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MHS Information Platform

Advancing Data Access and Innovation through AI to Deliver Timely, Mission-Critical Insight

Chris Nichols MHA, BSN, LSSBB



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Agenda

- Introduction
 - About the Speaker
 - Learning Objectives
- The Problem: MHS Data: Volume, Analysis, Insights, Distribution
- The Solution: EIDS
 - Overview
 - Tools
 - Case Studies
- Call to Action: Future Use Cases for EIDS

Speaker Introduction



Mr. Chris Nichols, MHA, BSN, LSSBB

Program Manager

Enterprise Intelligence & Data Solutions (EIDS), PEO DHMS

Mr. Chris Nichols serves as program manager for the EIDS program management office. In his role, Mr. Nichols is responsible for delivering secondary data solutions around a digital health hub model; rationalizing legacy data capabilities; orchestrating integration for systems such as MHS GENESIS; and providing enterprise clinical intelligence to include clinical support applications, readiness reporting, research, 'big data' techniques, and dashboards for the entire Military Health System (MHS) and other federal partners.

Learning Objectives

- 1** Discuss how EIDS Agentic Data Catalog and Code Conversion represent a shift from passive data management and manual coding toward autonomous, AI-driven workflows
- 2** Describe how Agentic Code Conversion can modernize legacy codebases, turning outdated languages into optimized modern code with minimal human intervention
- 3** Illustrate how Military Entrance Processing Command (MEPCOM) uses AI to streamline medical reviews for applicants
- 4** Explain the progress and advancements in the AI space and its role in enhancing data availability

The MHS Possesses a Vast Amount of Data – More Than 5 PB

Since 2017 in MHS GENESIS + TRICARE



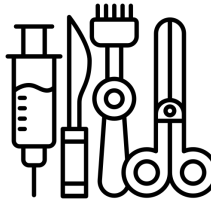
12.7M
Patients



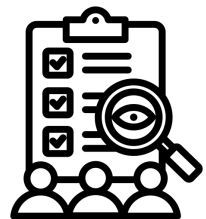
1.6B
Diagnoses



839M
Encounters



782M
Procedures



961M
Observations



88M
Medications

Daily



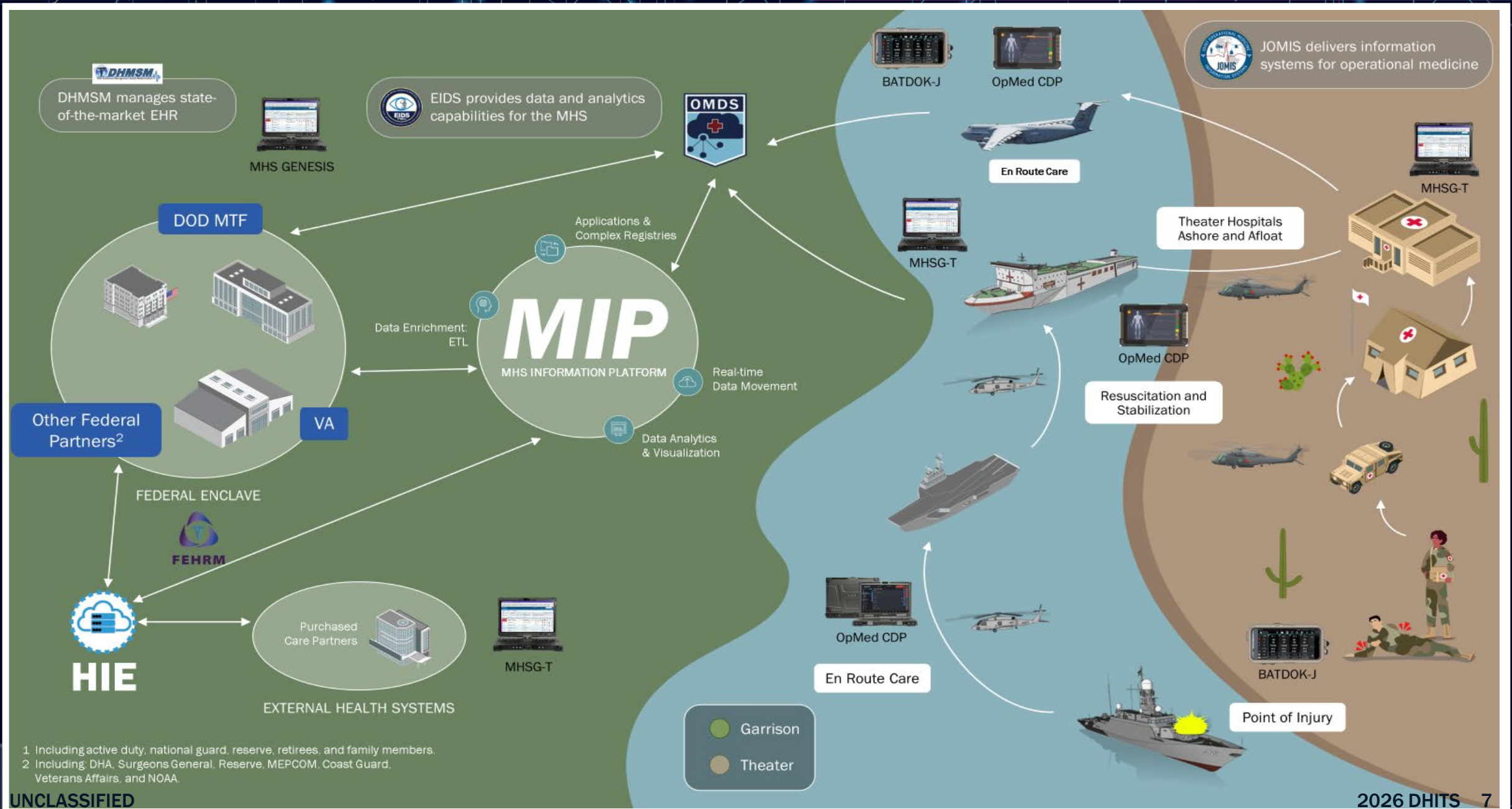
140K
Clinical Notes



20M+
Messages



165K
Encounters

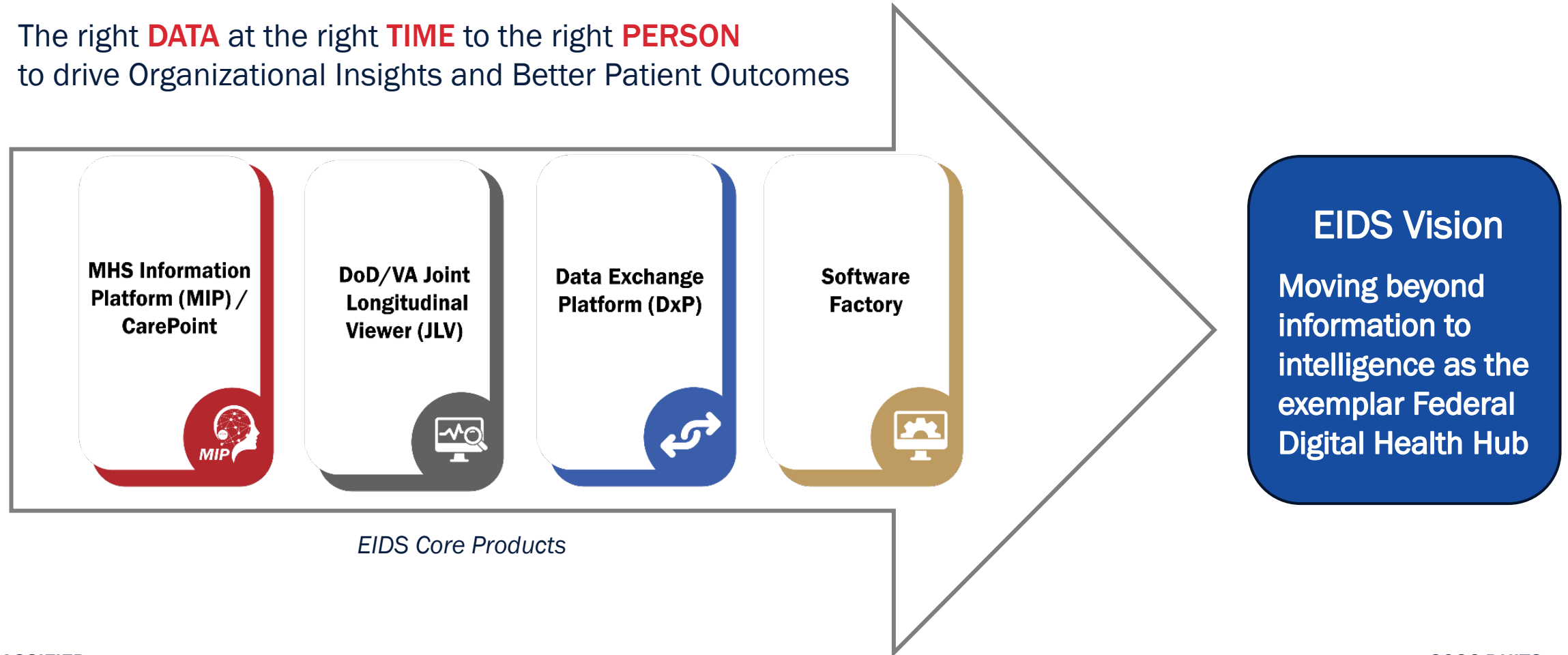


1 Including active duty, national guard, reserve, retirees, and family members.
 2 Including: DHA, Surgeons General, Reserve, MEPCOM, Coast Guard, Veterans Affairs, and NOAA.

EIDS Analyzes and Distributes MHS Data to Ensure Warfighter Readiness

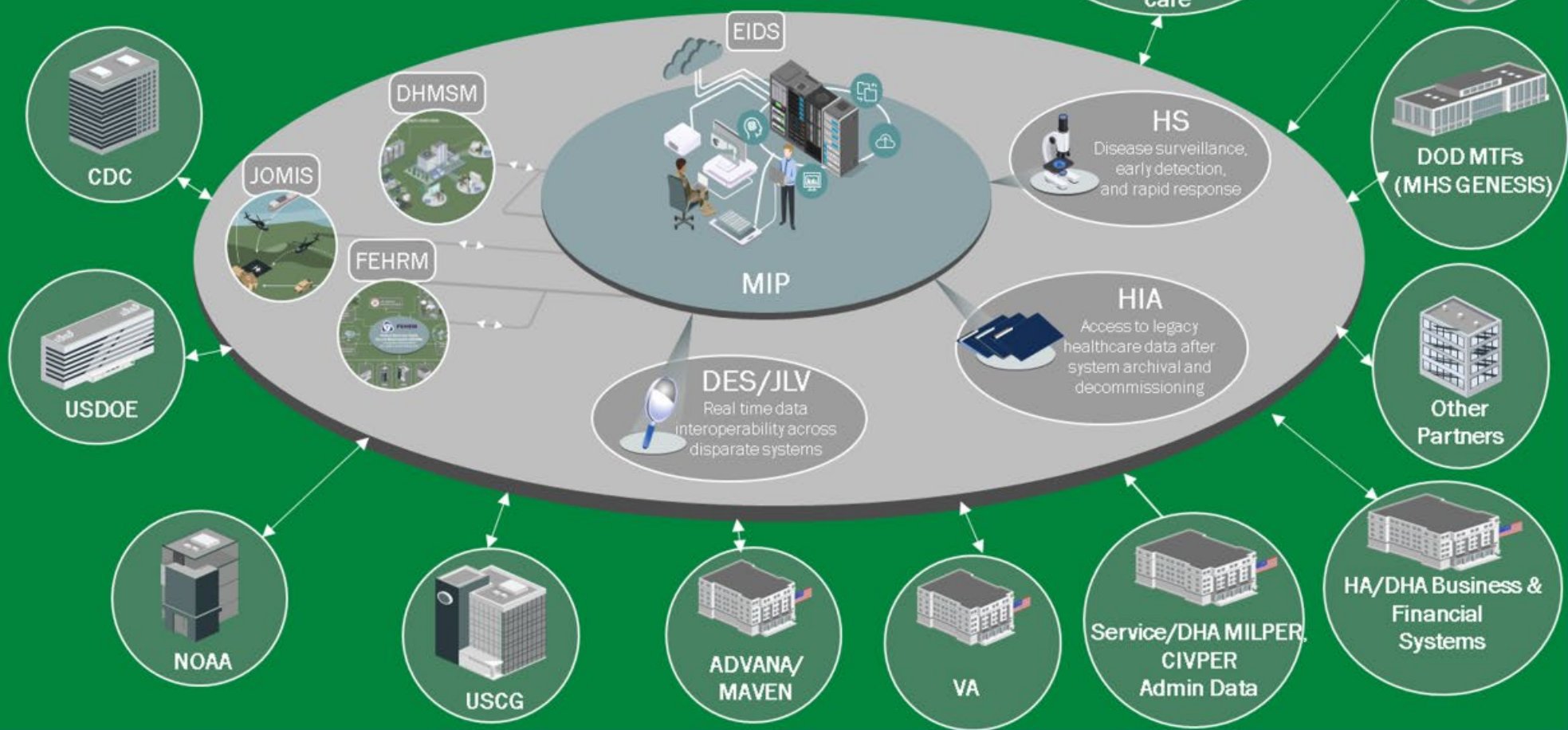
EIDS Mission

The right **DATA** at the right **TIME** to the right **PERSON**
to drive Organizational Insights and Better Patient Outcomes





MHS Information Platform



EIDS delivers, connects, integrates, and curates health data to enable informed decisions, research, and innovation

MHS Information Platform

Provides a comprehensive analytics solution with flexible tools
Compiles aggregated data from 130+ DOD data sources on a scalable platform

MHS' Analytics & Data Visualization Platform

Digital Exchange Service Joint Longitudinal Viewer

Pulls information from disparate health care systems in real time
Allows authorized users throughout DOD and the VA to view clinical information

Health Information Archive

Enables the archival and decommission of DHA legacy systems
Provides clinicians with direct access to a patient's historical medical record

Health Surveillance

Collects near real-time data from MHS medical facilities to support the early detection and monitoring of health events
Provides prompt notifications of actionable and emerging health concerns

Outcomes/
Achievements
since EIDS
standup in
2018

Maintains **LARGEST** repository of secondary data in the DOD through rationalization of
30+
data warehouses

130+
data
sources

Over 8.0 PB
of active
data

Rationalized
& Developed
32
Applications

Conducted the
LARGEST DATA MIGRATION
in DHA's history, transferring over
60,000,000
health records annually

Modernized the Reserve Health
Readiness Program (RHRP) for
800,000+
Remote component servicemembers
and DoD Civilians

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EIDS Service Categories



Data as a Service

Provide standardized data products (i.e., creating usable data sets) made accessible and available via a user-friendly data marketplace/catalogue



Applications as a Service

Design and deploy data capabilities that have a custom UI/UX or standard APIs to support MHS clinical and operational decisions



Analytics as a Service

Provide scalable analytics tools and capabilities to support Business Intelligence (BI) / Artificial Intelligence (AI) / Machine Learning (ML)



Data and Analytics Advisory

Provide consulting and training services to help customers understand MIP data products and how to best leverage each capability

The MIP's Core Capabilities Comprise an Analytics/AI Platform and 60+ Enterprise Applications

Analytics/AI/Research	Readiness and OpMed Integration/Applications	Clinical and Strategic Decision Support Applications
• 2000+ MHS analysts access MIP data layer • Data consulting and training • 450+ user generated analytic visualizations • 120+ published research studies • Congressional, DoW, DHA, MTF reporting • Self-service data marts • AI/ML/NLP tools for EIDS material development • Pharmacy Data Warehouse • MHS Data Repository / MHS Mart • MHS Common Data Model / Universal Data Hub	• Dental Tracking and Reporting • Immunization Tracking Repository (ITR) • MEPCOM predictive AI accessions modernization • Commanders Risk Reduction Dashboard (Army Vantage) • RHRP • DENCLASS re-platforming • Behavioral health data platform integration • Longitudinal complex registry integration • Health surveillance portfolio applications (Essence, DMSS, DMED, DoD Serum Repository, CDC, DoD Global Respiratory Pathogen Surveillance Program) • Digital Biobank • Operational transition implementing modern architecture (JOMIS) • Organizational Incident Operational Nexus (ORION)	• MHS Population Health Portal • 60+ clinical, case management and specialty registries • Clinical assessment management portal surveys (Pain, Musculoskeletal, TBI, BHDP) • Health Information Archive/Health Record Snapshot (Legacy clinical data) • Complex registries (DVEIVR, TBI) • Drug Demand Reduction Program application • Clinical Quality Assessment • Clinical Decision Support Tool • DoD/VA Infrastructure for Clinical Intelligence • Data Integration for Joint Trauma System, JOMIS OpMed tools, DHA FMIS • Patient ID Probabilistic Matching • Human Capital Data Warehouse • Healthcare Risk Management Tool

Nine Features Power the MIP's Core Capabilities



Common
Data Model



Enterprise
Data
Warehouse



Structured
Data Storage



Enterprise
Data Lake



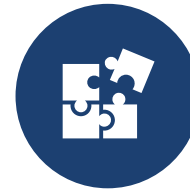
Cyber



Cloud
Hosting



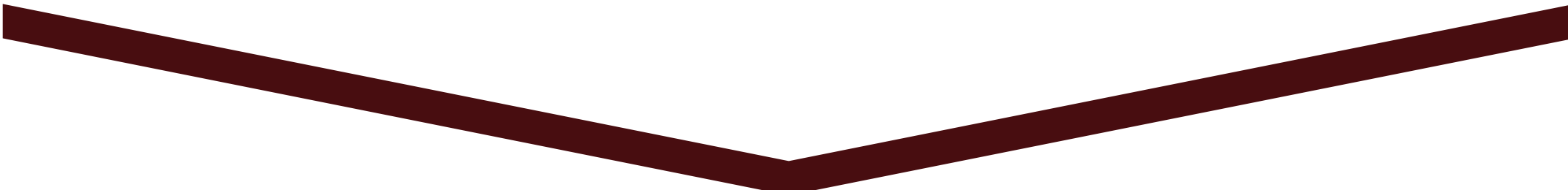
Data Quality



Interface
(API)
Integration



Governance
/ Priorities

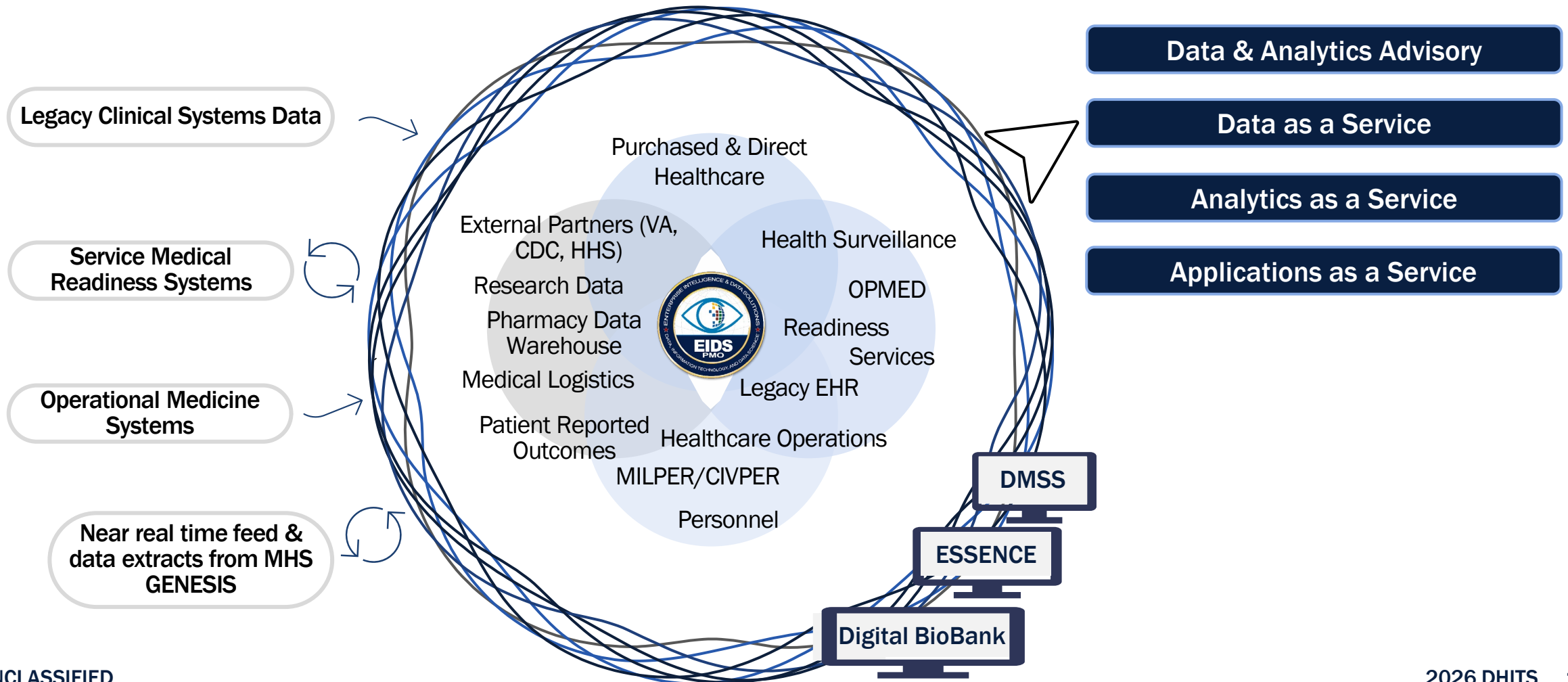


60+ Enterprise Applications

EIDS | Products & Services at the Intersection of Data

Today, EIDS compiles over 8 PB of data from 130+ sources on a scalable platform

EIDS Products & Services



Spotlight

How EIDS Leverages AI

The Strategic Landscape: AI is the New Battlefield



AI is a present-day reality, serving as a significant force multiplier.

The New Standard of Care

Civilian health care already uses AI to power diagnostics, predict disease outbreaks, and accelerate medical research.

DoW Chief Digital and Artificial Intelligence Office (CDAO) Mandate

Accelerate AI to boost warfighter readiness and medical outcomes.

AI Accelerates Development

Reports show 55% faster completion of tasks and decrease in development costs.

From Passive Data Management to AI Driven Workflows

An evolution in how we interact with data and build software, moving from human-led, reactive processes to proactive, intelligent systems.

Agentic Data Catalogs: Passive Repositories to Active Intelligence

	Traditional Data Catalog		Agentic Data Catalog
Nature	Passive and reactive, requiring manual updates and queries.	➔	Proactive and autonomous, continuously monitoring and managing data.
Data Discovery	Often reliant on tribal knowledge.	➔	Automated discovery, classification, and cataloging of data assets.
Data Quality	Manual checks and ad-hoc validation, risking inconsistent, outdated data.	➔	Continuous, real-time monitoring for anomalies and automated remediation of data quality issues.
Governance	Static, rule-based policies that are difficult to enforce at scale.	➔	AI-driven governance that adapts to new data and user feedback, enabling governed self-service.
User Interaction	Requires technical expertise to navigate and utilize.	➔	Offers natural language interfaces and guided assistance, making data accessible to non-technical users.

[Link to Agentic Data Catalog Video](#)

Advantages of an Agentic Approach



The MIP Data Catalog Offers AI-Assisted Metadata Intelligence without Live Source Querying during Q&A

Live Staging Stats	Architecture	Zero-Impact Model
• 5 onboarded systems • 96 quality-tracked tables • 766 profiled columns	• Coordinator → per-system agents • SQL server persistence + vector-backed approved-document retrieval • Evidence-grounded chat, search, governance & monitoring	• No user-triggered live queries during interactive Q&A • Answers from cached snapshots + approved docs only • Agent is the trust boundary; credentials never leave agent

Case Study

MEPCOM Predictive AI

Accessions Modernization

MEPCOM: Streamlining a Manual Process for Warfighter Readiness



Turning SECDEF Recommendations into Technical Workstreams

Recommendation 1

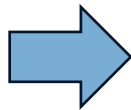
Development, testing, and deployment of IT solutions that integrate advanced analytics

Recommendation 2

Data Exchange service between MIP → USMIRS

Recommendation 3

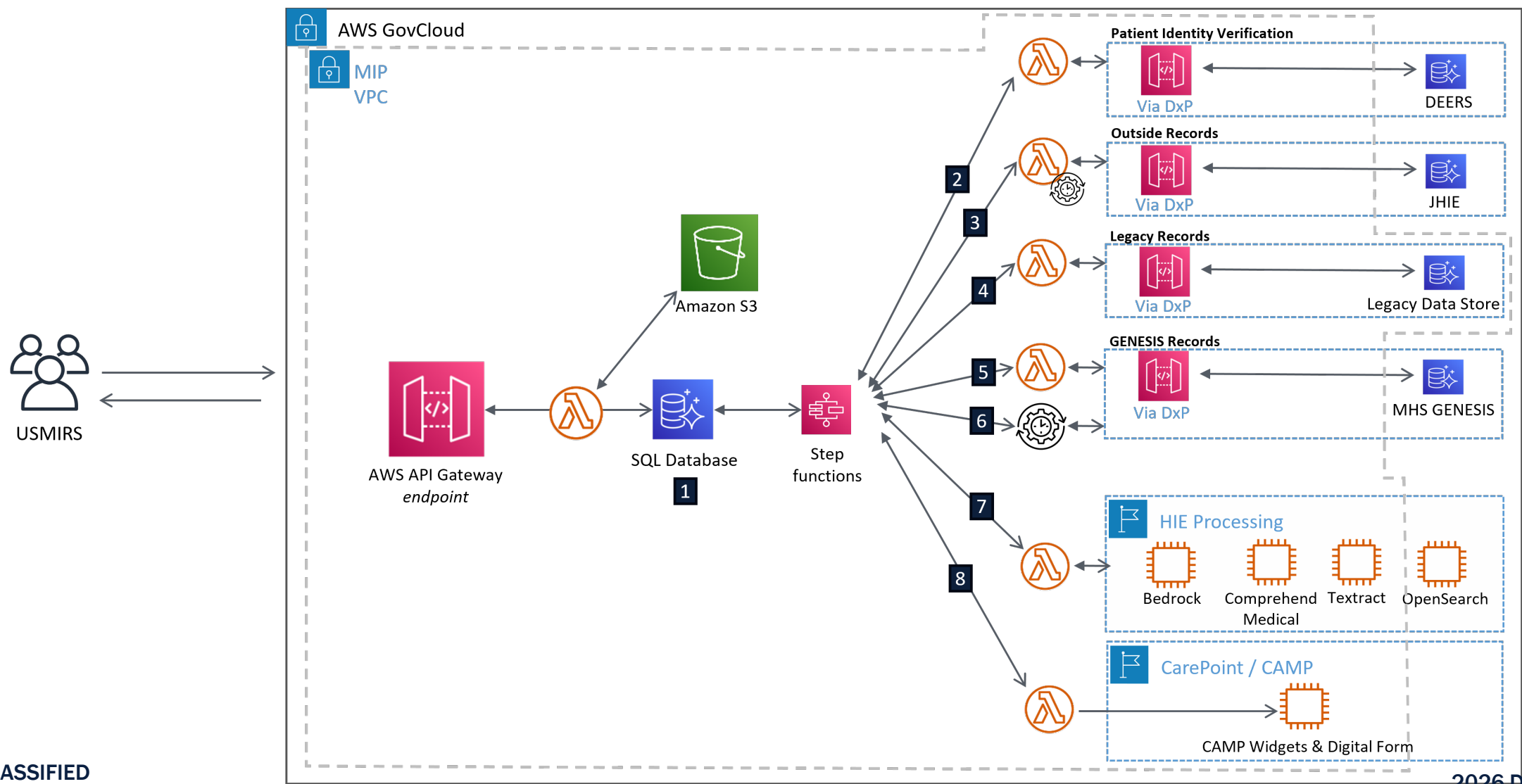
Develop Smart & Digital DD 2807-2 (Accessions Medical History Report)



Technical Workstreams

1	USMIRS / MIP API	Data Exchange Service between MHS GENESIS, MIP and USMIRS – Patient and Encounter Creation within MHS GENESIS
2	MIP FHIR Gateway Enhancements	Configuration enhancements to MIP FHIR Gateway to share Occupational Health Data
3	MIP / DES Interoperability Improvements	Enhancing interoperability between MIP CarePoint and MIP DES
4	Advanced NLP/OCR/LLMs	Advanced NLP, OCR, and LLMs for Predictive modeling and Automated Clinical Note Creation
5	MSAR Data Integration	Ingest accession, retention, and separation data from MSAR
6	Smart Form (Unfunded)	Enhance CAMP to assist services with DD2807-2

Simplified Architecture



Case Study

SAFEGUARD Program Rollout

Suicide Avoidance Focused Enhanced Group

SAFEGUARD: Algorithm Risk Detection for Mental Health Crises

Suicide Avoidance Focused Enhanced Group

Machine learning models

- Analyze 130+ health record and administrative data sources
- Identify active-duty service members at highest risk for suicide and harmful behaviors

Plus evidence-based interventions



Improved health outcomes for service members

- Reduced suicide rates
- Fostered mental resilience



Case Study

Pharmacy Data Warehouse (PDW) Pharmacy LLM

Concept to Demo in 24 Hours

PDW Pharmacy: The Question That Started It All

How many GLP-1 prescriptions did we fill last year?

Barriers

- × Millions of data rows
- × Complex data structures
- × Nuance of drug classification
- × Need for precision in queries

Bottleneck

Data specialists' limited capacity



Slowed
progress on
potential
innovations

PDW Pharmacy: 24 Hours from Phone Call to Demo

Day 1: Afternoon Concept & Alignment

- Proposed building a natural-language interface for pharmacy data
- Selected PDW as initial use case
- Leveraged the Software Factory
- Iterated and learned with the functional community

Day 1: Evening Rapid Build & Synthetic Data

- Used AI tools to build core application
- Generated synthetic dataset, matching PDW structure
- Ensured no PHI or CUI, enabling full demo capability
- AI supported app development *and* creation of a realistic test environment

Day 2: Afternoon Live Demonstration

- Delivered a working prototype
- Demo for DHA Pharmacy lead within 24 hours of initiation
- Built by domain experts, not a development team
- Showcased a simple idea: users can ask questions in plain English and receive answers from real data structures

[Link to MIP Agentic Data Insights Video](#)

PDW Pharmacy: Experts Build the Framework; AI Fills in the Blanks



Human-Built Foundation

- PDW Cube
- Validated query patterns



AI Functionality

- Translate plain-language questions → human-built query structures

Reduced hallucination risk + Built-in transparency

PDW Pharmacy: Before and After

Before

- Volume and complexity of data and classification are barriers to action.
- Work needs to be done by a data specialist, who has limited capacity.
- Progress and innovation slowed by data analysis bottleneck.



After PDW Pharmacy Sprint

- These are navigable realities, not barriers.
- Those closest to the problem can prototype solutions – no coding experience needed.
- Repeatable across the MHS with curated data, established query patterns, and SMEs with questions.
- Tool is safe to demonstrate; ready to connect.

Opportunity: Getting Data Right to Drive Impact

What if we could...

Readiness



detect diabetes and predict obesity to prioritize engagement before it progressed and made service members unfit for service?

Better Outcomes



predict which doctors are likely to deliver better outcomes?

Better Care



evaluate a clinical encounter and determine its quality in near real-time?

Precision Medicine



predict which antidepressant would work for a service member allowing them to return to duty quicker?

Lower Cost



use AI to detect variations in hospital procurement and provide cost savings opportunities?

**What question would you
ask your data?**

Key Takeaways

- An Agentic Data Catalog creates a dynamic, self-governing ecosystem with improved quality, faster delivery, and reduced costs.
- EIDS incorporates AI as a force multiplier to proactively accelerate warfighter readiness and improve medical outcomes.
- EIDS' work with MEPCOM to accelerate evaluation of new military recruits and accession process represents an example of successful AI implementation.

Contact

Chris Nichols
EIDS Program Manager

 chris.e.nichols.civ@health.mil

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Thank You!



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