sharing practices that are in use by the healthcare industry.

Patients, caregivers, healthcare providers, payers, innovators, researchers, and other health and healthcare stakeholders' interests increasingly rely on the electronic access, exchange, and use of health information. They can use health IT as a catalyst to further support:

- Health and wellness;
- The delivery and experience of care; and
- A secure, data-driven ecosystem to accelerate research and innovation.

ONC encourages government and private organizations to consider how health IT and electronic access, exchange, and use of health information contributes to realizing these health and healthcare goals.

ONC, in collaboration with our federal partners, will consider emerging trends and changes in policy and the health IT market during the implementation of this Plan to determine if strategies and measures of progress need to evolve.

ONC will coordinate with federal partners to prioritize and implement critical steps to connect healthcare and health data through an interoperable health IT infrastructure that provides value to health and healthcare stakeholders.

Appendix C. Federal Contributors



Appendix D. List of Acronyms

Acronym	Description
API	Application programming interface
CMS	Centers for Medicare & Medicaid Services
EHR	Electronic health record
FHIR®	Fast Healthcare Interoperability Resources
HHS	Department of Health and Human Services
Health IT	Health information technology
HIPAA	Health Insurance Portability and Accountability Act of 1996
HL7	Health Level Seven International
ML	Machine learning
ONC	Office of the National Coordinator for Health Information Technology

References

- ⁱ “WHO Fact Sheet.” *WHO.int*, World Health Organization, Jun. 2015, https://www.who.int/tb/publications/ehealth_TB.pdf?ua=1.
- ⁱⁱ “Health IT Quick Stats.” *HealthIT.gov*, The Office of the National Coordinator for Health Information Technology, 17 Jun. 2019, dashboard.healthit.gov/quickstats/quickstats.php.
- ⁱⁱⁱ “NHE Fact Sheet.” *CMS.gov*, Centers for Medicare & Medicaid Services, 26 Apr. 2019, www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html.
- ^{iv} Dieleman JL, Squires E, Bui AL, et al. “Factors Associated With Increases in US Health Care Spending, 1996-2013.” *JAMA*. 2017;318(17):1668–1678. doi:10.1001/jama.2017.15927
- ^v Sisko, Andrea M., et al. “National Health Expenditure Projections, 2018–27: Economic and Demographic Trends Drive Spending and Enrollment Growth.” *Health Affairs*, 20 Feb. 2019, www.healthaffairs.org/doi/abs/10.1377/hlthaff.2018.05499.
- ^{vi} Sawyer, Bradley, and Daniel McDermott. “How Does the Quality of the U.S. Healthcare System Compare to Other Countries?” *Peterson-Kaiser Health System Tracker*, Kaiser Family Foundation, 28 Mar. 2019, www.healthsystemtracker.org/chart-collection/quality-u-s-healthcare-system-compare-countries/.
- ^{vii} Thorpe, Kenneth E., et al. “The United States Can Reduce Socioeconomic Disparities by Focusing on Chronic Diseases.” *Health Affairs Blog*, 17 Aug. 2017, <https://www.healthaffairs.org/doi/10.1377/hblog20170817.061561/full/>.
- ^{viii} Murphy, Sherry L., et al. “Mortality in the United States, 2017.” *Centers for Disease Control and Prevention*, National Center for Health Statistics, Nov. 2018, www.cdc.gov/nchs/products/databriefs/db328.htm.
- ^{ix} U.S. Department of Health and Human Services. CDC Director’s Media Statement on the U.S. Life Expectancy [Media statement]. 29 Nov. 2018, <https://www.cdc.gov/media/releases/2018/s1129-US-life-expectancy.html>
- ^x Arias, Elizabeth et al. “United States Life Tables, 2017. National Vital Statistics Report Volume 68, Number 7, June 2019. https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_07-508.pdf.
- ^{xi} “Families in Crisis: The Human Service Implications of Rural Opioid Misuse.” Policy Brief by the National Advisory Committee on Rural Health and Human Services, Jul. 2016. <https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/rural/publications/2016-opioid-abuse.pdf>.

-
- ^{xii} Garfield, Rachel, et al. “The Uninsured and the ACA: A Primer - Key Facts about Health Insurance and the Uninsured amidst Changes to the Affordable Care Act.” *The Henry J. Kaiser Family Foundation*, 25 Jan. 2019, <https://www.kff.org/report-section/the-uninsured-and-the-aca-a-primer-key-facts-about-health-insurance-and-the-uninsured-amidst-changes-to-the-affordable-care-act-how-does-lack-of-insurance-affect-access-to-care/>.
- ^{xiii} Claxton, Gary, et al. “2018 Employer Health Benefits Survey.” *The Henry J. Kaiser Family Foundation*, The Henry J. Kaiser Family Foundation, 18 Mar. 2019, www.kff.org/health-costs/report/2018-employer-health-benefits-survey/.
- ^{xiv} Witters, Dan. “U.S. Uninsured Rate Rises to Four-Year High.” *Gallup.com*, Gallup, 23 Jan. 2019, news.gallup.com/poll/246134/uninsured-rate-rises-four-year-high.aspx.
- ^{xv} Garfield, Rachel, et al. “The Uninsured and the ACA: A Primer - Key Facts about Health Insurance and the Uninsured amidst Changes to the Affordable Care Act.” *The Henry J. Kaiser Family Foundation*, 25 Jan. 2019, <https://www.kff.org/report-section/the-uninsured-and-the-aca-a-primer-key-facts-about-health-insurance-and-the-uninsured-amidst-changes-to-the-affordable-care-act-how-does-lack-of-insurance-affect-access-to-care/>.
- ^{xvi} Coughlin, Teresa et al. “Uncompensated Care for the Uninsured in 2013: A Detailed Examination.” *Kaiser Family Foundation*, May 2014. <https://www.kff.org/uninsured/report/uncompensated-care-for-the-uninsured-in-2013-a-detailed-examination/>.
- ^{xvii} Collins, Sara R., et al. “Americans' Confidence in Their Ability to Pay for Health Care Is Falling.” *To the Point*, The Commonwealth Fund, 10 May 2018, www.commonwealthfund.org/blog/2018/americans-confidence-their-ability-pay-health-care-falling.
- ^{xviii} Baker, Laurence. “Competition keeps health-care costs low, researchers find.” *Stanford Medicine*, Oct. 2019.
- ^{xix} “2019 Broadband Deployment Report.” Federal Communications Commission, 29 May. 2019, <https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf>.
- ^{xx} “Mobile Broadband and Home Broadband 2019.” *Pew Research Center: Internet & Technology*, Pew Research Center, 13 Jun. 2019, www.pewinternet.org/2019/06/13/mobile-technology-and-home-broadband-2019/.
- ^{xxi} “Internet/Broadband Fact Sheet: Demographics of Internet and Home Broadband Usage in the United States.” *Pew Research Center: Internet & Technology*, Pew Research Center, 12 Jun. 2019, www.pewinternet.org/fact-sheet/internet-broadband/.
- ^{xxii} “Internet/Broadband Fact Sheet: Demographics of Internet and Home Broadband Usage in the United States.” *Pew Research Center: Internet & Technology*, Pew Research Center, 12 Jun. 2019, www.pewinternet.org/fact-sheet/internet-broadband/.

-
- xxiii “Closing the Rural Health Connectivity Gap: How Broadband Funding Can Better Improve Care.” Health Affairs Blog. 1 Apr, 2015. doi: 10.1377/hblog20150401.045856
- xxiv HHS Press Office. “OCR Settles First Case in HIPAA Right of Access Initiative, 9 Sep. 2019.
- xxv Health Care Payment Learning & Action Network. “APM Measurement: Progress of Alternative Payment Models 2019 Methodology and Results Report,” 2019. <http://hcp-lan.org/workproducts/apm-methodology-2019.pdf>
- xxvi Health Care Payment Learning & Action Network. “Measuring Progress: Adoption of Alternative Payment Models in Commercial, Medicaid, Medicare Advantage, and Medicare Fee-for-Service Programs,” 22 Oct. 2018
- xxvii Public Law 114-255, 21st Century Cures Act. Enacted: December 13, 2016. <https://www.congress.gov/114/bills/hr34/BILLS-114hr34enr.pdf>
- xxviii Centers for Medicare & Medicaid Services. “CMS Advances Interoperability & Patient Access to Health Data through New Proposals,” Feb. 2019, <https://www.cms.gov/newsroom/fact-sheets/cms-advances-interoperability-patient-access-health-data-through-new-proposals>.
- xxix U.S. Department of Health and Human Services, Office of the National Coordinator for Health IT, Notice of Proposed Rulemaking to Improve the Interoperability of Health Information, 2019, <https://www.healthit.gov/topic/laws-regulation-and-policy/notice-proposed-rulemaking-improve-interoperability-health>.
- xxx “Strategy on Reducing Burden Relating to the Use of Health IT and EHRs, Draft Released for Public Comment.” *HealthIT.gov*, The Office of the National Coordinator for Health Information Technology, 26 Mar. 2019, www.healthit.gov/topic/usability-and-provider-burden/strategy-reducing-burden-relating-use-health-it-and-ehrs.
- xxxi U.S. Department of Health and Human Services Office of Civil Rights, Report to Congress on HIPAA Privacy, Security, and Breach Notification Rule Compliance, Feb. 2019.
- xxxii U.S. Department of Health and Human Services, Office of the Chief Technology Officer. The State of Data Sharing at the U.S. Department of Health and Human Services, Sep. 2018.
- xxxiii DeSalvo K, Lurie N, Finne K, et al. “Using medicare data to identify individuals who are electricity dependent to improve disaster preparedness and response,” *American Journal of Public Health* 104.7 (2014): 1160-1164.
- xxxiv U.S. Department of Health and Human Services, U.S. Department of the Treasury, U.S. Department of Labor. Reforming America’s Healthcare System Through Choice and Competition, 2018.




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Health Information Technology