Office of the National Coordinator for Health Information Technology

Office of Technology Update - Health IT Innovation

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Agenda

- ONC's role in Health IT innovation
- Leading Edge Acceleration Project (LEAP) in Health IT
  - 2018 – 2022
- LEAP Area of interest for 2023
  - Advanced FHIR capabilities
  - Data quality

ONC's Role in Health IT Innovation

Goals of 21st Century Cures Act

- Increase Innovation and Competition by giving patients and health care providers safe and secure access to health information and to new tools, allowing for more choice in care and treatment.

HITECH Act

- The Strategic Health IT Advanced Research Projects (SHARP) Program helped advance health IT standards for patient access to electronic medical records
  - Security of Health Information Technology (SHARPS): led by University of Illinois at Urbana-Champaign
  - Health Applications and Network Design (SMART) : led by Harvard University,
  - Secondary use of EHR Information (SHARPn) : led by Mayo Clinic of Medicine
  - Patient-centered Cognitive Support (SHARPc) : led by University of Texas, Houston

Office of Technology - Investing in Innovation

Strategic Initiatives Branch

Anastasia Perchem,
Chief

The **Leading Edge Acceleration Project (LEAP) in Health IT Program**, created in 2018, seeks to address emerging challenges that inhibit the advancement of interoperable health IT. Project solutions are expected to further a new generation of innovative health IT and inform the development, implementation, and refinement of standards, methods, and techniques for overcoming major barriers in health information access, exchange, and use.

- Two areas of interest
- New areas of interest identified annually
- One award per area of interest
- Up to $1M per Cooperative Agreement award
- Period of Performance: 2 years

LEAP in Health IT Areas of Interest 2018-2022

2018	2019	2020	2021	2022
• **Area 1:** Expanding the scope, scale, and utility of population-level data-focused application programming interfaces (APIs) • **Area 2**: Advancing Clinical Knowledge at the Point of Care	• **Area 1:** Standardization and Implementation of Scalable Health Level 7 International's (HL7®) Fast Healthcare Interoperability Resources (FHIR®) Consent Resource • **Area 2:** Design, Develop, and Demonstrate Enhanced Patient Engagement Technologies for Care and Research	• **Area 1:** Advancing Registry Infrastructure for a Modern API-based Health IT Ecosystem • **Area 2:** Cutting Edge Health IT Tools for Scaling Health Research • **Area 3:** Integrating Health Care and Human Services Data to Support Improved Outcomes	• **Area 1:** Referral Management to Address Social Determinants of Health Aligned with Clinical Care • **Area 2**: Health IT Tools to Make Electronic Health Records (EHRs) Data Research – and Artificial Intelligence (AI)-Ready	• **Area 1:** Address Health Equity and Social Determinants of Health (SDOH)Through Innovative, Open-Source Technology Tools, and Electronic Health Records (EHRs) • **Area 2:** Demonstrate the Use of Equity-Enhancing Patient-Generated Health Data (PGHD) for Clinical Care and Research

https://www.healthit.gov/topic/leading-edge-acceleration-projects-leap-health-information-technology-health-it

2018 LEAP

Area of Interest 1

- Goal: Pop Health on FLAT FHIR: A SMART Approach to Universal Healthcare Reporting
- Lead: Boston Children's Hospital
- Project Dates: Planned completion in 2023
- Outcomes:
  - Early design and implementation of Bulk Data Access Implementation Specification for exchange of data between provider and payer use case
- https://smarthealthit.org/smart-hl7-bulk-data-access-flat-fhir

Area of Interest 2

- Goal: Leveraging Health IT Architecture to Advance Clinical Knowledge and Care Coordination
- Lead: MedStar Health Research Institute
- Project Dates: Completed in 2020
- Outcomes:
  - Enhanced the American College of Cardiology's Atherosclerotic Cardiovascular Disease (ASCV) risk estimator tool and developed SMART on FHIR application integrated with their EHR
- https://www.healthit.gov/buzz-blog/health-innovation/mobilizing-a-million-hearts-through-smart-on-fhir-2

2019 LEAP

Area of Interest 1

- Goal: Standardization of Fast Healthcare Interoperability Resources Consent Resource
- Lead: San Diego Health Connect
- Project Dates: Completed in 2021
- Outcomes:
  - Developed proof of concept for scalable and decentralized architecture for managing and enforcing computable patient consents
- https://www.healthit.gov/buzz-blog/health-it/san-diego-health-connect-takes-a-big-leap-over-the-barrier-of-consent-management

Area of Interest 2

- Goal: Design and demonstrate enhanced patient engagement technologies for Care and Research
- Lead: University of Texas at Austin, Austin, TX
- Project Dates: Completed in 2022
- Outcomes:
  - Developed FHIR based App informed through a methodology of community engagement and human-centered design
- https://www.healthit.gov/buzz-blog/health-innovation/where-apis-meet-health-equity-by-design-introducing-the-fhiredapp-health-innovation

2020 LEAP

Area of Interest 1

- Goal: Advance registry infrastructure for API-based system
- Lead: Chesapeake Regional Information System for our Patients and American College of Cardiology
- Project Dates: Planned completion in 2023
- Outcomes:
  - Development of data sharing functionality for health System participating in National Cardiovascular Disease Registries

Area of Interest 2

- Goal: Developing Cumulus Platform, for SMART learning healthcare system
- Lead: Boston Children's Hospital, Yale University and Yale-New Haven Health
- Project Dates: Planned completion in 2023
- Outcomes:
  - Develop a platform that leverages bulk data for research, including tools that allow users to annotate data for analytics, de-identify data, and query cohorts
- https://smarthealthit.org/cumulus-a-universal-sidecar-for-a-smart-learning-healthcare-system/

2020 LEAP

Area of Interest 2

- Goal: FHIR Factories: Digital architecture to scale health research
- Lead: MedStar Health Research Institute, Georgetown University Medical Center and HealthLab
- Project Dates: Completed in 2022
- Outcomes:
  - Developed tools for research using FHIR data and an automated framework for iterative extraction, transformation and integration using FHIR APIs.

Area of Interest 3

- Goal: Integrating data to advance person-centered planning outcomes, and value-based payment models
- Lead: Missouri Dept. of Mental Health
- Project Dates: Completed in 2022
- Outcomes:
  - Improved data sharing among through adoption of the electronic Long-Term Services and Supports standard.
- https://www.healthit.gov/buzz-blog/health-it/improving-person-centered-care-in-home-and-community-based-services-with-fhir

2021 LEAP

Area of Interest 1

- Goal: Referral Management to address SDOH aligned with clinical care
- Lead: University of Texas at Austin
- Project Dates: Planned completion in 2023
- Outcomes:
  - Develop a social services referral system into electronic health records in Federally Qualified Health Centers using FHIR
- https://www.healthit.gov/buzz-blog/health-it/fhired-ship-an-approach-to-health-equity-by-design-for-21st-century-healthcare

Area of Interest 2

- Goal: Tools to make EHR data research and Artificial Intelligence (AI) ready
- Lead: DARTNet Institute
- Project Dates: Planned completion in 2023
- Outcomes:
  - Improve semantic Interoperability for Electronic Health Data using semantic web technologies
- https://github.com/cloudprivacylabs/leap-sh

2022 LEAP

Area of Interest 1

- Goal: Address health equity and SDOH through tools and EHRs
- Lead: AllianceChicago
- Project Dates: Planned completion in 2024
- Outcomes:
  - This project will leverage FHIR to enable service providers to integrate services to better address social determinants of health (SDOH) for individuals experiencing homelessness

Area of Interest 2

- Goal: Use equity-enhancing patient-generated health data for clinical care and research
- Lead: MedStar Health Research Institute
- Project Dates: Planned completion in 2024
- Outcomes:
  - Develop the infrastructure and standards-based patient-generated health data (PGHD) technologies needed for scalable use of equity enhancing PGHD for clinical care and research from the point-of-care to the researcher.

To Recap - LEAP Areas of Interest 2018-2022

2018	2019	2020	2021	2022

• **Area 1:** Pop Health on FLAT FHIR: A SMART Approach to Universal Healthcare Reporting
• **Area 2**: Leveraging Health IT Architecture to Advance Clinical Knowledge and Care Coordination
	• **Area 1:** Standardization of FHIR Consent Resource
	• **Area 2:** Design and demonstrate enhanced patient engagement technologies for Care and Research
		• **Area 1:** Advance registry infrastructure for FHIR-based API system
		• **Area 2:**
		  • Developing Cumulus Platform, for SMART learning healthcare system
		  • FHIR Factories: Digital architecture to scale health research using FHIR
		• **Area 3:** Integrating data to advance person-centered planning outcomes, and value-based payment models using eLTSS
			• **Area 1:** Referral Management to address SDOH aligned with clinical care
			• **Area 2**: Tools to make EHR data research and Artificial Intelligence (AI) ready
				• **Area 1:** Address Health Equity and Social Determinants of Health (SDOH)Through Innovative, Open-Source Technology Tools, and Electronic Health Records (EHRs)
				• **Area 2:** Demonstrate the Use of Equity-Enhancing Patient-Generated Health Data (PGHD) for Clinical Care and Research

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LEAP in Health IT Areas of Interest 2023

Area of Interest 1

Exploring the use of advanced FHIR capabilities

Goal: Accelerate the adoption readiness of existing, advanced FHIR capabilities developed by the health IT community and demonstrate the value of health IT technology to solving complex problems in health care.

Area of Interest 2

Improving data quality of USCDI data elements

Goal: Assess the quality of USCDI data elements that are collected, accessed, exchanged, and used by various health care actors (e.g., EHRs, Health Information Networks, Laboratory Systems, etc.) and health IT systems and implement a potential non-proprietary solution to improve data quality.

Application Submission Date: June 12, 2023

https://www.healthit.gov/topic/onc-funding-opportunities/leading-edge-acceleration-projects-leap-health-information

Discussion

Office of the National Coordinator for Health Information Technology

Contact ONC

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