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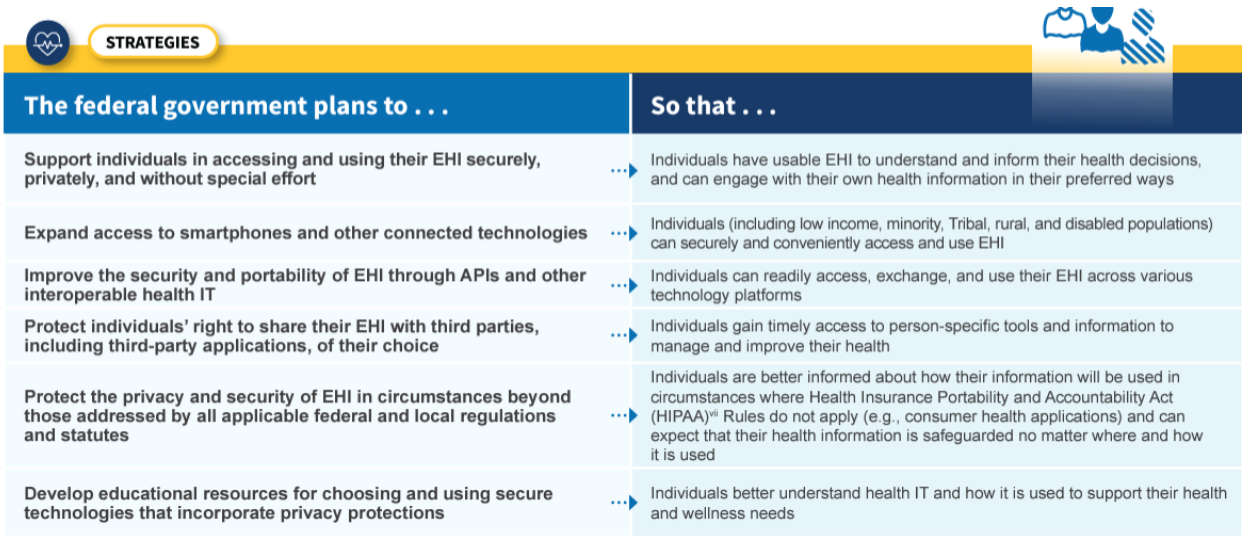
Goal 1: Promote Health and Wellness

1.A Individuals are empowered to manage their health



Patients want easy yet secure access to all healthcare information. The Department of Health and Human Services is well-positioned to provide this access and empower patients with the ability to manage their health across all devices and from anywhere.

To do this, the Department of Health and Human Services should build patient-managed portals that link to all of their healthcare provider records. These portals should be easy to use and navigate and offer a readily understandable overview of an individual's health status. The patient should also be able to clearly identify the next steps in their healthcare journey–right from their personalized portal.

Patient portals could be powered by generative AI and large language model technology. This allows patients to simply input queries, in natural language, and receive the information and insights they require in seconds.

1.B Individuals and populations experience modern and equitable healthcare

Healthcare access and treatments should be personalized for each individual's needs and available points of care. The Department of Health and Human Services must meet and be able to successfully treat and manage every patient's care plan where they are best able to receive care, be it in a hospital or at home.

To address the aging population, for example, the Department of Health and Human Services should equip assisted living and memory care facilities with AI-driven intelligent patient monitoring and surveillance solutions to predict and avert declining conditions. The predictive capabilities of AI can help staff proactively treat patients before their health becomes a crisis. Similar home-based patient surveillance and monitoring solutions should be provided to patients receiving care at home.

The Department of Health and Human Services should look to payers to fund these patient assessment solutions. The solutions should be considered part of healthcare cost-controls and efforts to improve patient outcomes.

Implementing these patient observation and assessment solutions in these environments will ensure that everyone, regardless of their health or social situation, receives the same high standard of proactive care.

Intel works with a diverse ecosystem of hardware manufacturers and software providers to support telemedicine and remote patient monitoring systems that are secure, rely on a flexible IT infrastructure, and deliver cost-effective, real-time decision support intelligence.

1.C Communities are Healthier and Safer

The National Institutes of Health should explore Federated Learning to access and leverage population-level data more easily. Federated Learning is a type of machine learning that enables multiple entities to train a model across a federation of geographically distributed training nodes accessing data locally while ensuring the data and model remain secure.

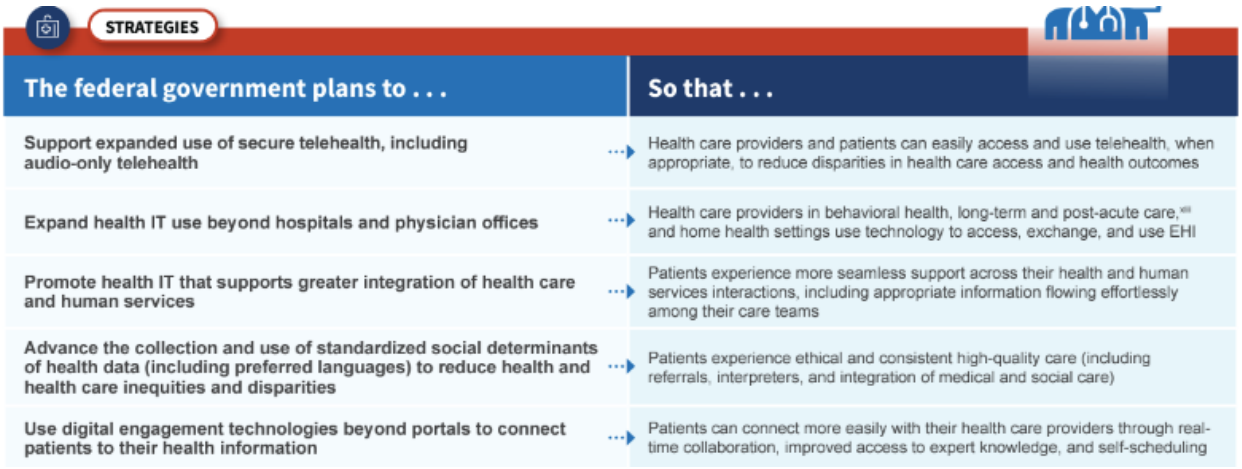
Specifically, the NIH should implement a Federated Data Platform that enables Federated AI to accelerate secure analysis of distributed health data sets without the need to de-identify and move data from individual healthcare systems and research institutions. For example, the NHS in England has launched its own Federated Data Platform effort.

The Department of Health and Human Services already works with public health professionals within communities to respond and recover from emergencies. The DHS should consider complementing these efforts with a system for communities and states to connect near-real time data to national frameworks to monitor and respond at the national level via the Centers for Disease Control, BARCA, Etc.

Finally, algorithms are being developed to enable Clinical Decision Support Systems (CDSS). Population data at the local, state, tribal and territorial level should be leveraged to minimize bias within these algorithms and ensure that they are accurate and trustworthy.

1. Goal 2: Enhance the Delivery and Experience of Care

2.B Patients experience expanded access to quality care and reduced or eliminated health disparities



STRATEGIES	
The federal government plans to . . .	**So that . . .**
Support expanded use of secure telehealth, including audio-only telehealth	Health care providers and patients can easily access and use telehealth, when appropriate, to reduce disparities in health care access and health outcomes
Expand health IT use beyond hospitals and physician offices	Health care providers in behavioral health, long-term and post-acute care,[xiii] and home health settings use technology to access, exchange, and use EHI
Promote health IT that supports greater integration of health care and human services	Patients experience more seamless support across their health and human services interactions, including appropriate information flowing effortlessly among their care teams
Advance the collection and use of standardized social determinants of health data (including preferred languages) to reduce health and health care inequities and disparities	Patients experience ethical and consistent high-quality care (including referrals, interpreters, and integration of medical and social care)
Use digital engagement technologies beyond portals to connect patients to their health information	Patients can connect more easily with their health care providers through real-time collaboration, improved access to expert knowledge, and self-scheduling

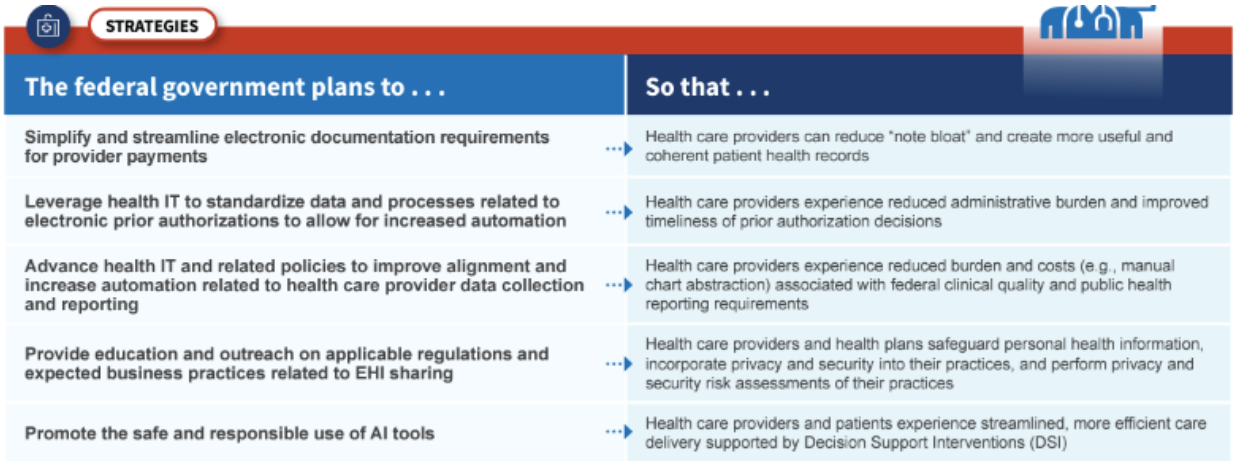
Telehealth has become many patients' preferred method of interacting with healthcare providers. Telehealth allows easy access to clinicians from anywhere and from any device, making it a simple and equitable way for all patients to receive care.

Continuing the effort to provide fair and equitable access to healthcare services will require even further growth to the telehealth model. Fortunately, expanded use of telehealth is largely not constrained by technology and health information systems. However, reimbursement for using telehealth services should be improved and expanded to accelerate the use of these tools, provide care to more patients, and improve patient satisfaction.

As telehealth access expands for patients, audio and video streams should be considered additional and useful data sources for analysis to improve health outcomes. This data can significantly enhance information included in patients' electronic health records and give clinicians a more well-rounded view of a patient's health.

Intel enables telemedicine technology via a diverse ecosystem of manufacturers and software provider partners, powering digital technologies that improve remote patient outcomes and time to diagnosis.

2.D Providers experience reduced regulatory and administrative burden



Many clinicians spend more time dictating notes, answering correspondence, and summarizing clinical encounters than they do seeing patients. This can easily lead to long wait times for service, clinician burnout, and other factors that impede the healthcare experience.

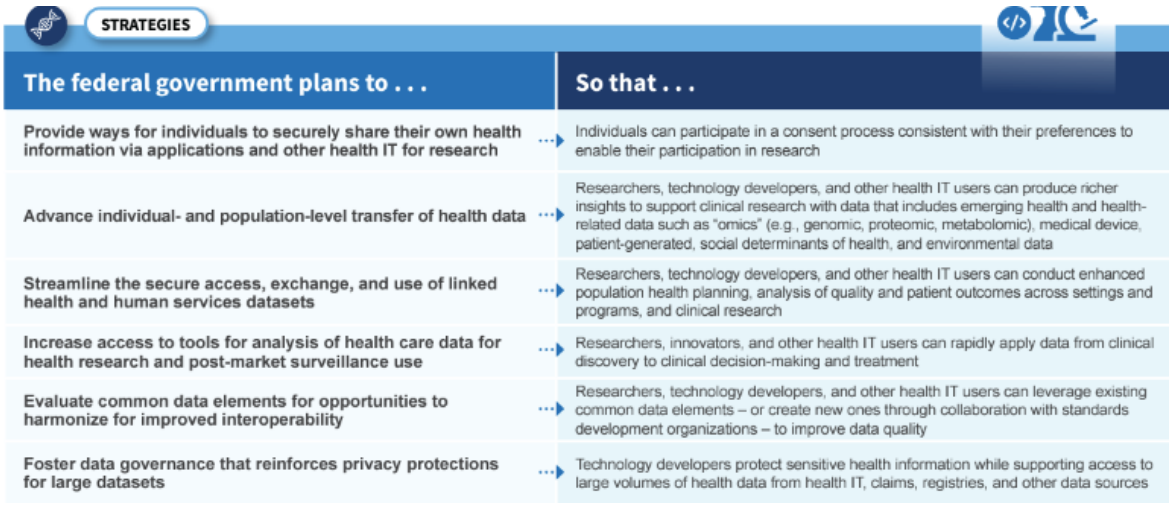
Digital tools such as generative AI and clinical co-pilots can significantly reduce the amount of time clinicians spend on these and other tasks. Indeed, the Department of Health and Human Services should promote the use of these tools to auto-create drafts of clinical text. The auto-created drafts should then be reviewed, edited, and approved by licensed clinicians.

Risk factors to patients are often neglected in routine assessments, yet safeguarding patients' personal health information is a critical component of HIPAA's Patient Privacy Rule. Therefore, considerations around patient risk must be incorporated into all risk assessments.

Likewise, while access to data is crucial for healthcare professionals, a balance between unchecked access and security controls applied to the data must be maintained. Information must be easily accessed by those who need it, so as not to interrupt clinician workflows, and well-protected from those who do not, so as not to compromise patients' rights and security.

2. Goal 3: Accelerate Research and Innovation

3.A Researchers and other health IT users have appropriate access to health data to drive individual and population health improvement.



STRATEGIES	
The federal government plans to . . .	**So that . . .**
Provide ways for individuals to securely share their own health information via applications and other health IT for research	Individuals can participate in a consent process consistent with their preferences to enable their participation in research
Advance individual- and population-level transfer of health data	Researchers, technology developers, and other health IT users can produce richer insights to support clinical research with data that includes emerging health and health-related data such as "omics" (e.g., genomic, proteomic, metabolomic), medical device, patient-generated, social determinants of health, and environmental data
Streamline the secure access, exchange, and use of linked health and human services datasets	Researchers, technology developers, and other health IT users can conduct enhanced population health planning, analysis of quality and patient outcomes across settings and programs, and clinical research
Increase access to tools for analysis of health care data for health research and post-market surveillance use	Researchers, innovators, and other health IT users can rapidly apply data from clinical discovery to clinical decision-making and treatment
Evaluate common data elements for opportunities to harmonize for improved interoperability	Researchers, technology developers, and other health IT users can leverage existing common data elements – or create new ones through collaboration with standards development organizations – to improve data quality
Foster data governance that reinforces privacy protections for large datasets	Technology developers protect sensitive health information while supporting access to large volumes of health data from health IT, claims, registries, and other data sources

AI is a powerful tool that can help improve patient outcomes, but it is not without its faults. There remain concerns around the trustworthiness and lack of regulation or standards around the technology.

To ensure the accuracy, effectiveness, and security of AI, the Department of Health and Human Services must use privacy-preserving Federated architectures for:

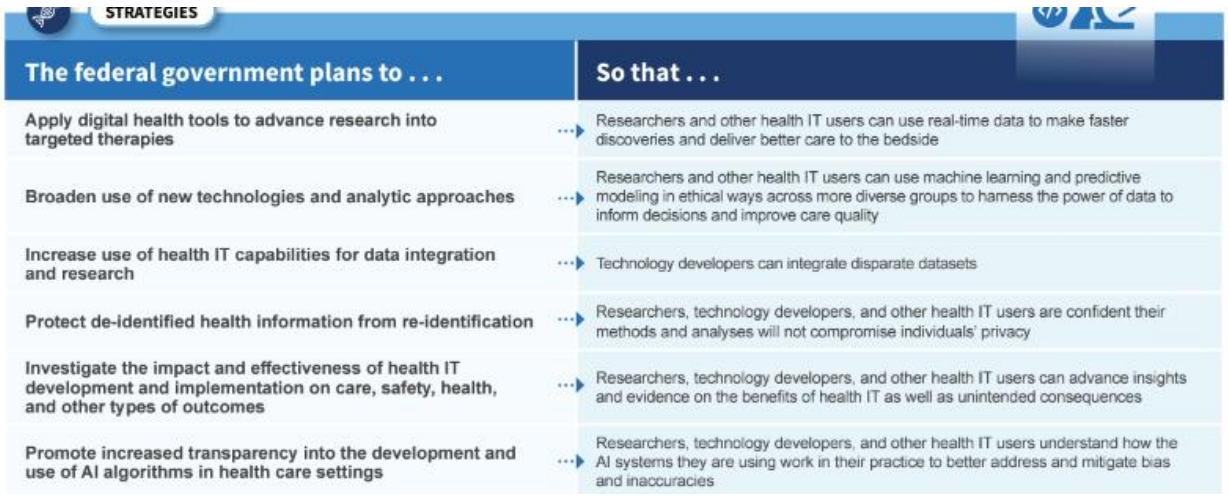
a. Training models on diverse datasets to ensure the models are free of bias.

b. Validating AI models on private datasets to ensure their accuracy.

c. Monitoring and continuous improvement of models for model/data drifts in a federated manner to ensure they continue to be accurate and relevant.

Intel keeps sensitive information secure through federated learning via Intel Software Guard Extensions and Open FL.

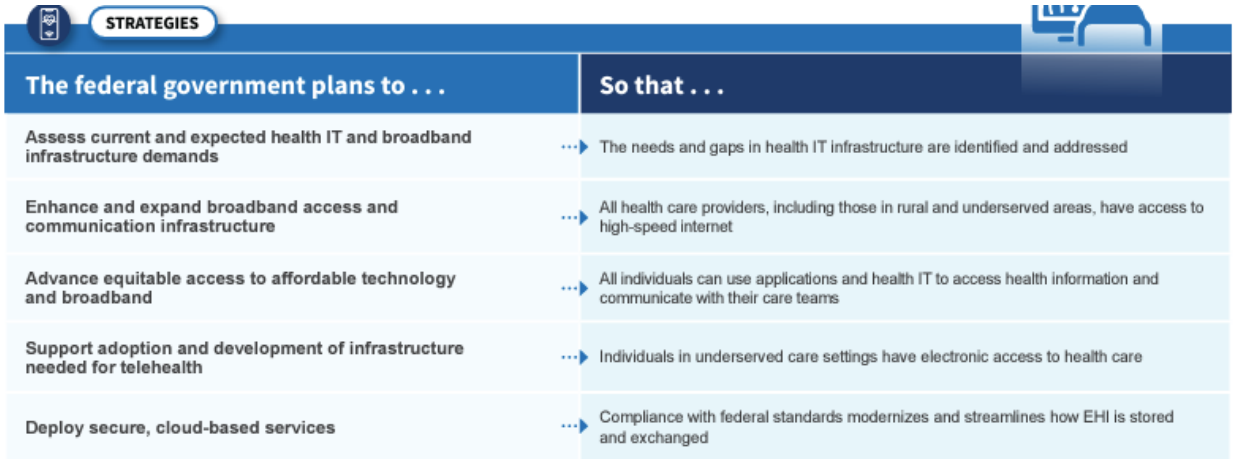
3.B Individual and population-level research and analysis are enhanced by health IT



Bias in AI datasets is not just due to a lack of ethnic or gender diversity. Bias can be introduced through many ways. For example, if all the data used to create an AI model comes from medical imaging devices from a single vendor, the model may be much less accurate when used with data generated by other vendors' medical devices.

Therefore, the Food and Drug Administration should provide clear guidance on data retention policies for models trained on distributed, diverse datasets. Leveraging federated architectures is an ideal solution. Federated architectures decentralize data sets across multiple systems and locations. Model builders may not have access to (or custody of) the underlying data for extended periods of time. This helps minimize bias within the models and makes them more trustworthy.

3.C Researchers advance health equity by using health data that includes underrepresented groups

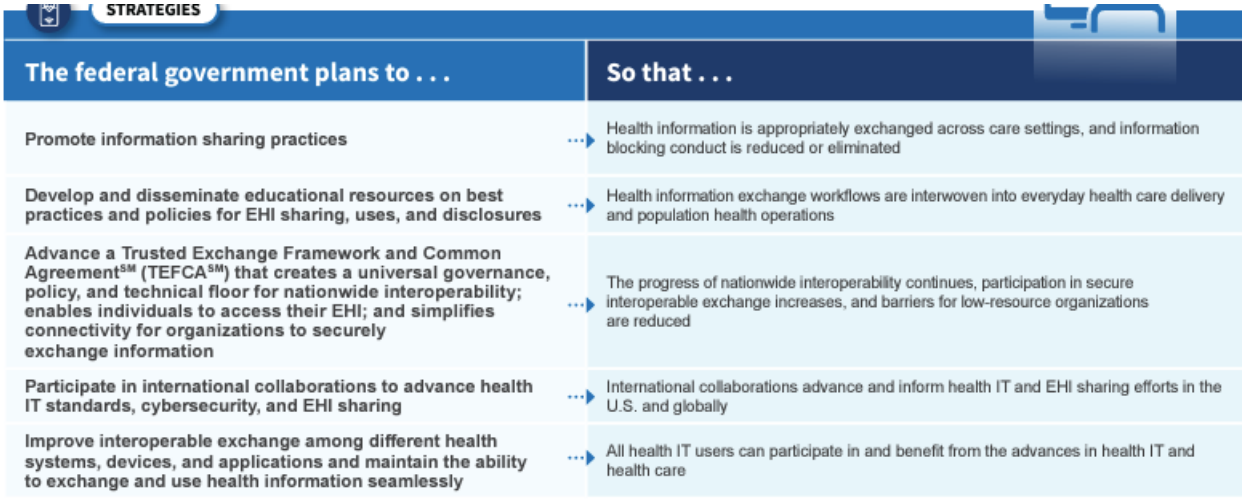


The National Institutes of Health's All of Us Program is designed to "enable more tailored and equitable approaches to care." More than 80% of the enrolled population that is traditionally underrepresented in biomedical research is participating in the program.

Querying of patients' electronic health records data can be beneficial to this and other studies. This can be accomplished via the eHealth Exchange, a large network connecting federal agencies and non-federal healthcare organizations. It allows medical data to be easily yet securely exchanged. The information is used to inform and improve patient care and public health practices.

3. Goal 4: Connect the Health System with Health Data

4.A Health IT users have clear and shared expectations for data sharing

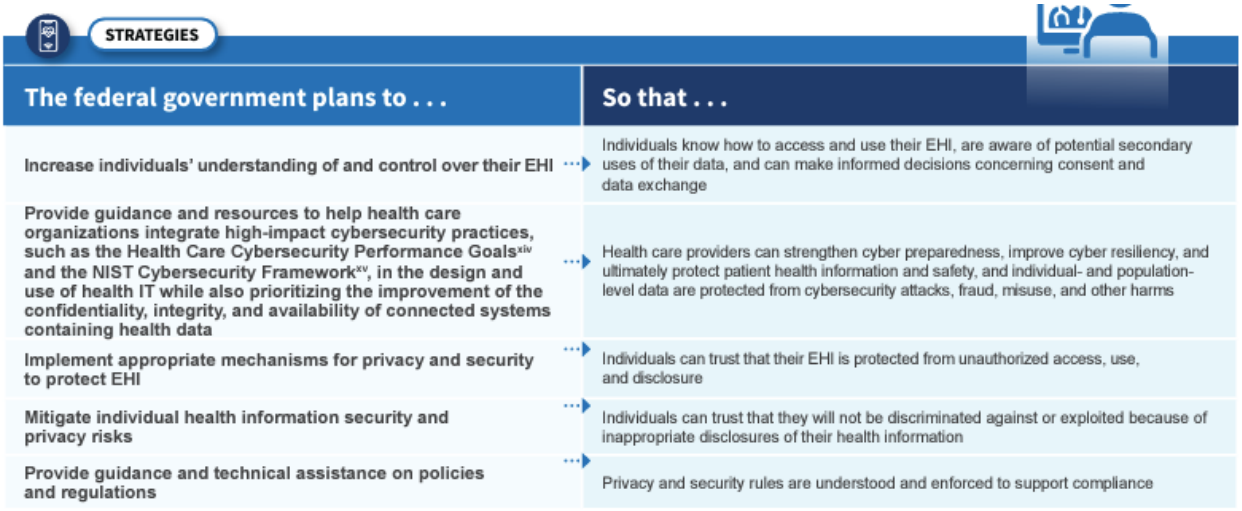


Information access is fundamental to delivering positive patient outcomes. Yet, data security must always be a primary concern.

In many cases, data must be shared across healthcare organizations and between providers and patients. This is where health information exchange networks come into play.

However, federated data–information that is decentralized and distributed across different systems and locations–can be analyzed where it resides. This negates the need for sharing across networks. Those who require and are authorized to access and use information can do so at their discretion. This leads to data collaboration, which can be more secure than data sharing.

4.D Individuals' electronic health information is protected, private, and secure



STRATEGIES

The federal government plans to . . .	So that . . .
Increase individuals' understanding of and control over their EHI	Individuals know how to access and use their EHI, are aware of potential secondary uses of their data, and can make informed decisions concerning consent and data exchange
Provide guidance and resources to help health care organizations integrate high-impact cybersecurity practices, such as the Health Care Cybersecurity Performance Goals[xiv] and the NIST Cybersecurity Framework[xv], in the design and use of health IT while also prioritizing the improvement of the confidentiality, integrity, and availability of connected systems containing health data	Health care providers can strengthen cyber preparedness, improve cyber resiliency, and ultimately protect patient health information and safety, and individual- and population-level data are protected from cybersecurity attacks, fraud, misuse, and other harms
Implement appropriate mechanisms for privacy and security to protect EHI	Individuals can trust that their EHI is protected from unauthorized access, use, and disclosure
Mitigate individual health information security and privacy risks	Individuals can trust that they will not be discriminated against or exploited because of inappropriate disclosures of their health information
Provide guidance and technical assistance on policies and regulations	Privacy and security rules are understood and enforced to support compliance

The Department of Health and Human Services should consider advancements such as Privacy Enhancing Technology (PETs) and Trusted Execution Environments (TEE) that can better protect data in use.

PETs use different methods to protect patients' information. They include:

- Anonymizing patient data
- Replacing personally identifiable information with aliases or pseudonyms
- Encrypting patient data
- Using virtual private networks for data exchange
- Using "synthetic data" --artificially-created data that replaces personally identifiable information.

A TEE is a segregated portion of a computer's memory. It is essentially a secure area of a processor that is blocked from the rest of the CPU. Patient information can be processed in a TEE to keep it confidential and inaccessible from the rest of the computer or network while this data is "in use".

