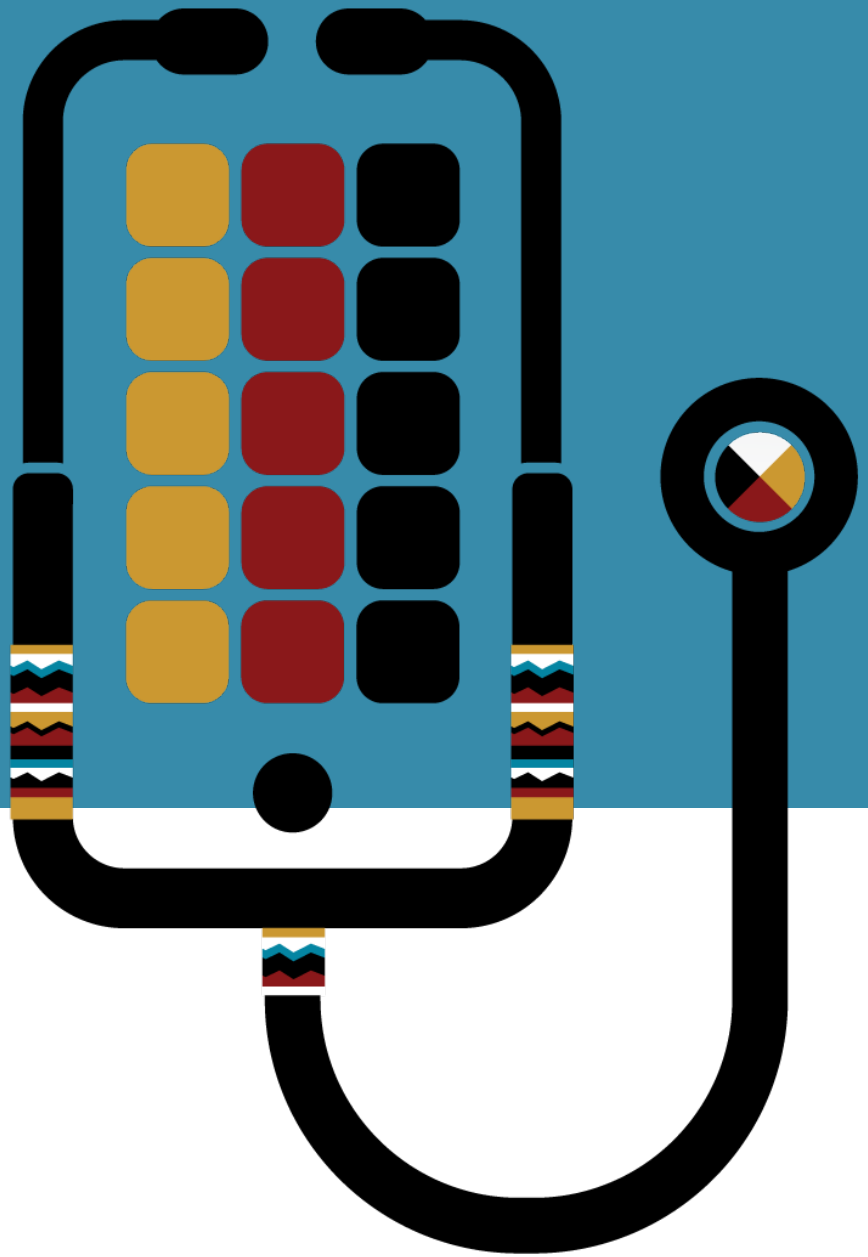


HHS // IHS

HEALTH INFORMATION TECHNOLOGY MODERNIZATION PROJECT

Project Final Report | 9 September 2019

Presentation Goals

- Review Project Overview and Approach
- Understand Project Findings and Future State HIT Vision
- Present Strategic and Operational Recommendations

Project Purpose and Objectives

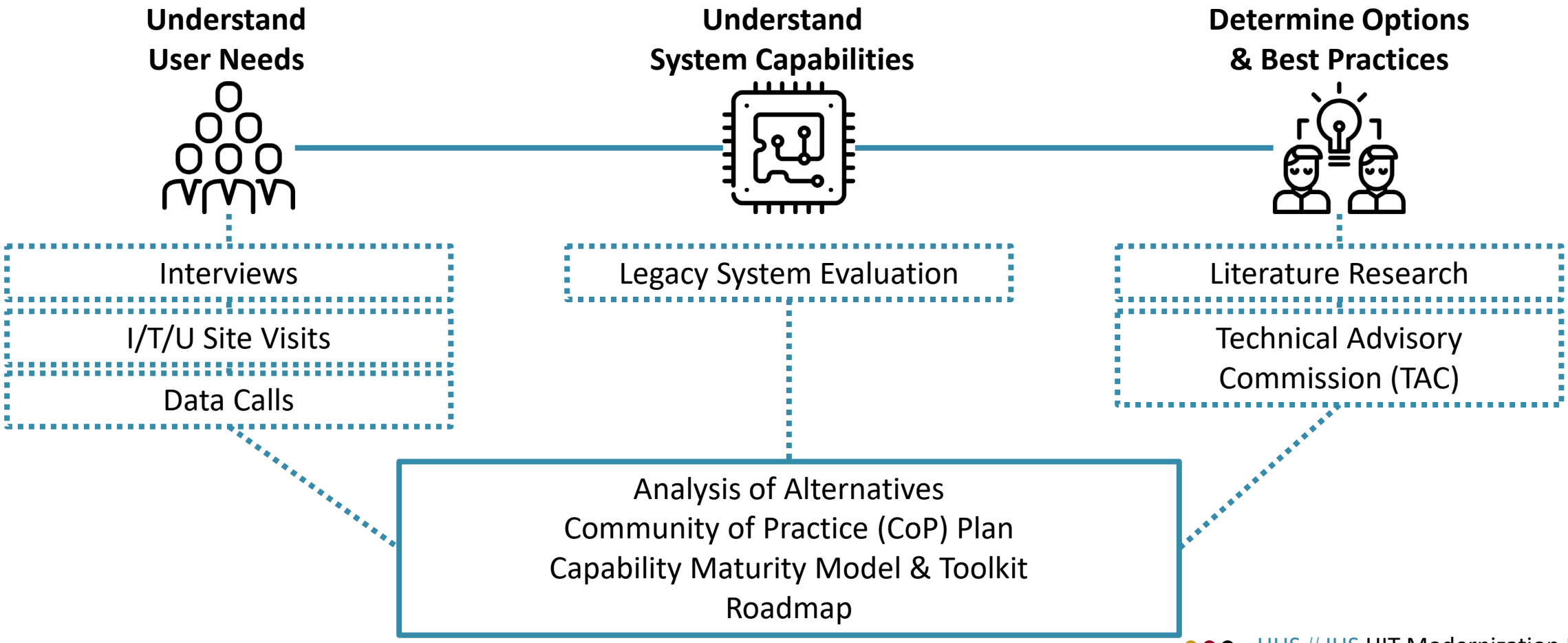
*"IHS must create and execute a strategy to modernize its EHR system and the IT systems necessary to support it"**

Context	Project Objectives
• IHS serves **2.6 million** American Indian and Alaska Native people • **Underfunding of HIT** within IHS has hindered the organization's ability to keep pace with user requirements and market solutions • **The VA's decision to migrate away from VistA is** a catalyst for IHS to investigate EHR alternatives • **IHS must act swiftly** to modernize its aging HIT system	Leverage internal and external expertise to: • **Evaluate the current state of HIT** across the I/T/U • **Identify and evaluate alternative EHR solutions** for HIT modernization • **Produce recommendations** regarding people, process and technology • **Define a roadmap** to implement these recommendations

*As stated in the Background Statement of the IHS HIT Modernization Research Project RFQ from August 2018

Project Approach

Using a Human Centered Design methodology, the project team developed and implemented the following three-pronged approach to better understand the current state of the IHS HIT systems and the unique needs of the users that it serves.

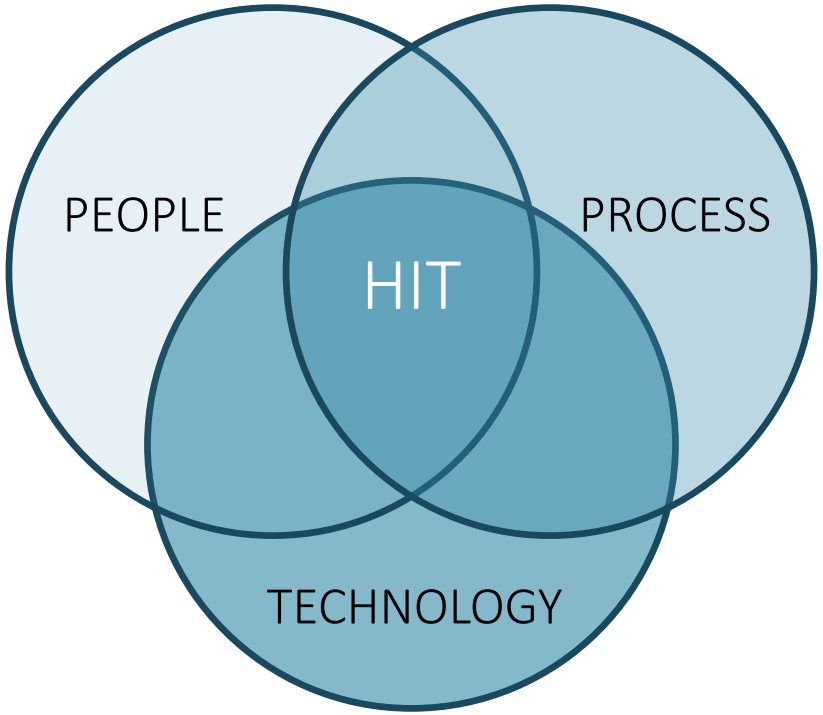


Project Guiding Principles

The Modernization Project provides a comprehensive assessment of the **people, processes, and technology** that comprise the existing IHS HIT system, the Resource and Patient Management System (RPMS)

The team was committed to the following principles:

- **Honor and respect** tribal communities and stakeholders
- **Be people-centered**
- **Utilize impactful, community-serving processes**
- **Be data-driven** in all decision making



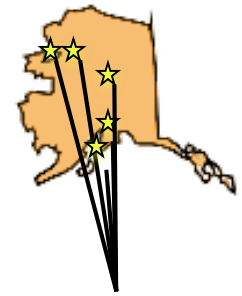
Breadth of Data Collected

25
Site visits to I/T/U facilities to engage with
450
site personnel

13
Virtual focus sessions with members of national workgroups

5
Conferences, national and Tribal

1,877
Responses from
240
I/T/U facilities through a Data Call and emails from site personnel



ALASKA AREA
- Alaska Native Medical Center
- Chief Andrew Isaac Health Center
- Dena'ina Wellness Center
- Maniilaq Health Center
- Sally Harvey Memorial Center

PORTLAND AREA
- Native American Rehabilitation Association of the Northwest

BILLINGS AREA
- Missoula Urban Indian Health Center
- Northern Cheyenne Service Unit

GREAT PLAINS AREA
- Pine Ridge Service Unit
- Rapid City Service Unit

BEMIDJI AREA
- Forest County Potawatomi
- Grand Traverse Band of Ottawa & Chippewa Indians

CALIFORNIA AREA
- Round Valley Indian Health Center

NAVAJO AREA
- Crownpoint Service Unit

PHOENIX AREA
- Phoenix Indian Medical Center
- Whiteriver Service Unit

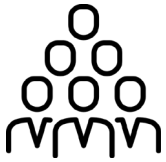
TUCSON AREA
- Pascua Yaqui Yoeme Health Center

ALBUQUERQUE AREA
- Albuquerque Indian Health Center
- Jicarilla Service Unit
- Zuni Comprehensive Health Center

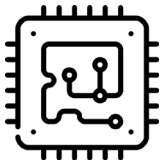
NASHVILLE AREA
- Cherokee Indian Hospital Association
- Kanvwotiyi Regional Treatment Center
- Unity Healing Center

OKLAHOMA CITY AREA
- Muscogee Creek Nation
- White Eagle - Ponca Nation

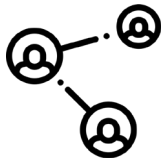
Current State Overview



RPMS users express frustration with their disjointed User Experience, limited functionality across multiple areas of care, lack of training, and under resourced facilities



The aging RPMS code will be cannot be supported over the next decade nor sustained with the current hardware and network.

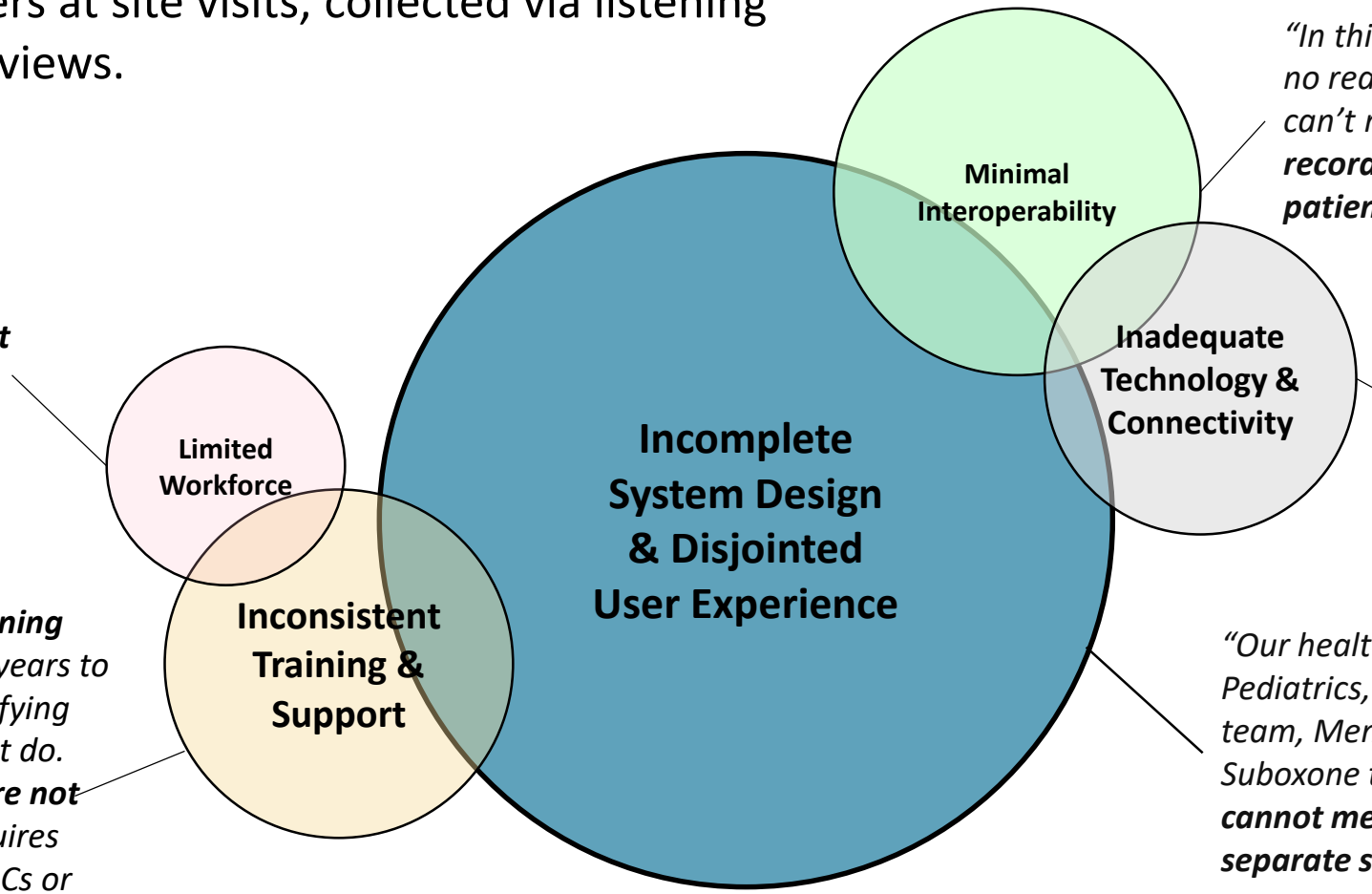


Lack of Inter-and intra-operability negatively impacts the patient experience and hinders provider productivity.

Inadequate reporting functionality negatively impacts both public and population health analytics as well as funding for facilities that rely heavily on grant funding.

Current State – User Perspective

Five high-level themes evolved from the insights collected from users at site visits, collected via listening sessions and interviews.



*"In this modern world there is absolutely no reason why an out of area tribal person can't receive care from our facility. **The record needs to revolve around the patient**."*

*"Our Clinical Application Coordinator (CAC) is great, but she's just one person. **We need at least three of her**!"*

*"**The system is so slow**, or providers/nurses **get 'kicked' out of the system** in the middle of a note."*

*"**[RPMS] has a high learning curve** and takes several years to get to the point of identifying all that it can and cannot do. The **written resources are not comprehensive** and requires reaching out to other CACs or consultants."*

*"Our health system currently includes Medical, Pediatrics, Visiting Nurses, Hep C Treatment team, Mental Health, Chemical Dependency, Suboxone treatment, and Dental. **RPMS cannot meet the demands of all of these separate services**."*

Note: the diagram is scaled to reflect volume of comments for each theme

Current State – User Perspective

A Data Call was conducted and received responses from 1,381* HIT end users. Results showed that:

42% of users are either somewhat or very ***dissatisfied*** with how well RPMS helps them do their jobs	**60%** of users think RPMS ***needs significant improvements***
60% of RPMS sites feel they are ***far from having the necessary hardware*** to complete their work	**93%** of all users agree that ***now is the time*** for IHS to deploy a new HIT system

Data Call Takeaways

- Capitalize on the desire for change and readiness of end users
- Address technological infrastructure concerns as part of the modernization effort
- Focus modernization on improving end user experience in 3 areas:
  1. Interoperability
  2. Reporting
  3. Usability and data entry

*Of 1,381 responses, 1,037 respondents answered all questions within the Data Call

Current State – Technical Review of RPMS

A technical review of RPMS found that:

- **RPMS code will be unsupportable** over the next decade
- The current **user experience is disjointed** across several applications and user experience design leads to a **high and constant risk of user error**
- The system **cannot be reliably and sustainably supported by the available infrastructure** (hardware, network)
- **Support, training**, and adequately skilled resources **are insufficient**

Domain	Area	Assessment
Infrastructure & Maintenance	Hardware	Operative
	Network	Inadequate
	Software Maintenance	Inadequate
	Database Development & Support	Inadequate
	Current Overlap Between VistA & RPMS	Operative
Architecture	RPMS Code	Inadequate
	Data Sharing & Portability	Inadequate
	Interoperability	Inadequate
	Health Information Exchange	Inadequate
	Application Integrations	Inadequate
	Extensibility	Inadequate
Organization	Support	Inadequate
	Training	Inadequate
	Availability of Skills/Expertise	Inadequate

IHS HIT Modernization Options

The Analysis of Alternatives (AoA) identified and assessed four high-level options for IHS HIT modernization. ***Stabilizing RPMS (Option 1) is a foundational requirement but falls short of a modernized HIT solution. However, all these options, including Stabilization, require additional funding.***

1 Stabilize RPMS

- Maintain current technical architecture and deployment approach
- Enhance applications as needed and as resources allow, including new graphical user interfaces
- Improve training and support resources to optimize utilization

2 Renew RPMS

- Apply state-of-the-art methods to "wrap & renew" legacy apps with APIs/service tier
- Allow creation of new functions and user interfaces using "modern" technologies and languages
- Migrate to consolidated databases and cloud hosting

3 Selective Replacement

- Identify preferred "best of breed" COTS solutions for specific domains (e.g. Lab, Billing, etc.)
- Selectively integrate these using standards-based service tier technologies
- Retain and enhance preferred RPMS apps/functions using "wrap and renew" approach

4 Full Replacement

- Identify and implement preferred pre-integrated "best of suite" offerings
- Determine approach to retention/transfer of legacy data to new system
- Some features of RPMS unique to IHS may need to be retained or redeveloped

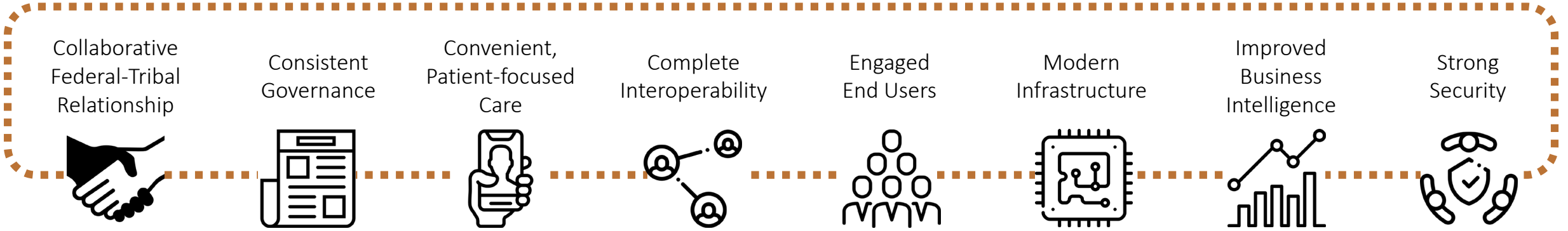
Future State HIT Vision

IHS Vision: Healthy communities and quality healthcare systems through strong partnerships and culturally responsive practices.

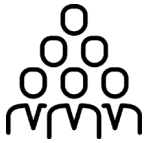
IHS Office of Information Technology (OIT) Vision: To meet customer needs by providing excellent, reliable, interoperable health information services that protect privacy while connecting patients, providers, and payers, enabling improved patient outcomes and controlled costs in support of the IHS mission.

IHS HIT Modernization Project Vision: Support the Indian Health Service (IHS) mission to raise the physical, mental, social, and spiritual health of American Indians and Alaska Natives (AI/AN) to the highest level through modern, innovative, and practical health information technology.

Components of a Modernized I/T/U HIT System



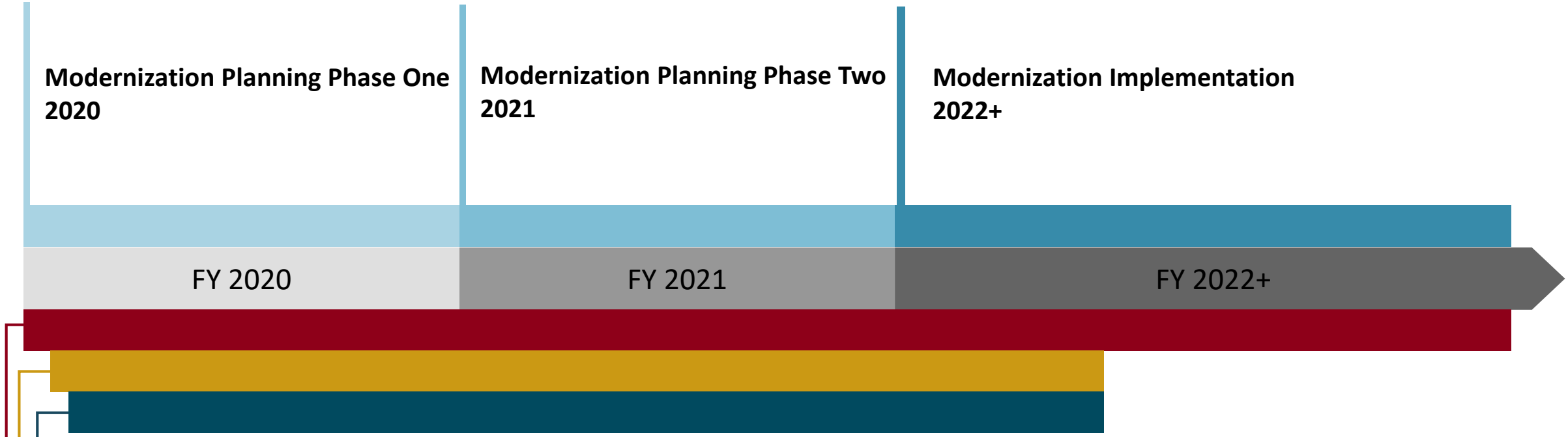
Strategic Recommendations

Modernization Approach	Strategy
 Honor the Federal-Tribal Relationship and its Unique Complexities	• Prioritize principles to honor the federal-Tribal relationship • Charter a HIT Modernization Advisory Committee (FACA) • Engage with Tribal stakeholder groups
 Ensure Consistent Organizational Governance for Leadership	• Establish and maintain compact, effective, and efficient governance • Form a governing body to interact with inclusive stakeholder groups
 Create an Engaging, Modern, Convenient System for Patients	• Consult with outside organizations/businesses • Provide a user-friendly patient portal
 Engage End Users to Understand Their Needs	• Foster listening/ideation sessions to learn best practices and challenges • Develop system requirements from collected data • Increase training and support

Strategic Recommendations

Modernization Approach	Strategy
Provide Full Support for Data Exchange & Interoperability Between IHS Systems & Components	• Establish and implement framework for data governance • Establish longitudinal health information exchange • Support interoperability in any system selected
Improve Analytics & Business Intelligence	• Conduct a user-centered gap analysis • Determine topology and architecture for analytics • Align with modernization goals
Modernize the IHS HIT Infrastructure	• Address technological infrastructure concerns • Minimize applications, focusing on patient safety, operational fundamentals, and cybersecurity • Plan for continued maintenance of VA-sourced software
Strengthen IHS Security & Compliance	• Develop a framework for security evaluation and remediation • Ensure compliance with existing standards • Leverage other organizations

High-level Operation Plan



RPMS Stabilization & Early Wins
2020-2022
Address immediate patient and user needs and standardize databases

Address Data Governance & Interoperability
2020-2022
Establish data sovereignty and improve interoperability

Infrastructure Assessment & Build-out
2020-2022+
Assess current state and address gaps by engaging federal and industry partners

Operational Domains for IHS HIT Modernization

Modernization Planning and Execution *Strategic design and action to achieve HIT modernization*	• ***Establish governance, Program Management Office (PMO), and communication plan*** • ***Establish HIT Modernization Advisory Committee (FACA)*** • Select and acquire HIT solution	• Planning and execution are long, complex processes • Execution requires interaction with the Data Exchange and Infrastructure domains
RPMS Stabilization and Early Wins *Develop and Deploy Key Improvements to RPMS*	Address immediate end user requirements to adequately support business needs and provide adequate care to the population served by IHS	• Short-term stabilization must occur regardless of HIT system(s) chosen • Achieves "Early Wins" via immediate intervention and ongoing modernization
Data Exchange *Address Inter- and Intra-Operability Requirements*	Develop data exchange capability and provide a secure personal health record (PHR) electronic application vitally important to fluid populations	• Delivers a universal healthcare requirement • Essential to AI/AN populations
Infrastructure *Improve technology to support current needs and future HIT*	Make required updates to the hardware, software, networks, data centers, and equipment used to develop, test, operate, monitor, and manage technology services.	• Assess current infrastructure state at I/T/U facilities • Improve infrastructure to meet baseline requirements for selected HIT system(s)

Immediate Next Steps

Immediate next steps are presented in the context of the Roadmap domains.

Modernization Planning and Execution

- Restructure **HIT governance** processes within the agency
- Reorganize IHS's Office of Information Technology (OIT) and fill critical vacancies
- Establish and charter the **HIT Modernization Advisory Committee (HITMAC)**
- Execute an acquisition for expert **Program Management Office support**

RPMS Stabilization and Early Wins

- Take steps to **standardize and normalize RPMS databases** across the country
- Complete 2015 Edition certification, resolving usability issues of affected RPMS components to the extent possible

Data Exchange

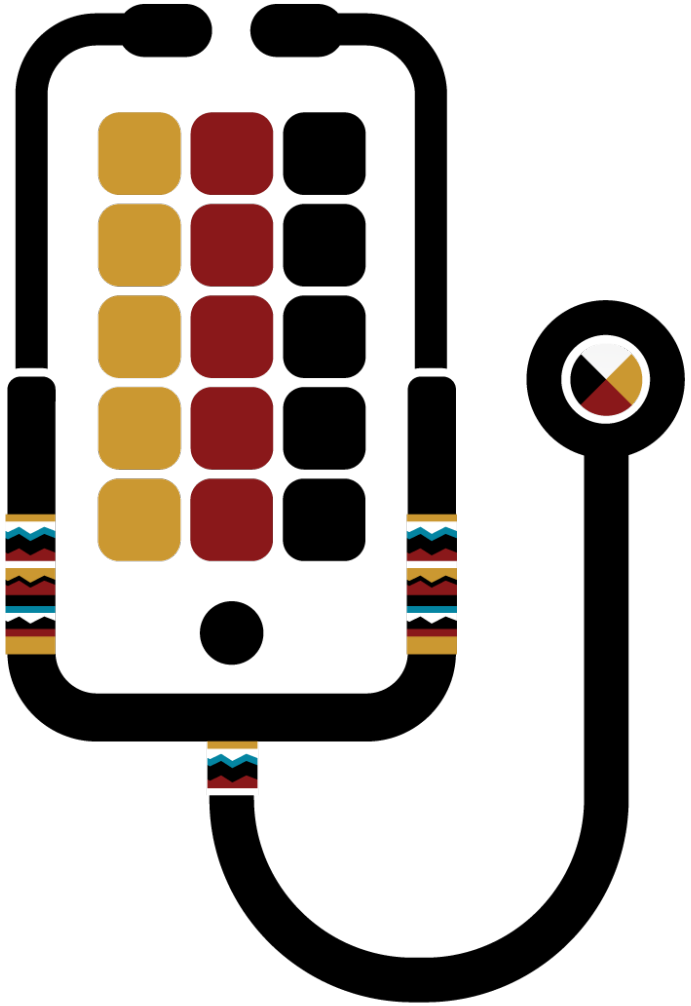
- Improve **Internal and External Interoperability**, including connections to Health Information Exchanges serving appropriate states and federal agencies

Infrastructure

- Address identified critical **infrastructure gaps**, engaging Federal and industry partners

Q&A

Contact Information



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