

**The
National Library of Medicine
Fostering High Reliability
Health Care Systems**

**Patricia Flatley Brennan, RN, PhD
Director
National Library of Medicine**



U.S. National Library of Medicine



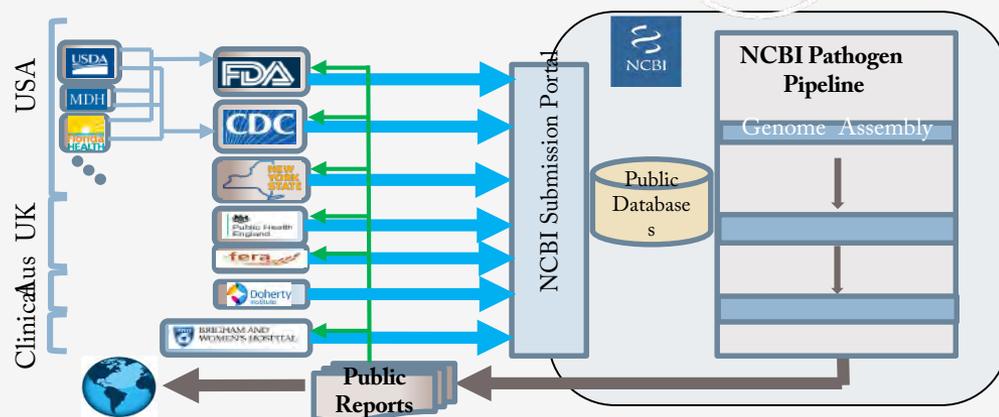
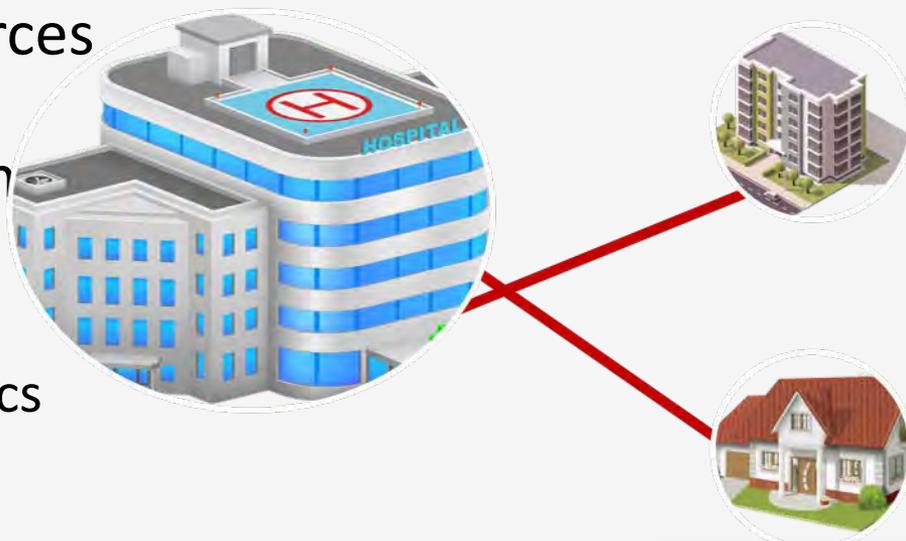


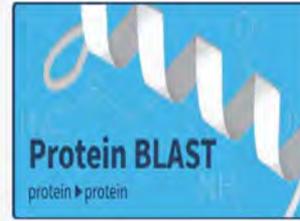
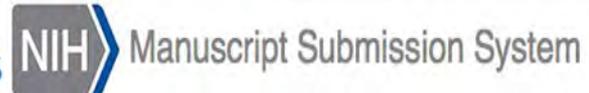
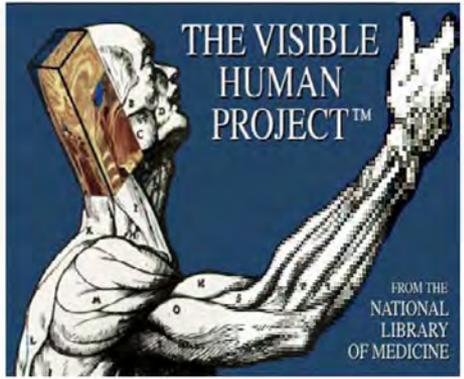
**We're all on a journey together
to improve health and health care!**



How does the NLM contribute to High Reliability Health Care?

- Provide Information Resources
- Foster Standards including SNOMED, LOINC and Common Data elements
- Conduct research
 - Advanced biological analytics
 - Data Science for every day people
 - Uncover patterns from large data clinical and claims sets
- Serve researchers, clinicians, organizations and society





What does the NLM do to enhance High Reliability Health Care?

- Enhance Information Delivery
- Promote access to research data
- Foster Common Data Elements
- Curate Value Sets

Enhance information delivery



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Literature is the primary repository of knowledge

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More Resources

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[Journals in NCBI Databases](#)

[Clinical Trials](#)

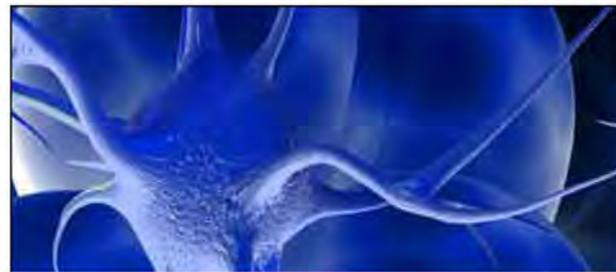
[E-Utilities \(API\)](#)

[LinkOut](#)

NIH Public Access Policy

The NIH Public Access Policy implements Division F Section 217 of PL 111-8 (Omnibus Appropriations Act, 2009). The law states:

*The Director of the National Institutes of Health ("NIH") shall require in the current fiscal year and thereafter that all investigators funded by the NIH submit or have submitted for them to the National Library of Medicine's PubMed Central an **electronic version of their final, peer-reviewed manuscripts** upon acceptance for publication, to be made publicly available no later than 12 months after the official date of publication: Provided, that the NIH shall implement the public access policy in a manner consistent with copyright law.*



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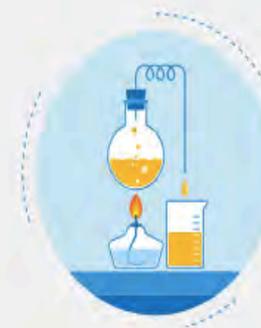


Search

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What is PubMed Labs?

PubMed Labs is a test site where we are *experimenting* with new features and tools that eventually may be incorporated in PubMed, in their current or a revised form based on the input we receive. Please try the site and [let us know](#) what you think.



10

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Relevance based ranking & Snippets



influenza vaccine effectiveness



Search

TEXT AVAILABILITY

- Abstract
- Free full text
- Full text

ARTICLE TYPE

- Review
- Clinical trial

PUBLICATION DATE

- 1 year
- 5 years
- 10 years

Reset all filters

2,361 results

Sort by

Best match

Most recent

Influenza vaccine effectiveness in the 2011-2012 season: protection against each circulating virus and the effect of prior vaccination on estimates.

Ohmit SE, et al. *Clin Infect Dis* 2014.

BACKGROUND: Each year, the US **Influenza Vaccine Effectiveness** Network examines the **effectiveness** of **influenza vaccines** in.... Overall adjusted **vaccine effectiveness** was 47% (95% confidence interval [C...)

Effectiveness of seasonal **influenza vaccine** in community-dwelling elderly people: a meta-analysis of test-negative design case-control studies.

Darvishian M, et al. *Lancet Infect Dis* 2014.

BACKGROUND: The application of test-negative design case-control studies to assess the **effectiveness** of **influenza vaccine**... confounding bias by risk factors is limited by design. We aimed to assess the...

Efficacy and effectiveness of live attenuated **influenza vaccine** in school-age children.

Coelingh K, et al. *Expert Rev Vaccines* 2015 - Review.

Evidence of high efficacy of live attenuated **influenza vaccine** (LAIV) from randomized controlled trials is strong for... that included 'FluMist', 'LAIV', 'CAIV', 'cold adapted **influenza vaccine**', 'live attenuated...



Promote Research Data Access

Federated Data Commons Model

NIH Data Commons



TOPMed



GENOTYPES and PHENOTYPES

Interoperability Tools

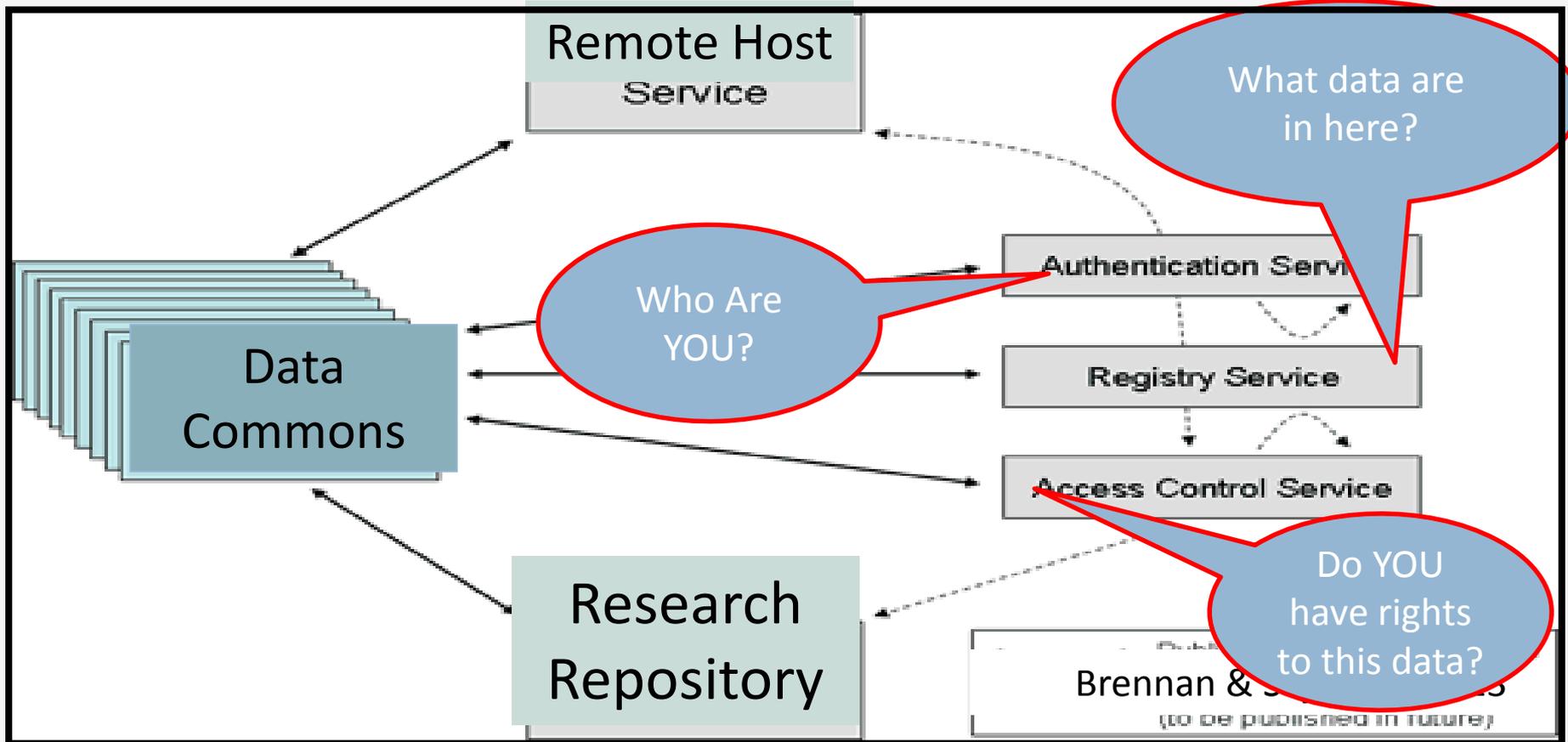
- Common user authentication system
- Shared APIs for data access & computing
- Adoption of FAIR Principles
- Docker containers
- Workflows management
- Digital objects catalogues and IDs
- Data standards and ontologies

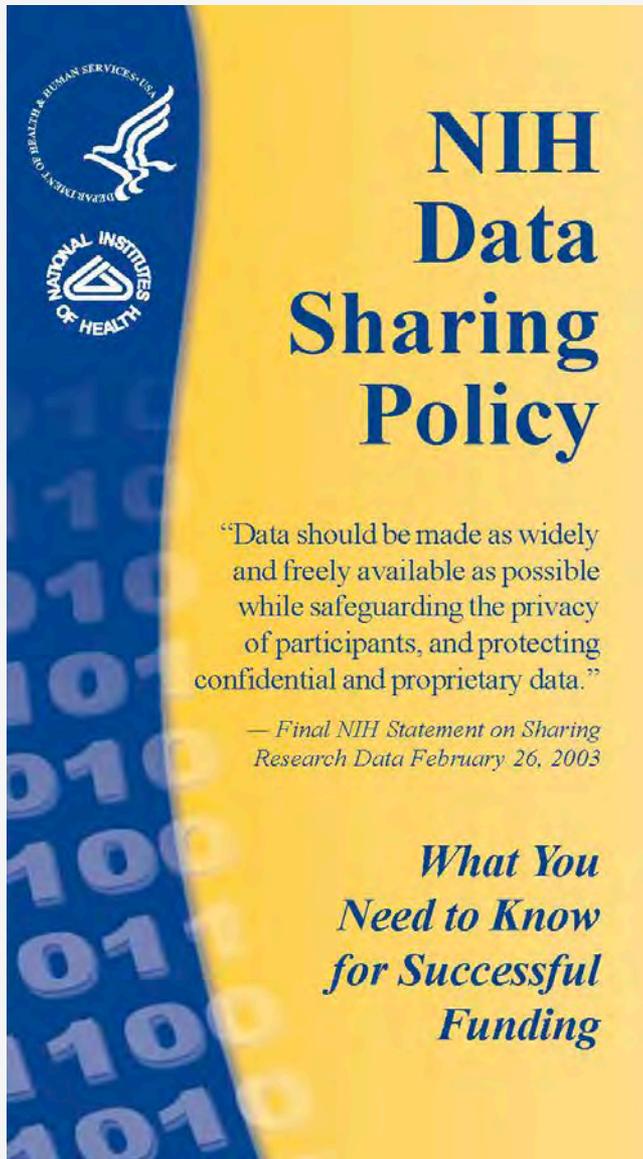
NHGRI Genomic AnVIL



Valentina DeFrancesca, 2018

Manage Access and Identity Management at Scale





NIH Data Sharing Policy

- Data sharing plan in proposals (unscored)
 - Publishing
 - Researcher Efforts
 - Data Enclave
 - Data Archive
 - Mixed Mode
- NIH funds can be used to support data sharing

Data Discovery in PMC & PubMed

ClinicalTrials.gov is a database of privately and publicly funded clinical studies conducted around the world.

Explore 279,151 research studies in all 50 states and in 204 countries.

ClinicalTrials.gov is a resource provided by the U.S. National Library of Medicine.

IMPORTANT: Listing a study does not mean it has been evaluated by the U.S. Federal Government. Read our [disclaimer](#) for details.

Before participating in a study, talk to your health care provider and learn about the [risks and potential benefits](#).

Find a study (all fields optional)

Status ⓘ

- Recruiting and not yet recruiting studies
- All studies

Condition or disease ⓘ (For example: breast cancer)

 X

Other terms ⓘ (For example: NCT number, drug name, investigator name)

 X

Country ⓘ

 X

Search

[Advanced Search](#)



Common Data Elements

 Q Search

The NIH Common Data Elements (CDE) Repository has been designed to provide access to structured human and machine-readable definitions of data elements that have been recommended or required by NIH Institutes and Centers and other organizations for use in research and for other purposes. Visit the [NIH CDE Resource Portal](#) for contextual information about the repository.

The Repository is a platform for identifying related data elements in use across diverse areas, for harmonizing data elements, and for linking CDEs to other existing standards and terminologies, including the value sets in the [Value Set Authority Center \(VSAC\)](#).

Search

Search for individual data elements, by definition, users or sources. Search for sets of data elements ("boards") identified by a particular group for a particular use (e.g particular research solicitation).

Compare / Harmonize

Analyze and resolve differences between data elements. Assure that your forms are using variables that will be usable by certified EHRs.

Create

Draw upon the experience of colleagues and others to design unique data elements and measures.

[Report a problem!](#)

Common Data Elements

Make data findable, interoperable

- Structured human & machine readable definitions of NIH CDEs allowing
 - ◆ Search for individual CDE or sets per programs
 - ◆ Compare & harmonize similar but distinct CDEs
 - ◆ Select or create CDEs with minimal duplication

The screenshot shows the NIH Common Data Element (CDE) Resource Portal. The header includes the NIH logo and 'U.S. National Library of Medicine'. Navigation links include 'Databases', 'Find, Read, Learn', 'Explore NLM', 'Research at NLM', and 'NLM for You'. A search bar is in the top right. The main content area is titled 'Common Data Element (CDE) Resource Portal' and includes a 'Home' link. The page content is organized into sections: 'Home' with a paragraph about CDEs, 'NIH CDE Initiatives' with a paragraph about CDCs, and 'NIH CDE Tools and Resources' with a paragraph about data collections. There are four buttons: 'Summary Table' and 'Subject Areas' under both 'NIH CDE Initiatives' and 'NIH CDE Tools and Resources'. The footer contains copyright information, contact details, and a 'USA.gov' logo.

Value Set Authority

Create profiles of clinical concepts to help measure quality and cost of care

What is a Value Set?

A *list of codes* and their terms, derived from standard vocabularies, that ***define clinical concepts for a particular purpose*** (like diabetes, blood glucose tests, antibiotic prescriptions) to support effective and interoperable health information exchange.

VSAC – Search Value Sets

Welcome Search Value Sets Authoring Collaboration Management Download Help

Search the NLM Value Set Repository

Query: Search

Apply Filters Clear Filters

Narrow search results by selecting from pull-down menus below:

CMS eMeasure (NQF Number) Select

Quality Data Model Category Select

Steward Select

Meaningful Use Measures Select

Code System **LOINC**

Search Results [Export Search Results \(Excel\)](#)

Select a hyperlinked OID to see its value set details.

Matched Value Sets

Download View Toggle Clear Page 1 of 19 20 View 1 - 20 of 365

<input type="checkbox"/>	Name	Type	Code System	Steward	OID
<input type="checkbox"/>	Healthcare Agent or Proxy Choices	Extensional	LOINC	ADVault	2.16.840.1.113762.1.4.1046.35
<input type="checkbox"/>	Advance Care Plan Personal Commitment Level	Extensional	LOINC	ADVault	2.16.840.1.113762.1.4.1046.37
<input type="checkbox"/>	Personal Goal Preference and Priority Choices	Extensional	LOINC	ADVault	2.16.840.1.113762.1.4.1046.38
<input type="checkbox"/>	Heart Rate	Grouping	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.3.1176
<input type="checkbox"/>	Standardized Tools for Assessment of Cognition	Extensional	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.2.1069
<input type="checkbox"/>	Standardized Tools for Assessment of Cognition	Grouping	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.3.1006
<input type="checkbox"/>	HCV Antibody Test	Extensional	LOINC	AMA-PCPI	2.16.840.1.113762.1.4.1056.72
<input type="checkbox"/>	Systolic Blood Pressure	Extensional	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.2.1044
<input type="checkbox"/>	Ejection Fraction	Extensional	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.2.1238
<input type="checkbox"/>	Tobacco Use Screening	Extensional	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.2.1372
<input type="checkbox"/>	Tobacco Use Screening	Grouping	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.3.1278
<input type="checkbox"/>	LDL-C Laboratory Test	Extensional	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.2.260
<input type="checkbox"/>	Macular Exam	Extensional	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.2.1364
<input type="checkbox"/>	Cup to Disc Ratio	Extensional	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.2.1402
<input type="checkbox"/>	Optic Disc Exam for Structural Abnormalities	Extensional	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.2.1403
<input type="checkbox"/>	Optic Disc Exam for Structural Abnormalities	Grouping	LOINC	AMA-PCPI	2.16.840.1.113883.3.526.3.1334

What are Value Sets Used For?

- Clinical Quality Measurement (67%)
- Clinical Data Registries
- Computable Clinical Phenotyping from EHRs
- Public Health Reporting
- Electronic Lab Reporting
- EHR Structured Documents (C-CDA)
- Reportable Conditions Alerts (RCKMS)
- National and International EHR Patient Summary Exchange

CLINICAL QUALITY MEASURE (implementation)

Hemoglobin A1c Test for Pediatric Patients

List of LOINC codes

Tests for HbA1c

Numerator: # diabetic patients [age 5-17] tested for HbA1c

Denominator: # diabetic patients [age 5-17]

Data Element

Type 1 or Type 2 diabetes
[Excludes gestational diabetes]

Requires date of birth

List of SNOMED CT or
ICD-10-CM codes

A Platform for Biomedical Discovery and Data-Powered Health

Strategic Plan 2017-2027



Transforming Information into Discovery



**Accelerate
discovery and
advance health
through data-
driven research**



**Reach more
people in more
ways through
enhanced
dissemination
and engagement**



**Build a
workforce
for data-driven
research and
health**

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**Accelerate
discovery and
advance health
through data-
driven research**

Goal 1

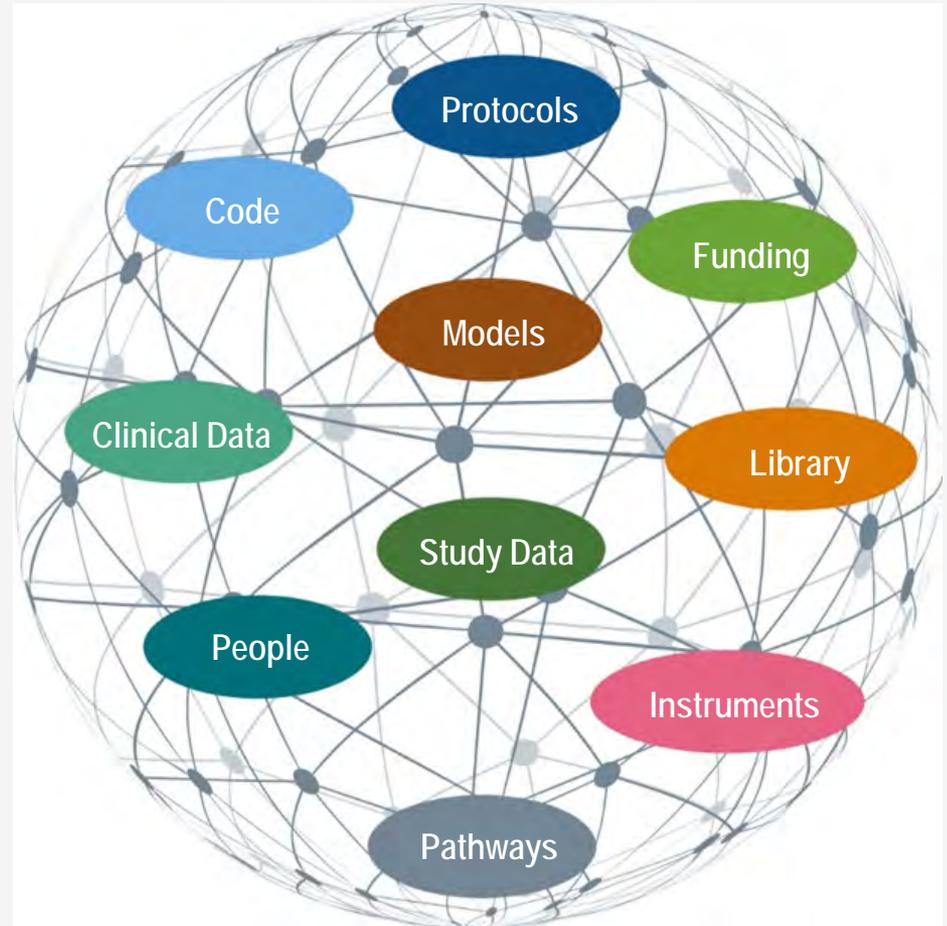
- 1.1** Connect the resources of a digital research enterprise
- 1.2** Advance research and development in biomedical informatics and data science
- 1.3** Foster open science policies and practices
- 1.4** Create a sustainable institutional, physical, and computational infrastructure

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Fostering a ecosphere of discovery

digital research objects





**Reach more
people in more
ways through
enhanced
dissemination
and engagement**

Goal 2

2.1 Know NLM users and engage with persistence

2.2 Foster distinctiveness of NLM as a reliable, trustable source of health information and biomedical data

2.3 Support research in biomedical and health information access methods and information dissemination strategies

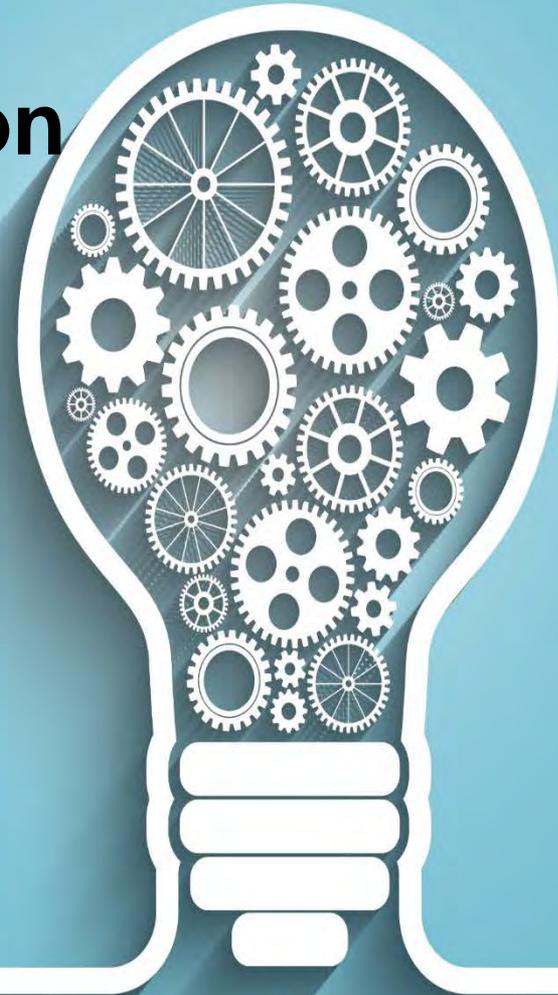
2.4 Enhance information delivery

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The 21st Century Collection

COLLECT | CONNECT | KNOW

- Innovative attribution
- Automated curation
- Personalized presentation & delivery



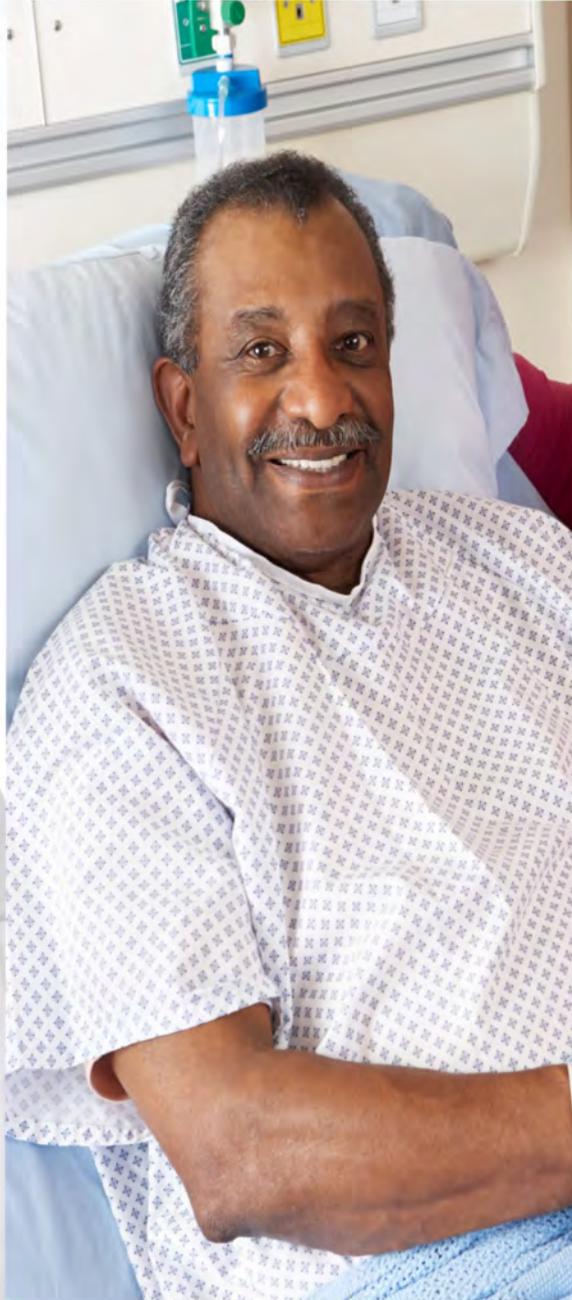


**Build a workforce
for data-driven
research and
health**

Goal 3

- 3.1** Expand and enhance research training for biomedical informatics and data science
- 3.2** Assure data science and open science proficiency
- 3.3** Increase workforce diversity
- 3.4** Engage the next generation and promote data literacy

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Reaching NLM



@NLM_NEWS

@NLMdirector



patti.brennan@nih.gov



The NIH is the center of medical and behavioral research for the Nation---making essential medical discoveries that improve health and save lives.

**Director, National Institute of Nursing Research
National Institutes of Health
Department of Health and Human Services**

Do you have a vision for the future leadership and direction of NIH's National Institute of Nursing Research? Are you a first-rate Scientific Leader seeking a career at one of the preeminent biomedical research institutes in the nation and the world? The Director, National Institute of Nursing Research (NINR) provides leadership, vision, and direction to the Institute and advises the NIH Director and Institute and Center (IC) Directors on the development of NIH-wide scientific initiatives and policy issues related to building the scientific foundation for clinical practice; preventing disease and disability; managing and eliminating symptoms caused by illness; and enhancing end-of-life and palliative care.

We are looking for applicants with a commitment to scientific excellence and the energy, enthusiasm, and innovative thinking necessary to lead within a dynamic and diverse organization. Applicants must possess an RN, a research doctoral degree (Ph.D., or equivalent), in nursing science, omics disciplines, or other relevant biological and/or behavioral science, health services research or social science disciplines. In addition, applicants must have experience and demonstrated ability in the administration and management of a major national research program. The scientific implications of the integral research programs require extensive experience and knowledge of federal research grants administration. Preference will be given to candidates who display multidisciplinary research interest and/or experience in NINR's key priorities, as outlined in the vacancy announcement.

The successful candidate for this position will be appointed at a salary commensurate with experience and accomplishments, and full Federal benefits, including leave, health and life insurance, retirement and savings plan (401K equivalent) will be provided.

If you are ready for an exciting leadership opportunity, please see the detailed vacancy announcement at

<http://www.jobs.nih.gov/vacancies/executive.htm>

Applications are due by 11:59 p.m., ET, on Tuesday, November 13, 2018.

Please contact Will Hennings at SeniorRe@od.nih.gov for questions and/or additional information.

DHHS AND NIH ARE EQUAL OPPORTUNITY EMPLOYERS



U.S. National Library of Medicine



- NLM's role in advancing technology, biomedical informatics and tools to supporting nurse
- practice and education. One of the initiatives of this committee is the understanding of technology as an infrastucture to addres Secretary Azar's objectives in healthcare
- National Advisory Committee on Nursing Education and Practice goals:
 - transition of the health care system. The addressed areas identified are value-based care; team
 - based care; IT-including telehealth, data analytics and distance learning; opioids and scope of
 - practice. The scope of nurse practice will address licensing, priveleges, improving national
 - standards based on evidence- culminating in supporting nursing to practice to the full extent of the law at all levels of licensure

Key points

- Archiving the literature
- Promoting access to the literature
- Data
- Training
- NLM strategic plan