

Statewide Interoperability Readiness in Missouri: A Mixed-Methods Assessment of Health Information Network Capacity

March 2026

Affiliations:

Show-Me Health Information Network of Missouri (SHINE)

Authors:

Laura McCrary, EdD, Jill Daughhetee CMPE, CRHCP, Chris Guerrero, Theresa Roark MBA, Melissa Talley, BSN, MBA, Yolanda Canady, MPA, CPC, Rhonda Spellmeier MBA, BSN, RN, Miranda Trotman

Table of Contents

Statewide Interoperability Readiness in Missouri: A Mixed-Methods Assessment of Health Information Network Capacity.....	1
Affiliations:.....	1
Authors:.....	1
Abstract	4
Background:.....	4
Objective:	4
Methods:	4
Results:	4
Conclusions:.....	5
Introduction	7
Study Context and Interoperability Landscape.....	9
Methods.....	10
Study Design	10
Setting and Participants	10
Data Sources.....	10
Measures	11
Statistical and Qualitative Analysis	11
Limitations	11
Results.....	12
Provider Connectivity Findings.....	12
Data Types Exchanged	14
Standards Adoption and Semantic Readiness.....	15
Technical and Operational Barriers	15
Discussion	17
Principal Findings	17
Implications	17

Strengths and Limitations.....	18
Policy, Practice, and Future Research Considerations	18
Future Research	20
Conclusion	21
Acknowledgements	21
Generative AI Statement.....	21
References	22
Appendix	24
Exhibit A. Participating Entities Survey Overview.....	25
Exhibit B. Healthcare Associations Data Assets Survey Overview	26
Exhibit C. Rural–Urban Classification Methodology	27
Exhibit D. Detailed Data Element Coverage and Segment Contribution Matrix	28
Exhibit E. HDU Workstream Coordination Activities.....	30
Exhibit F. Interoperability Barrier Summary (Hospitals)	31
Exhibit G. Assessment Considerations.....	32
Exhibit H. Interview Guide for Convener Stakeholders	35
Exhibit I. Missouri Health Data Ecosystem Assets and Exchange Capacity Detail	38

Abstract

Background:

Statewide data sharing between health care providers for shared patients, often called interoperability, is foundational to patient safety, coordinated care delivery, value-based payment models, and modern public health response. Missouri has proposed development of a statewide Health Data Utility (HDU) to align existing health information exchange assets and support a unified digital infrastructure. A structured assessment of current interoperability capacity is necessary to inform feasibility and implementation planning. [1]

For the purposes of this assessment, statewide readiness to support a Health Data Utility (HDU) was evaluated across six domains: (1) ecosystem exchange assets and modalities, (2) provider connectivity, including Health Information Network (HIN) and Qualified Health Information Network (QHIN) participation, (3) data types exchanged, (4) standards adoption and semantic interoperability, (5) reported technical and operational barriers, and (6) governance and administrative alignment. These domains collectively inform Missouri's current capacity to support expanded, standards-based data exchange infrastructure. Governance findings reflect observed structures and administrative alignment within participating entities; cross-network governance coordination was not assessed.

Objective:

To evaluate Missouri's health information ecosystem readiness to support a unified, standards-based statewide HDU including a statewide digital backbone and clinical data warehouse.

Methods:

A mixed-methods landscape assessment was conducted beginning in August 2025. Data sources included a standardized Participating Entities Survey administered across Missouri's four HINs, stakeholder interviews with provider associations, and review of relevant state and national interoperability frameworks. Quantitative measures were summarized using descriptive statistics, including participation rates and exchange capabilities by provider type. Qualitative data was analyzed using thematic synthesis to identify barriers and implementation gaps across varying provider segments and characteristics related to provider readiness for statewide HDU participation. [2] [8]

Results:

Participation in a HIN was evaluated across Missouri Medicaid providers. This included critical access and Prospective Payment System (PPS) hospitals, federally qualified health centers (FQHCs), and community mental health centers (CMHCs). Overall, 65% of hospitals and FQHCs participate in at least one HIN, and 32% of CMHC participate in at least one HIN. There was variation by provider type and geography with greater penetration in urban portions of the state than in rural portions.

The completeness of the data exchanged between the HINs was evaluated for use in the development and calculations of digital clinical quality measures necessary to evaluate and benchmark the health of the Missouri Medicaid patients over time. Reported results indicate a high degree of data completeness with actual quality needing additional semantic evaluation at the site level.

Participation in national data sharing through the Trusted Exchange Framework and Common Agreement (TEFCA) through QHINs is limited among Missouri Medicaid providers; limiting data exchanged when patients cross state geographical boundaries for care. Evaluation of participation in other national networks such as the Centers for Medicare and Medicaid (CMS) Aligned Networks, eHealth Exchange, Commonwell, Carequality and others would inform a more complete representation of available data exchanged for care delivered outside of Missouri.

Health Information Networks reported technical capability to support Fast Healthcare Interoperability Resources (FHIR)-based exchange; however, HINs reported production-level FHIR transactions have not been implemented.

At the state level, Missouri lacks a consolidated statewide clinical data repository and statewide unified provider directory. [2-7], [9-10], [11], [2], [1,12]

Conclusions:

Missouri possesses foundational infrastructure to support a Missouri Health Data Utility (HDU) including statewide interoperability with mature HIN networks that demonstrate clinically robust exchanged data and cross-network collaboration. However, gaps in provider connectivity, QHIN participation, identity resolution, and operationalized FHIR exchange must be addressed to achieve cohesive, standards-based statewide interoperability. [12]

The HDU is poised to support Missouri's Rural Health Transformation Program (RHTP) Digital Backbone Initiative. Using the statewide HDU as the Digital Backbone would accelerate the achievement of the RHTP Digital Backbone Initiative to connect providers, including rural providers, through HL7 FHIR and USCDI v3 standards. It expands real-time data exchange, analytics, and tech-supported care management provided today by the HINs and key stakeholder organizations in the state. Utilizing the HDU supports the Digital Backbone Initiative's alignment to CMS strategic goals to Foster the Use of Innovative Technologies and Innovative Care Models and supports the CMS RHTP statutory elements for Technology Use and Data-Driven Solutions and Partnerships and Governance. [1]

The HDU's design objectives include engagement with stakeholders to support Community Information Exchange (CIE). This HDU effort will be an enabler to support Missouri's RHTP efforts for closed-loop referrals and performance tracking to bring data-driven insights to the point of care and local front-line providers.[1]

Next steps emphasize integration of HIN and QHIN capacity with state and private sector assets, targeted onboarding and data quality improvement with continued alignment to statewide initiatives through HDU workstreams to implement a statewide interoperability roadmap.^[12]

Introduction

Statewide interoperability has been a foundational goal for the nation since the inception of the Health Information Technology for Economic and Clinical Health Act (HITECH) act in 2009. Interoperability is defined as the ability of different systems to exchange health information and use it effectively in the care of patients. This capability is foundational to patient safety, reduced costs, coordinated care delivery, value-based payment models, and public health responsiveness. Missouri's recent 2025 Rural Health Transformation Plan identified patient data fragmentation across electronic medical record systems and other technology platforms as a structural barrier to achieving a unified digital infrastructure, particularly in rural health systems [1]. This study provides an in-depth analysis of Missouri's readiness for a digital data sharing infrastructure.

As states increasingly pursue coordinated, standards-based data exchange strategies, the Health Data Utility (HDU) model has emerged as a framework for aligning public and private sector interoperability efforts to address these issues. A HDU is defined as a not-for-profit, multi-stakeholder entity that provides statewide health data exchange and analytic capacity under shared governance for the public good [14]. Health Information Networks (HINs) often serve as foundational components of HDUs, contributing technical infrastructure, identity resolution services, and established trust frameworks [15]. The HDU model expands upon traditional HIN functions by integrating governance coordination, standardized data exchange, and analytics to support quality measurement, care coordination, and population health management.

Missouri's interoperability ecosystem includes four established Health Information Networks (HINs): Lewis and Clark Information Exchange (LACIE), Show-Me Information Network of Missouri (SHINE), Tiger Institute for Health Alliance, and Velatura HIE Corporation. Collectively, these networks support secure messaging, point-to-point exchange, query-based exchange, ADT notifications, analytics and public health reporting [2–7]. Professional associations, including the Missouri Hospital Association (MHA), Missouri Primary Care Association (MPCA), and Missouri Behavioral Health Council (MBHC), maintain complementary claims, clinical, and referral data assets that contribute to the broader health data environment [8,16]. A detailed description of Missouri's HIN and association assets are included in the Appendix, Exhibit I.

However, despite these assets, this study shows structural gaps remain. Provider participation varies by organization type, geography (rural vs. urban) and technical capacity. QHIN participation is limited with only a subset of hospitals, FQHCs, and CMHCs participating in TEFCA-aligned exchange, [2–12]. Additionally, the state of Missouri lacks unified data governance, a consolidated statewide clinical data repository and unified provider directory, complicating identity resolution and analytic integration [12].

In recent years, states have increasingly examined interoperability maturity as a prerequisite to Medicaid transformation, value-based care expansion, and public health modernization [1,14,26–29]. National frameworks emphasize that interoperability readiness extends beyond technical connectivity to include semantic standardization, governance coordination, identity resolution infrastructure, and sustainable participation models [14,15,26–29]. As such, assessing readiness requires evaluation across multiple interdependent domains rather than isolated measures of connectivity.

This study assesses Missouri readiness for key HDU requirements including Missouri Medicaid provider participation in data sharing, HIN and Association data exchange capabilities, clinical data completeness and data quality for the population of a clinical data lake or data warehouse. Understanding the degree to which existing infrastructure can be aligned under a cohesive HDU model requires systematic ecosystem-level assessment.

Study Context and Interoperability Landscape

Missouri's health information ecosystem includes four established Health Information Networks (HINs): Lewis and Clark Information Exchange (LACIE), Show-Me Information Network of Missouri (SHINE), Tiger Institute for Health Alliance, and Velatura HIE Corporation. Over more than a decade of operation, they have developed technical infrastructure, identity resolution services, and trust frameworks that facilitate cross-organizational exchange. The networks connect together to share information with each other. However, there are differences in patient matching, technical standards and data display across the HINs.

In parallel, professional associations such as the Missouri Hospital Association (MHA), Missouri Primary Care Association (MPCA), and Missouri Behavioral Health Council (MBHC) maintain exchange environments and complementary data assets, including ADT data, claims data, population health platforms, and behavioral health referral systems [8,16]. These assets expand the analytic and operational capacity of the state's broader data environment. However, this assessment did not include a comparative evaluation of patient matching methodologies, technical implementation, or data display across association platforms. Associations reported use of standardized data formats (e.g., CCD, ADT, FHIR) and maintain limited data-sharing relationships with some HINs; connectivity is not uniform across all networks. Additional evaluation would be required to determine whether exchange relationships could be further expanded or aligned.

Despite the presence of these established infrastructures, interoperability remains uneven. Provider participation in HIN exchange varies by organization type and geography, and QHIN connectivity remains limited across evaluated provider segments [2–12]. Although all four HINs report technical capability to initiate and receive FHIR-based transactions, production-level FHIR exchange has not been operationalized statewide [2,12]. In addition, the absence of a consolidated statewide health data repository and unified provider directory presents challenges for entity matching, identity resolution, and integrated analytics [12].

National interoperability frameworks emphasize the importance of standardized data exchange, semantic alignment, and coordinated governance to support clinical quality measurement, care coordination, and public health modernization [14,15,26–29]. Within this context, a systematic evaluation of Missouri's technical, organizational, and governance readiness is necessary to inform the design considerations of statewide Health Data Utility.

Methods

Study Design

This mixed-methods landscape assessment was conducted beginning in August 2025 to evaluate Missouri's readiness to implement a statewide Health Data Utility (HDU). The study integrated quantitative and qualitative approaches to assess interoperability assets, provider connectivity, data quality and completeness, data exchange capabilities, and interoperability barriers across Missouri's health information ecosystem.

The assessment was designed to capture both technical infrastructure and operational interoperability realities across major Medicaid-serving provider sectors.

Setting and Participants

The assessment focused on three primary provider sectors with substantial Medicaid encounter volume: Critical access and Prospective Payment System (PPS) hospitals, federally qualified health centers (FQHCs), and community mental health centers (CMHCs). These sectors represent core clinical environments where interoperability gaps directly affect patient safety, care coordination, quality measurement, and public health reporting.

Participants included:

- Hospitals identified through Missouri Hospital Association (MHA) and Hospital Industry Data Institute (HIDI) datasets [3]
- FQHCs identified through HRSA and MPCA datasets [4–5]
- CMHCs identified through Missouri Department of Mental Health datasets [6]
- Missouri's four HINs (LACIE, SHINE, Tiger, VHIEC) [2]
- Leadership representatives from MHA, MPCA, and MBHC [8]

Data Sources

Primary data were derived from three sources:

1. **Participating Entities Survey (December 2025):**

A structured survey administered collaboratively across Missouri's four HINs collected standardized information on provider connectivity, exchange capabilities, standards adoption, and technical readiness [2]. The survey included both parent-organization and site-level variables. A structured instrument excerpt is provided in Appendix Exhibit A to illustrate standards and vocabulary capture methodology.

2. **Stakeholder Interviews and Data Asset Survey:**

Semi-structured interviews with representatives from provider associations assessed technology and data assets, interoperability barriers, and organizational readiness [8]. A structured survey administered collaboratively across Missouri's provider associations collected standardized information on types of data collected. (See Exhibit H for Missouri HDU Readiness Interview Guide for Convener Stakeholders).

3. **State and National Framework Review:**

Relevant state documentation and national interoperability standards, including FHIR, USCDI, and TEFCA frameworks, were reviewed to contextualize findings [14,26–29].

Measures

Readiness was evaluated across six domains:

1. Ecosystem assets and exchange capacity
2. Provider connectivity (HIN and QHIN participation)
3. Data types exchanged
4. Standards adoption and semantic readiness
5. Reported technical and operational barriers
6. Collaboration and administrative readiness

Statistical and Qualitative Analysis

Quantitative survey data were analyzed using descriptive statistics, including counts, proportions, and cross-tabulations by provider type and geography. Parent-organization-level analysis was used for participation measures, with site-level analysis applied for rural–urban comparisons.

Qualitative interview data and open-ended survey responses were used to assess organizational assets, data systems and provider readiness to support statewide HDU functions.

Limitations

This assessment relied in part on self-reported survey data and did not independently validate provider-level exchange workflows or production transaction volumes. The study did not include all Medicaid-serving provider types, such as rural health clinics, pediatric practices, or long-term care facilities. Public health data systems were not comprehensively assessed. As such, findings reflect ecosystem-level readiness rather than operational implementation performance.

To enhance analytic consistency, survey variables were normalized across participating HINs using standardized response matrices to reduce cross-network variability [2]. Parent-organization participation rates were calculated using validated provider rosters derived from association and public datasets [3–6]. Rural–urban classification was applied at the site level using federal geographic designation standards [9–10].

Results

Ecosystem Assets and Exchange Capacity

The state has four tenured HINs. These entities are the Lewis and Clark Information Exchange (LACIE), Show-Me Information Network of Missouri (SHINE), Tiger Institute for Health Alliance (Tiger), and Velatura HIE Corporation (VHIEC). Missouri's HINs have operated for more than a decade and collectively support query-based exchange, secure messaging, point-to-point exchange, ADT notifications, and public health reporting [2-8]. Professional associations, including the Missouri Hospital Association (MHA), Missouri Primary Care Association (MPCA), and Missouri Behavioral Health Council (MBHC), maintain a broad set of technical environments data-exchange infrastructure, population health platforms, and behavioral health referral systems supported by complementary assets such as statewide ADT feeds, claims information, and analytic datasets. [8,16] A detailed description of Missouri's HIN and association assets are included in the Appendix, Exhibit I.

Provider Connectivity Findings

Slightly more than half of all Missouri Medicaid organizations participate in HINs. This includes hospitals, federally qualified health centers (FQHCs), and community mental health centers (CMHCs). Overall, 54.6% of parent organizations participated in at least one Health Information Network (HIN) as of February 2026 [2-7] (Figure 1).

“Parent organization” refers to the primary governing entity (e.g., a health system or organization headquarters), while “site-level” classification includes all facilities providing care, either independently or under a parent organization. Parent-level participation reflects organizational affiliation, whereas site-level analysis provides a geographic landscape of care delivery locations.

Provider Participation in a HIN at the organization level

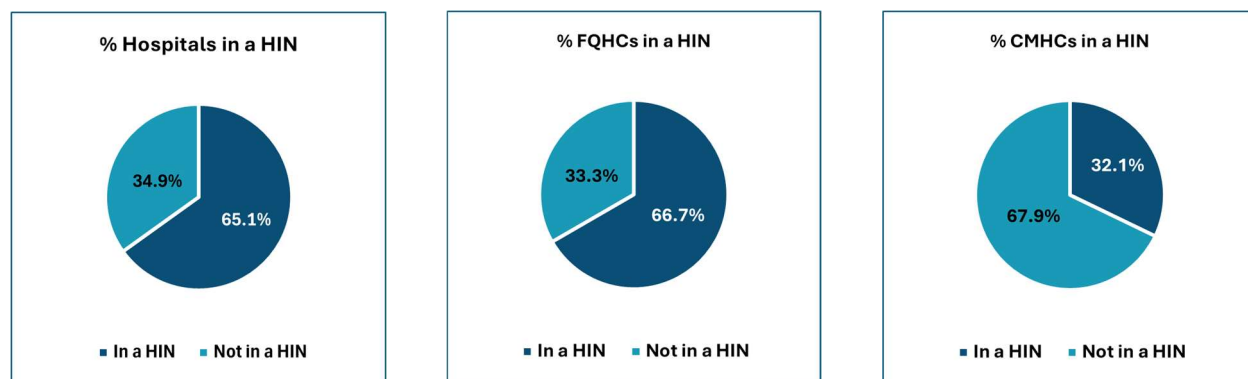


Figure 1. HIN Participation by Provider Type

HIN participation varied by provider type: 65.1% of hospitals, 66.7% of FQHCs, and 32.1% of CMHCs were connected to a HIN (Figure 1).

To accurately display rural vs urban participation, it was necessary to look at all sites that a parent organization operated. Many operate both urban and rural sites. At the site level, participation differed by geography, with higher representation observed in urban settings across provider types.

Among non-HIN members, non-participation was more pronounced among rural FQHC sites than other evaluated provider segments [2,9–10] (Figure 2).

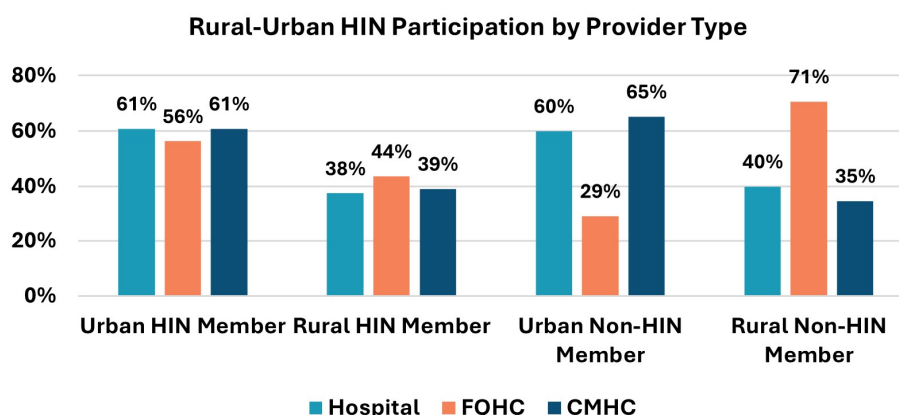


Figure 2. Rural–Urban HIN Participation by Provider Type

**Rural and urban data is calculated for each site providing care, based on site address.*

Qualified Health Information Network (QHIN) participation was limited across sectors. Among evaluated provider types, 30% of hospitals, 7% of FQHCs, and 7% of CMHCs reported participation in TEFCA-aligned exchange (Figure 3) [2–7,11].

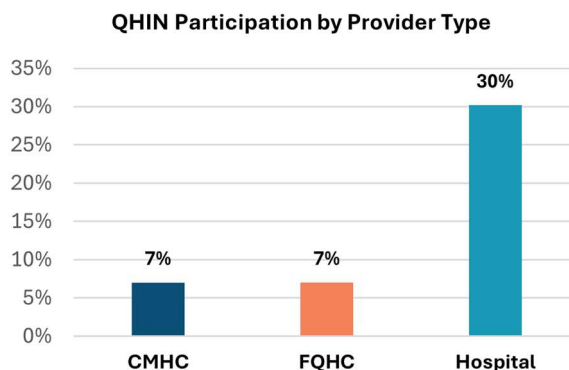


Figure 3. QHIN Participation by Provider Type

Data Types Exchanged

Clinically rich data elements are necessary for the calculation of digital quality measures. Increasingly clinical data is required for the calculation of HEDIS measures. Thus, the inclusion of complete and correct clinical data, including laboratory results, vital signs, medications, and problem lists are essential. The survey found these elements were available through HIN-mediated CCD exchange and HL7 v2 feeds. These data elements are not consistently available through claims data sources alone (Figure 4).

Provider associations further contribute substantial data assets that enhance this.

Data Element Coverage Across HINs by Parent Organization			
Data Element	CMHC	FQHC	Hospital
Allergies	89%	94%	88%
Clinical Obsv/ Notes	67%	61%	76%
Ethnicity	89%	94%	90%
Immunizations	67%	78%	71%
Labs	78%	78%	85%
Language	89%	94%	90%
Medications	78%	78%	76%
Problems/ Diagnosis	89%	94%	88%
Procedures	78%	94%	85%
Race	89%	94%	90%
Radiology/Ancillary	0%	11%	44%
Vitals	89%	94%	80%
*Includes coverage across CCD and HL7V2 data for select elements.			

Figure 4. Data Element Coverage Across HINs by Parent Entity

***Includes coverage across CCD and HL7 v2 data for select elements.**

ecosystem. Missouri's hospitals exchange ADT information at very high rates, with interviews confirming that nearly 95 percent share ADT data with statewide and regional exchange partners [8,16]. ADT feeds give providers and state agencies timely visibility into patient movement, strengthening coordination across hospitals, community health centers, and behavioral health organizations.

MPCA maintains FQHC datasets that include clinical and demographic data directly from FQHC electronic health records and overlay this data with ADT information, Medicaid and Medicare claims, immunization records, social determinants data, and population health metrics. MBHC maintains community mental health center data, including Medicaid and pharmacy claims, crisis response information, state mental health datasets, and behavioral health referral data. MHA maintains ADT data, hospital claims enriched with social determinant Z-codes, survey data, and advanced claims-based analytics [8,16].

The coexistence of clinical exchange data and complementary data assets suggests multi-sector data infrastructure that supports statewide care coordination, population-

health improvement, and potential analytic depth if integration mechanisms are established [2-8,16]. However, the lack of a consolidated repository limits longitudinal record construction and cross-sector analytic visibility [1,12].

Standards Adoption and Semantic Readiness

The HINs have worked closely together for the last 12 months to establish shared data standards. Alignment efforts through HDU workstreams resulted in shared minimum ADT data standards and conformance to USCDI v3 for CCD exchange across participating HINs [12,18,23]. This work is necessary for the establishment of a statewide digital backbone and semantic interoperability across the exchanges.

In addition to transport standards, semantic interoperability remains a critical dimension of statewide readiness. HIN participant use of HL7 v2 messaging for ADT and laboratory feeds and C-CDA for document exchange, with alignment efforts underway toward USCDI v3 conformance [12,18,23]. However, variation in structured vocabulary utilization (e.g., SNOMED CT for problems, LOINC for laboratory observations, RxNorm for medications) may affect downstream analytic normalization and quality metric calculation. Continued harmonization claims and clinical data to FHIR resources will help with vocabulary standards and structured data submission requirements. This will be essential to ensure that exchanged data is not only transportable, but computable at scale.

While all four HINs report technical capability to support FHIR-based exchange, HL7 v2 messaging continues to serve as the operational backbone for ADT notifications and alerting workflows across the state. As modernization efforts advance, continued support for existing exchange formats, including HL7 v2 messaging and CCD-based document exchange, will be necessary to maintain current workflows while expanding FHIR API-based interoperability.

Technical and Operational Barriers

There were no significant technical or operational barriers in conducting the survey and resulting analysis. However, due to the lack of a statewide provider directory, the location and confirmation of health care sites provided a challenge. The statewide associations helped reconcile names and addresses and provided good information that was valuable in solving this problem.

Collaboration and Administrative Readiness

The assessment revealed evidence of inter-organizational coordination and collaboration among the State of Missouri, its four HINs and the private associations, underscoring their capacity to operate as a cohesive, statewide interoperability ecosystem as is needed for an HDU. Collectively, the HINs and the private associations have engaged in ongoing structured, but often separate, initiatives that demonstrate not only technical alignment but also maturing stewardship practices and shared operational planning.

Missouri's HINs demonstrate strong collaborative capacity. The Electronic Long-Term Services and Supports (eLTSS) initiative showed that HINs can jointly operationalize cross sector exchange, supporting the electronic exchange of person centered care plans for individuals with intellectual and developmental disabilities [31].

Collaborative governance activities were observed across HINs through shared workstreams focused on data standards alignment and interoperability roadmap development [12,18,23]. All HINs have been working collaboratively on the workstreams shown below.

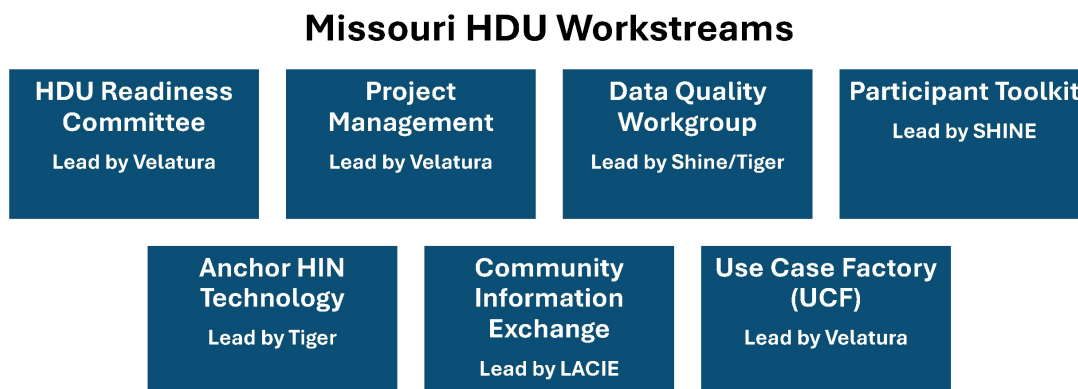


Figure 5. Missouri HDU Workstream Governance Structure

Discussion

Principal Findings

This statewide assessment identified substantial foundational interoperability capacity within Missouri's health information ecosystem for the establishment of a Health Data Utility and statewide digital backbone. Four established HINs provide mature exchange infrastructure, including ADT notifications, CCD exchange, and public health reporting pathways. Clinically robust data elements — including laboratory results, vital signs, medications, and problem lists — are available through HIN-mediated exchange and extend beyond claims-based data sources.

However, interoperability remains uneven across provider types and geographic settings. QHIN connectivity remains limited across evaluated sectors. Although technical capability to support FHIR-based exchange exists, production-level FHIR transactions have not been operationalized statewide. In addition, the absence of a consolidated data repository and unified provider directory presents structural barriers to integrated analytics and identity resolution.

Collectively, these findings indicate that Missouri possesses infrastructure readiness but faces governance, participation, and operational standardization gaps.

Implications

The coexistence of mature exchange infrastructure and participation variability suggests that technical capability alone is insufficient to achieve cohesive statewide interoperability. Achieving system-wide integration necessary for the digital backbone and clinical data warehouse will likely require coordinated governance, standardized identity management frameworks, and expanded provider onboarding.

QHIN participation may enhance cross-state data completeness, particularly for patients receiving care across regional boundaries. Similarly, the absence of production-level FHIR exchange may limit scalability for application-based interoperability and modern API-driven use cases.

The presence of complementary association-managed data assets indicates potential analytic strength if integration and alignment mechanisms are established. Consolidation of clinical, claims, and behavioral health datasets under shared FHIR standards will improve longitudinal record completeness and clinical quality measurement accuracy.

Missouri has built solid technology for data sharing, but participation across the state is still uneven. Participation gaps among provider segments and geographies introduce cross-sector fragmentation within the interoperability landscape. Given the increasing emphasis on whole-person care and behavioral health integration in Medicaid policy [1], uneven provider connectivity may limit comprehensive longitudinal record development and quality

metric calculation. Strengthening participation across provider segments and across rural/urban areas represent a critical pathway toward more equitable statewide interoperability.

The distinction between technical readiness and operational implementation is evident in FHIR adoption. While technical capability exists across networks, production deployment remains unrealized [2,12]. Bridging this gap will likely require coordinated incentives, implementation support, and defined use-case prioritization.

The absence of a unified provider directory represents a structural constraint distinct from connectivity gaps. Even in the presence of data exchange capability, incomplete or inconsistent organization and provider identifiers complicate routing accuracy and analytic consolidation [12]. Identity resolution infrastructure therefore represents a foundational governance and technical requirement for cohesive statewide interoperability.

Identity resolution remains a foundational consideration for statewide interoperability. Missouri does not currently operate a unified statewide provider directory or centralized identity resolution framework. Fragmentation in patient matching and provider directory infrastructure may constrain routing accuracy, analytics integration, and longitudinal record development. Strengthening identity management capabilities for both patients and providers will be essential to cohesive HDU implementation.

Strengths and Limitations

This assessment incorporated standardized survey instruments developed collaboratively across HINs, enabling cross-network comparison of participation and exchange capabilities. Inclusion of stakeholder interviews provided contextual insight into provider readiness and barriers to participate in an HDU.

However, findings rely in part on HIN self-reported survey data and did not independently validate production transaction volumes or workflow integration at the provider level. Several Medicaid-serving provider types were not included, and public health data systems were not comprehensively assessed. As such, findings reflect ecosystem-level readiness rather than real-time interoperability performance.

Policy, Practice, and Future Research Considerations

Below are policy, practice and future research considerations that together will shape a cohesive strategy to modernize and unify the state's health data infrastructure.

Coordinated governance mechanisms across HINs, Provider Associations and the state will be necessary to align standards adoption, participation requirements, and data-sharing agreements across networks. It will be important to align governance efforts of the HDU and Missouri's proposed RHTP Rural Health Data Collaborative. The state should continue strengthening the statewide HDU work that is being undertaken by the HINs so that

standards, data sharing agreements, and cross network operations are coordinated under a single, consistent framework. As part of this effort, Missouri should formally establish the HDU with HINs as the core Digital Backbone to meet interoperability needs across state initiatives including the RHTP. This includes creating a statewide transport layer that connects all HINs and identified Association data assets to implement uniform patient matching standards and routinely assessing the volume and quality of clinical data exchanged across networks.

To support statewide analytics and population level insights, Missouri should develop a single, consolidated, jointly governed public private health data repository capable of meeting comprehensive analytic needs. Ensuring broad participation is essential, and all MO HealthNet providers should be required to connect to a HIN within a targeted timeline to fully integrate Medicaid providers into the statewide Digital Backbone.

The state should also expand the use of existing HIN infrastructure to deepen clinical data exchange and improve data completeness, enabling more robust clinical insights, quality measurement, and care coordination. Leveraging QHIN participation and TECCA's Health Care Operations exchange purpose may enhance MO HealthNet's capacity to gather additional data needed for statewide analytics and clinical quality measures.

Missouri should use the HDU to unify provider and organizational directories across the state, creating a centralized, authoritative provider directory that reduces administrative burden and strengthens interoperability.

Missouri's practice recommendations emphasize building provider readiness, strengthening data quality, and accelerating participation in statewide interoperability efforts. Tools should be made available to assist providers to identify their specific gaps, challenges, and operational needs related to achieving MO HealthNet's desired interoperability state. With this insight, the state should ensure the development of tailored implementation plans for different provider types, ensuring that each group has a clear, achievable pathway toward full participation in statewide data exchange.

A major priority is increasing the proportion of providers contributing data to Health Information Networks with a particular focus on rural providers. MO HealthNet should establish objective measurable connectivity goals to move to full Medicaid provider participation in a HIN within 24 months-36 months. To support this growth, the four Missouri HINs should continue collaborating with state partners to finalize the HDU design and roadmap, ensuring alignment with modern standards such as FHIR, USCDI v3, HL7 v2 and Gravity Project-aligned social determinants of health reporting.

Improving data quality is equally essential. Missouri should invest in NCQA like aligned data quality processes and implement quarterly monitoring focused on completeness, accuracy, timeliness, and consistency. Strengthening data quality will ensure that the information flowing into the HDU is reliable and actionable for clinical, operational, and analytic use.

Finally, the state should deploy targeted provider outreach, education, and quality improvement activities to help organizations connect to HINs and contribute standardized, consistent data. These efforts will support providers in meeting interoperability expectations while reinforcing the broader goal of a unified, high quality statewide data ecosystem. Provider associations are poised to facilitate HIN outreach efforts with their memberships.

Future Research

Future research should evaluate provider-level interoperability barriers, use cases including production FHIR use cases, and identity resolution mechanisms. Additional assessment of underrepresented provider sectors and public health integration capacity would further clarify statewide readiness.

Future research should assess workflow-level interoperability integration, including provider experience, transaction volume validation, and care coordination. Additionally, evaluation of cross-state data exchange completeness through QHIN participation could clarify the magnitude of longitudinal data gaps for patients receiving out-of-state care. See Exhibit F. in the Appendix section of this report for a detailed list of policy, practice and future research recommendations.

Conclusion

Missouri's health information ecosystem demonstrates substantial foundational readiness to support statewide interoperability and Health Data Utility (HDU). Established HINs provide mature exchange infrastructure with over 65% of hospitals and FQHCs connected and sharing data, creating clinically rich data streams, and demonstrated cross-network coordination capacity. Complementary association-managed datasets and resources further expand analytic potential across hospital, primary care, and behavioral health sectors.

However, infrastructure maturity alone does not ensure cohesive statewide interoperability. Persistent gaps in provider participation particularly among rural providers and community mental health centers, limited QHIN connectivity, absence of production-level FHIR deployment, and lack of unified identity resolution and directory infrastructure constrain full system integration. Governance alignment and consistent clinical quality standards operationalization remain necessary to translate technical capacity into coordinated statewide performance.

Advancing a unified Health Data Utility will require alignment across infrastructure, participation, semantic standardization, identity management, and administrative governance domains. With targeted coordination and sustained implementation focus, Missouri is positioned to evolve from distributed exchange capability toward a cohesive, standards-based digital backbone capable of supporting Medicaid quality measurement, care coordination, and public health modernization.

Acknowledgements

This work was conducted as part of the Missouri Health Data Utility (HDU) Readiness Initiative and prepared for the State of Missouri. The authors acknowledge contributions from Missouri Health Information Networks (LACIE, SHINE, Tiger Institute, and VHIEC) and professional associations (including the Missouri Hospital Association/HIDI, Missouri Primary Care Association, and Missouri Behavioral Health Council) for participation in surveys and interviews and for sharing information to support the landscape readiness assessment.

Generative AI Statement

Microsoft Copilot was used solely for limited editorial support, including synonym suggestions, clarity improvements, condensation of text, and assistance in organizing content. Copilot was also used to aid analysis of urban and rural designation data. All conceptual development, analytical interpretation, methodological decisions, and final conclusions were generated exclusively by the authors.

References

1. Missouri Department of Social Services. Missouri Rural Health Transformation Plan Application Narrative. <https://mydss.mo.gov/media/pdf/rhttp-application-narrative>. Accessed February 3, 2026.
2. SHINE; Tiger Institute; Velatura HIE Corporation; LACIE. Participating Entity Surveys, 2023–2025; updated December 2025. Unpublished internal survey data.
3. Missouri Hospital Association; Hospital Industry Data Institute. Licensed Missouri Hospital listing. Referenced in project materials.
4. Health Resources and Services Administration. HRSA Data Warehouse: Missouri FQHCs. <https://data.hrsa.gov/data/download?data=HSCD>. Accessed February 3, 2026.
5. Missouri Primary Care Association. Find a Health Center. <https://mo-pca.org/find-a-health-center/>. Accessed February 3, 2026.
6. Missouri Department of Health and Senior Services. Missouri Locations of Federally Qualified Health Centers (dataset). <https://data-msdis.opendata.arcgis.com/datasets/mo-federally-qualified-health-centers>. Accessed February 3, 2026.
7. Missouri Department of Mental Health. Community Mental Health Centers. <https://dmh.mo.gov/mental-illness/help-information/community-mental-health-centers>. Accessed February 3, 2026.
8. Missouri Primary Care Association; Missouri Hospital Association; Missouri Behavioral Health Council. Stakeholder interviews; Q4 2025. Unpublished data.
9. United States Census Bureau: Urban and Rural. <https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html>. Accessed 12/11/25.
10. Federal Office of Rural Health Policy Data Files: County and Census Tract Excel file. <https://www.hrsa.gov/rural-health/about-us/what-is-rural/data-file>. Accessed 1/11/26.
11. Recognized Coordinating Entity. Directory of QHIN membership. Referenced in project materials.
12. Missouri Health Data Utility Participant Landscape Assessment: Executive Briefing. January 14, 2026. Unpublished report prepared for the State of Missouri.
13. Missouri Office of Administration. Missouri Health Data Utility. https://oa.mo.gov/sites/default/files/dss_health_data_utility24.pdf. Accessed February 3, 2026.
14. Consortium for State and Regional Interoperability: What is a Health Data Utility? <https://theicsri.org/health-data-utility/>. Accessed 2/19/26.
15. Civitas: Transforming an HIE to an HDU to Support Public Health Data Modernization. <https://civitasforhealth.org/transforming-an-hie-to-an-hdu-to-support-public-health-data-modernization/>. Accessed February 19, 2026.
16. Missouri Primary Care Association; Missouri Hospital Association; Missouri Behavioral Health Council. Survey of Data Assets by SHINE of Missouri; February 2026. Unpublished data.

17. Evaluating digital maturity in public health systems: a statewide cross-sectional analysis of digital public health capacity in Missouri. <https://pmc.ncbi.nlm.nih.gov/articles/PMC12816354/#sec14>. Accessed February 5, 2026.
18. Missouri HDU Readiness Committee. Internal project materials; 2025. Unpublished data.
19. Lewis and Clark Information Exchange. <https://lacie-hie.com/>. Accessed February 5, 2026.
20. SHINE of Missouri. <https://www.shineofmissouri.com/>. Accessed February 5, 2026.
21. Tiger Institute for Health Alliance. <https://www.tiger-institute.org/>. Accessed February 5, 2026.
22. Velatura HIE Corporation (VHIEC). <https://velatura.org/velatura-hie-2/>. Accessed February 5, 2026.
23. Missouri HDU Data Standards Committee. Internal documentation on Missouri ADT minimum data standards and USCDI v3 conformance; 2025. Unpublished data.
24. Missouri's 2025 Public Health Data Landscape Report. <https://health.mo.gov/data/pdf/data-landscape-survey-report.pdf>. Accessed February 20, 2026.
25. Centers for Medicare & Medicaid Services. Quality Payment Program. <https://qpp.cms.gov>. Accessed February 3, 2026.
26. Revolutionizing Healthcare through Data Standardization. <https://www.himss.org/resources/revolutionizing-healthcare-through-data-standardization/>. Accessed February 4, 2026.
27. FHIR – Fast Healthcare Interoperability Resources. <https://ecqi.healthit.gov/fhir/about>. Accessed February 5, 2026.
28. Improving Patient Outcomes in Healthcare through FHIR Interoperability. <https://www.himss.org/resources/improving-patient-outcomes-healthcare-through-fhir-interoperability/>. Accessed February 4, 2026.
29. Data quality assessment in healthcare: dimensions, methods and tools: a systematic review. <https://pmc.ncbi.nlm.nih.gov/articles/PMC12335082/>. Accessed February 5, 2026.
30. 2024 MHA Annual Survey Information Technology Supplement data results summary. Accessed February 4, 2026.
31. Missouri Department of Mental Health. eLTSS Health Information Data Exchange Project. <https://dmh.mo.gov/dev-disabilities/eltss>. Accessed February 3, 2026.
32. Standards Adoption Among Health Information Exchange Organizations. <https://healthit.gov/data/data-briefs/standards-adoption-among-health-information-exchange-organizations/>. Accessed February 9, 2026.
33. ONC TEFCA Recognized Coordinating Entity: Exchange Purpose Healthcare Operations. https://rce.sequoiaproject.org/wp-content/uploads/2026/01/SOP-HCO-XP-Implementation-v2_508.pdf. Accessed February 21, 2026.

Appendix

Supporting Materials

Exhibit A. Participating Entities Survey Overview

The Participating Entities Survey (December 2025) was collaboratively developed and administered across Missouri's four Health Information Networks (LACIE, SHINE, Tiger Institute, and VHIEC). The survey collected standardized parent-organization and site-level data elements to ensure cross-network comparability.

The instrument included structured fields assessing:

- HL7 version support
- ADT segment utilization
- Exchange modalities
- Evaluation of structured vocabulary (CPT, CVX, ICD-10, LOINC, NDC, RxNorm, SNOMED)
- Standard code normalization processes
- Data contribution types and feed specifications

HIN	Participating Entity Name	Participating Entity, Group or Parent Company	Entity Category	Address line1	City	State	Zip	Race	ADT PV1.2.1 (Patient Type)	What version(s) of HL7 do you support?	Other feed types, if any
SHINE	SunnyDays Hopsital	SunnyDays Healthcare System	Hospital - Acute Care	16 ABC Parkway	Kansas City	MO	67690	Yes	Yes	V2	N/A
GENERAL QUESTIONS											
HIN Name:											
Your name:											
Your role:											
Do you evaluate fields for standard codes?											
If you evaluate for standard codes, which ones do you evaluate? (Check all that apply)											
☐ CPT											
☐ CVX											
☐ ICD 10											
☐ LOINC											
☐ NDC											
☐ Rx Norm											
☐ SNOMED											
If you evaluate for standard codes, what is your process when local codes are present in the data?											

Figure A1. Participating Entities Survey – Standards and HL7 Assessment Section

Exhibit B. Healthcare Associations Data Assets Survey Overview

The Healthcare Associations Data Assets Survey (February 2026) was collaboratively developed and administered across Missouri’s provider stakeholders representing community mental health centers, hospitals and federally qualified health centers (MBHC, MHA and MPCA). The survey collected data asset information held by the provider associations.

The instrument included structured fields assessing:

- ADT segment utilization
- Exchange modalities
- Evaluation of structured vocabulary (CPT, CVX, ICD-10, LOINC, NDC, RxNorm, SNOMED)
- Standard code normalization processes
- Data contribution types

Stakeholder Organization	Provider Category	FHIR Endpoint	Active FHIR Data Sharing	Initiate FHIR Transaction	If XDS/XCA, is SAML included in header	Exchange Methods (Send/Receive)	Race	Ethnicity	Language	ADT PV1.2.1 (Patient Type)	ADT PV1.7 (Treating Provider)	ADT PV2 (Admit Reason)
MHA EXAMPLE ONLY	Hospital	No	No	No	No XDS/XCA	Send and Receive	Yes	Yes	Yes	Yes	Yes	Yes
GENERAL QUESTIONS							RESPONSES					
Do you evaluate fields for standard codes?												
If you evaluate for standard codes, which ones do you evaluate? (Check all that apply)							If applicable, please describe.					
☐ CPT												
☐ CVX												
☐ ICD 10												
☐ LOINC												
☐ NDC												
☐ Rx Norm												
☐ SNOMED												
If you evaluate for standard codes, what is your process when local codes are present in the data?												

Figure B1: Stakeholder Interoperability, Data Standards, and Exchange Methods Assessment Tool

Exhibit C. Rural–Urban Classification Methodology

Rural and urban designation was determined at the site level using federal geographic classification standards, including:

- U.S. Census Bureau urban–rural definitions [9]
- Federal Office of Rural Health Policy data files [10]

Site addresses were matched to county and census tract designations to determine rural–urban status for participation rate comparisons.

Exhibit D. Detailed Data Element Coverage and Segment Contribution Matrix

This exhibit provides a structured, segment-level overview of data elements reported through Missouri Health Information Networks (HINs) and associated provider organizations.

The matrix includes:

- HL7 v2 message segments (e.g., ADT AL1, DG1, OBX, PR1, PV1, PV2)
- ORU laboratory and observation feeds
- RDE medication feeds
- VXU immunization submissions
- C-CDA document sections (allergies, problems, medications, labs, vitals, procedures, demographics)
- Structured demographic fields (race, ethnicity, language)
- Behavioral health-specific elements (e.g., depression screening, standardized SDOH data)

The left panel reflects association-level reporting (MHA, MBHC, MPCA). The right panel reflects parent-entity participation percentages by provider type (CMHC, FQHC, Hospital).

Coverage percentages summarized in Figure 4 within the main manuscript represent aggregated provider-level reporting. This exhibit provides detailed structural context for those findings. **Figure D1.** Data Element Capture and Contribution Matrix found on next page.

Percentage of Providers Contributing Data Elements to Missouri HINs by Parent Organization				Data Element Capture by Missouri Healthcare Provider Associations			
Data Element	CMHC	FQHC	Hospital	Data Element	MHA	MBHC	MPCA
ADT AL1 Allergies	56%	44%	49%	ADT AL1 Allergies	Y	N	Y
ADT DG1 Diagnosis	56%	44%	44%	ADT DG1 Diagnosis	Y	N	Y
ADT IN1 Insurance	56%	56%	76%	ADT IN1 Insurance	Y	N	N
ADT OBX Obsv Result	56%	44%	42%	ADT OBX Obsv Result	Y	N	Y
ADT PR1 Procedures	56%	44%	34%	ADT PR1 Procedures	Y	N	Y
HL7v2 Ethnicity	78%	83%	88%	HL7v2 Ethnicity	Y	Y	Y
HL7v2 Language	78%	83%	90%	HL7v2 Language	Y	Y	Y
HL7v2 Race	78%	83%	90%	HL7v2 Race	Y	Y	Y
ORU Labs	0%	11%	17%	ORU Labs	N	N	Y
ORU Radiology	0%	11%	7%	ORU Radiology	N	N	Y
ORU Vitals	0%	6%	0%	ORU Vitals	N	N	Y
ORU/MDM Clin Obsv	11%	11%	34%	ORU/MDM Clin Obsv	N	N	Y
PV1.2.1 Patient Type	78%	67%	88%	PV1.2.1 Patient Type	Y	N	Y
PV1.7 Treating Provider	78%	67%	90%	PV1.7 Treating Provider	Y	N	Y
PV2 Admit Reason	67%	61%	81%	PV2 Admit Reason	Y	N	Y
RDE Medications	0%	0%	0%	RDE Medications	N	N	Y
VXU Immunizations	0%	11%	5%	VXU Immunizations	N	N	Y
CCD Allergies	78%	78%	76%	CCD Allergies	N	N	Y
CCD Care Plan	22%	44%	46%	CCD Care Plan	N	N	Y
CCD Clinical Obsv	67%	56%	66%	CCD Clinical Obsv	N	N	Y
CCD Encounter	78%	78%	76%	CCD Encounter	N	N	Y
CCD Ethnicity	78%	78%	78%	CCD Ethnicity	N	N	Y
CCD Immunizations	67%	78%	71%	CCD Immunizations	N	N	Y
CCD Labs	78%	72%	76%	CCD Labs	N	N	Y
CCD Language	78%	78%	76%	CCD Language	N	N	Y
CCD Medications	78%	78%	76%	CCD Medications	N	N	Y
CCD Problems	78%	78%	76%	CCD Problems	N	N	Y
CCD Procedures	67%	78%	73%	CCD Procedures	N	N	Y
CCD Race	78%	78%	78%	CCD Race	N	N	Y
CCD Radiology/Ancillary	0%	0%	34%	CCD Radiology/Ancillary	N	N	Y
CCD Vital Signs	78%	78%	76%	CCD Vital Signs	N	N	Y
Depression Screen	0%	0%	2%	Depression Screen	N	Y	Y
Standardized SDOH Data	11%	0%	7%	Standardized SDOH Data	N	Y	Y

Figure D1. Data Element Capture and Contribution Matrix

Additional Data Capture: MHA: Claims, Financial, Licensing Survey Data, MBHC: CSV, Inbound FHIR, MPCA: Claims Data from Medicare and Medicaid; EHR Direct Connect
MBHC: CSV, Inbound FHIR

Exhibit E. HDU Workstream Coordination Activities

HDU Readiness activities included structured cross-HIN coordination through:

- Data Quality Workstream
- Project Management Workstream
- Standards Alignment (USCDI v3 conformance)
- Shared minimum ADT data specification development
- Use case identification and interoperability roadmap planning

These activities reflect emerging statewide administrative alignment but do not yet constitute centralized governance authority.

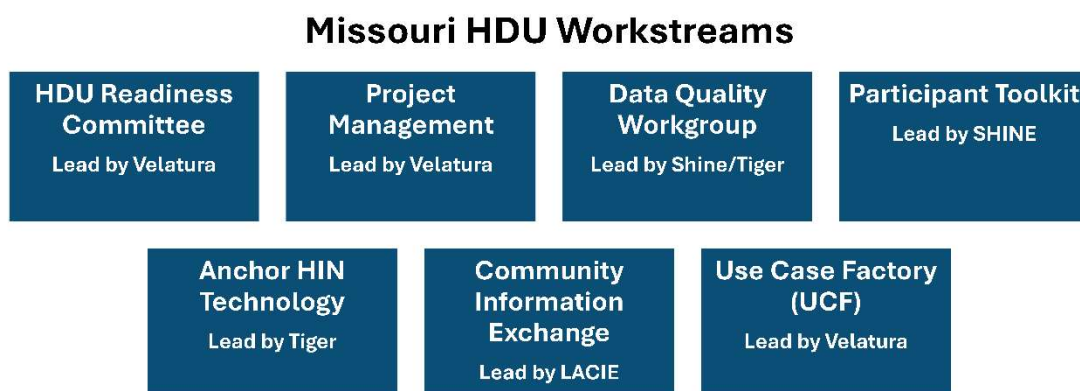


Figure E1. Missouri HDU Workstream Governance Structure

Exhibit F. Interoperability Barrier Summary (Hospitals)

Based on 2024 MHA IT Supplement data [30]:

- 62% reported receiving providers lack EHR capability
- 61% reported difficulty locating Direct addresses
- 48% reported patient-matching challenges
- 56% reported need for custom interfaces
- 68.3% reported vendor platform exchange difficulty
- 27.8% reported additional costs to exchange data

Comparable structured barrier data for FQHCs and CMHCs were not available during this assessment.

Exhibit G. Assessment Considerations

Recommendations

Assessment findings show that there are considerable health data interoperability assets that coexist in Missouri's health ecosystem today. Existing assets span technological capacity, data assets, working governance and established data sharing policies, relationships, knowledge and expertise. ^[2-7,8,16]

Today, Missouri's HINs operate health data exchange and other services required for a statewide HDU and possess the core infrastructure required for statewide interoperability including master patient index and identity resolution, secure data transport and routing, clinical document exchange, public health reporting pathways, consent and privacy management and data quality monitoring. The HINs operate as trusted, neutral conveners across the state's health data ecosystem serving providers, payers, state agencies and others. The HINs' operating neutrality serves to balance interests across sectors, enforce standards across entities and maintain trust with participants. ^[2-7,12]

Private associations are powerful contributors to Missouri's statewide health data ecosystem. In addition to holding health data and technical assets the associations have strong relational, operational, and strategic assets with providers and others within the health data ecosystem. These associations bring a strong foundation of experience, trust, influence and capability that can potentially be leveraged by the state and the HDU to accelerate statewide interoperability. ^[8,16]

Policy Recommendations

1. Continue efforts to establish a statewide HDU and related HDU governance to coordinate standards, data sharing agreements, and cross network operations.
2. Engage and align HDU governance with Missouri's RHTP Rural Health Data Collaborative to integrate data and data tools into statewide systems to ensure data-driven decision making, continuity of care and improved health quality of care and outcomes.
3. Establish HIN and QHINs as the Missouri statewide Digital Backbone to transform Missouri's fragmented ecosystem to unified statewide interoperability.
 - a. Establish a statewide transport layer requiring all HINs to connect to each other.
 - b. Establish patient matching standards to which all data assets must conform.
 - c. Measure clinical data exchange across data assets on a quarterly basis.

4. Establish a single, consolidated, jointly governed public-private health data repository that meets statewide comprehensive analytic needs.
5. All MO HealthNet providers should be connected to a HIN in support of Missouri's Digital Backbone within 24 months.
6. Expand clinical data exchange and data element assessment through existing HIN capacity to support clinical data-driven insights, generation of clinical quality metrics, and care coordination.
7. Leverage QHIN Participant, QHIN infrastructure, and the TEFCA QHIN Health Care Operations exchange purpose to gather additional data necessary to calculate clinical quality measures and analytics.
8. Use the HDU to unify Missouri's healthcare provider and organization directories and deliver a centralized Missouri provider directory service that reduces administrative burden and strengthens statewide interoperability.

Practice Recommendations

1. Develop a provider self-assessment tool to identify specific gaps and challenges in achieving Missouri's desired interoperability state.
2. Design and establish a plan, customized by provider type to achieve statewide interoperability and objectives.
3. Increase HIN data contribution across all provider segment types to reach 100% HIN data contribution in Missouri in 24 months across all provider types.
4. The four Missouri HINs should continue to collaborate, in conjunction with state partners, to finalize the HDU design and roadmap to enable statewide interoperability, incorporating current industry standards including FHIR, USCDI v3, HL7 v2 ADT messages, and Gravity Project-aligned SDOH reporting.
5. Invest in data quality and measurement.
 - a. Support NCQA-aligned data quality processes and
 - b. Implement quarterly data quality monitoring, focusing on completeness, accuracy, timeliness, and consistency.
6. Design and deploy customized provider outreach, education, and quality improvement activities to support data exchange connectivity and consistent, standardized data contribution to the HDU.

Future Research Recommendations

1. Perform a comprehensive analysis and inventory of FHIR assets and FHIR use cases to guide the creation of a statewide strategy for FHIR-based data exchange purposes that integrate existing FHIR exchange infrastructure and align with MO HealthNet objectives for improved outcomes for the Missouri Medicaid population. Evaluate progress twice a year.
2. Conduct a comprehensive analysis of healthcare association data assets, exchange capacity, and technical infrastructure to achieve statewide interoperability while identifying opportunities for alignment.
3. Assess overlapping state and federal initiatives required for data exchange and interoperability to optimize alignment of resources and efforts to meet prioritized needs.
4. Identify high value use cases for HDU and QHIN enabled exchange.
5. Evaluate processes for data quality assurance to support high quality data exchange and ingestion.
6. Evaluate data quality dimensions and related data quality processes including completeness, accuracy, timeliness, consistency and validity at a provider data stream level.
7. Assess interoperability needs of additional provider types, including rural health clinics, primary care clinics, pediatric clinics, long term care, home health, and community based organizations.

Exhibit H. Interview Guide for Convener Stakeholders

Missouri HDU Readiness Interview Guide for Convener Stakeholders

Purpose: To inform the assessment of sector-wide readiness, priorities, and challenges related to Missouri's HDU initiative by engaging leaders who represent provider networks or associations. This guide is designed to surface systemic readiness, shared barriers, and strategic alignment across member organizations. These interviews will inform statewide HDU strategy, technical assistance planning, and stakeholder alignment.

Section 1: Convener Profile

Organization Name: _____

Provider Segment Represented: _____

Number of Members: _____

Geographic Reach (Statewide, Regional, Urban/Rural Focus):

Primary Contact Name & Role: _____

Section 2: Strategic Alignment with Sector Priorities

2.1 How would you describe your sector's current priorities related to health data exchange and interoperability?

2.2 How do you see a statewide HDU supporting those priorities?

2.3 How could HDU participation align with your sector's strategic goals (e.g., rural health transformation, value-based care, population health, behavioral health integration)?

Section 3: Sector-Wide Technical Capacity

The state has prioritized the generation of Medicaid performance measures as the HDU's first use case.

3.1 How would you characterize your sector's capacity to share Medicaid clinical data with HDU?

3.2 Are there shared technical or data resources that your organization could bring to the HDU to support your participants' abilities to submit real-time Medicaid clinical data to the HDU?

Participation in a QHIN enables a provider organization to engage in TEFCA for nationwide health data exchange and assists providers in fulfilling health information exchange requirements for programs like CMS [Quality Payment Program](#) and the [Medicare Promoting Interoperability Program](#).

3.3 How would you characterize your sector's capacity or readiness to participate in a QHIN?

A statewide HDU can provide the data foundation needed to support rural health transformation program goals to improve care delivery models in rural areas including the necessary infrastructure to enable rural provider participation in social referral networks which allow providers to send, receive, and resolve referrals for social needs, such as transportation or food delivery.

3.4 To what extent are providers in your sector already participating in a recognized social referral platform such as UniteUs, FindHelp, WellSky, Community CareLink or others?

Section 4: Readiness & Capacity Building

4.1 What anticipated value or concerns have your members expressed regarding participation in a statewide HDU?

4.2 Are there specific subgroups of your sector (e.g., rural, small, under-resourced) that may need additional support? If yes, what type of support is needed?

4.3 What types of capacity-building resources do you perceive would be most impactful (e.g., funding, technical assistance, peer learning) to your provider sector?

4.4 How could your organization help facilitate readiness and/or onboarding efforts with providers in your sector?

Section 5: Engagement & Communication

5.1 What are the most effective channels for engaging your members (e.g., newsletters, webinars, regional meetings)?

5.2 Are there existing forums or workgroups where HDU planning could be integrated?

5.3 Would you be open to co-developing sector-specific readiness strategies or pilot initiatives?

Section 6: Closing Reflections

6.1 What other opportunities do you see for your sector to lead or innovate through HDU participation?

6.2 Are there risks or unintended consequences we should be aware of as the statewide HDU planning and formation evolves?

Thank you for contributing your thoughts and opinions on behalf of your provider's segment!

Exhibit I. Missouri Health Data Ecosystem Assets and Exchange Capacity Detail

Health Information Networks Operating in Missouri

Missouri's four tenured HINs (LACIE, SHINE, Tiger Institute, and VHIEC) provide comprehensive services that support connectivity and the exchange of real-time data across healthcare providers and care settings including HL7 ADT notifications, lab and other clinical data, care summaries (CCDAs), and public health reporting feeds. Each HIN maintains secure, cloud based, multi-tenant platforms capable of routing clinical documents, managing identity resolution, and supporting cross organizational data movement. These networks have been operational for more than a decade and have established trust frameworks, technical standards, and governance models that enable consistent exchange across diverse provider environments to facilitate the transmission of clinical information to physician practices, laboratories, pharmacies, immunization and/or other registries, state agencies, and other designated recipients. ^[2,12]

LACIE primarily serves providers across western Missouri and partners with organizations in Missouri and Kansas. Its model emphasizes community impact, building partnerships that prioritize improved health outcomes and health community needs alignment. ¹⁹

SHINE, a partnership between the Missouri State Medical Association (MSMA) and KONZA Health, operates as a physician-led HIN connecting physician practices and clinics in Missouri. As a federally designated QHIN, SHINE is positioned to align Missouri with nationwide interoperability and to provide Missouri an immediate, TEFCA compliant digital backbone with QHIN participation. ²⁰

Tiger supports participants across multiple counties in Missouri and operates through a partnership between Oracle Corporation and Missouri University Health Care. This collaborative ownership model provides Tiger with direct access to the clinical expertise and analytical capabilities of a major academic medical center. ^[21]

VHIEC operates in Missouri and in adjacent regions, focusing on interoperability, care coordination, public health reporting, and supporting digital infrastructure for participating entities. VHIEC consolidates and standardizes functions across HIEs and TDSOs while maintaining alignment with local stakeholders and preserving existing community governance structures. VHIEC serves participants in Missouri and uses a proprietary use case methodology, Use Case Factory, to improve care delivery. ^[22]

Provider Association Data Assets and Supporting Infrastructure

Multiple private provider member associations operate in Missouri, including the Missouri Hospital Association (MHA), Missouri Primary Care Association (MPCA), Missouri Behavioral Health Council (MBHC) and others. Semi-structured and structured Interviews were conducted with MHA, MPCA, MBHC executives in October and in December 2025. Provider stakeholders were invited to participate in the assessment process to share information about their data and exchange assets used at their associations, perspectives and experiences related to the interoperability readiness of providers and that of the interoperability environment in Missouri. ^[8,16]

These private healthcare associations are notable contributors to Missouri's statewide health data ecosystem. Interviewees responded that, in addition to holding health data and technical assets, the associations have considerable relational, operational, and strategic assets with providers and others within the health data ecosystem. Due to the relationship-driven structure of their organizations, they have substantive, trust, influence and capability with their provider members that can potentially be leveraged by the state and the HDU to accelerate statewide interoperability. ^[8,16]

Professional associations maintain complementary data assets that significantly expand Missouri's interoperability capacity. MHA and its affiliated organization, HIDI, capture inpatient and outpatient claims data and real-time ADT (Admit-Discharge-Transfer) data for hospitals in Missouri. HIDI owns and operates a large master patient index (MPI), containing more than 180 million unique patient records and a proprietary analytics environment. MPCA maintains the Azara DRVS® platform, which aggregates clinical, claims, and immunization data to produce a complete patient history and supports NCQA DAV-validated data quality workflows for FQHCs in Missouri. The MBHC operates NetSmart's CareManager®, which ingests Medicaid claims, pharmacy data, emergency department feeds, and Department of Mental Health (DMH) data to support behavioral health coordination and crisis response. MBHC utilizes MOConnect, a digital bi-directional closed-loop behavioral health referral and communications platform, and the 988 platform for mobile suicide crisis response system in Missouri. ^[8,16]