KPMG

The rural health data imperative

From fragmented care to connected ecosystems





The Rural Health Transformation Program (RHTP) represents a rare opportunity for states to reshape the future of rural healthcare, marking a generational shift in how rural healthcare is funded, delivered, and sustained. With $50 billion invested over five years, the program is not simply an infusion of capital—it is a mandate for transformation.[1]

At its core, this transformation is not about buildings, beds, or even workforce alone. It is about data.

The success of rural health transformation will ultimately depend on whether states and providers can build a modern, integrated data infrastructure that turns fragmented information into actionable insight—and insight into better outcomes.

Source: 1- Centers for Medicare & Medicaid Services. Chapter 4: Protecting Rural Health Hospitals and Providers. U.S. Department of Health and Human Services.

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The mandate: Data at the core of rural health transformation

The Centers for Medicare & Medicaid Services (CMS) has made clear that technology, interoperability, and data-sharing are central to the program's design.

Investments are explicitly intended to:[2]

- Improve data sharing and interoperability
- Enable real-time care coordination
- Support technology-enabled care models (telehealth, remote monitoring, artificial intelligence (AI, etc.)
- Strengthen cybersecurity and digital infrastructure

States are not just encouraged—but expected—to modernize their data ecosystems as part of their transformation plans. Some states, for example, have set goals to modernize rural care delivery through digital forward solutions that emphasize the use of technology and data-driven approaches. These plans include broad adoption of AI tools to support documentation and provide real-time clinical decision support. Other states are focusing on creating centralized rural health data hubs that serve as statewide analytics platforms. These hubs integrate siloed data sources, support more effective rural health planning, enable predictive insights, and expand transparent access to timely and actionable information for providers, policymakers, and communities.[3]

This signals a clear shift: Data is no longer a supporting function—it is the foundation of rural health transformation.

Source: 2 - CMS, Chapter 4: Protecting Rural Health Hospitals and Providers.

3- Centers for Medicare & Medicaid Services. Rural Health Transformation: 50-State Spotlights. U.S. Department of Health and Human Services.

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The current reality: Fragmented, reactive, and incomplete

Despite progress in digitization, rural healthcare systems today face persistent data challenges. Siloed and underutilized information hinders effective decision-making, proactive care management, and the ability to address systemic issues. The existing data landscape poses significant barriers to RHTP success:



Disparate data sources:

Clinical, behavioral, social, and financial data may reside in multiple systems, including electronic medical records (EMRs), claims databases, public health registries, and specialized population health platforms.



Limited Health Information Exchange (HIE) participation:

Even in states with established HIE infrastructures, only a minority of rural providers actively exchange data.[4] This limitation constrains the ability to generate comprehensive population health insights, identify care gaps, and support clinical decision-making across the continuum of care.



Fragmented care delivery:

Across many rural communities, medical, behavioral, and social services often operate in isolation. This data siloing makes it difficult to achieve a holistic view of patients' health and social needs, leading to missed opportunities for coordinated care and inefficient resource allocation.



Reactive decision-making:

Data is often retrospective—used for reporting rather than real-time action.



Workforce and capability gaps:

Rural organizations often lack the analytics talent and tools needed to translate data into insight.

These challenges reinforce a cycle where decisions are made based on incomplete information—hindering both health outcomes and financial sustainability.

Source: 4- U.S. Government Accountability Office. Electronic Health Information Exchange: Use has Increased, but is Lower for Small and Rural Providers. GAO-23-105540, 21 Apr. 2023.

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Expanding the scope: Real-world data requirements

Research indicates that an estimated 20 percent of health outcomes are linked to clinical care; the remaining 80 percent stem from social, economic, environmental, and behavioral factors.[5] Because of this reality, the real-world data requirements for the RHTP go far beyond traditional clinical metrics.

To truly transform rural health, a comprehensive approach must encompass:



Clinical outcomes

Tracking improvements in chronic disease management (e.g., diabetes, hypertension, cancer), disease prevention, and prenatal care are fundamental goals of the RHTP. [6]



Access and utilization

Measuring increased access to primary and specialty care, changes in emergency department utilization, and the effectiveness of remote patient monitoring (RPM) and telehealth is crucial.



Workforce development

Data is needed to track provider-to-population ratios, clinician vacancy rates, training program participation, and retention rates to help ensure a sustainable rural workforce.



Financial sustainability

The success of value-based payment (VBP) models and the financial health of rural facilities (e.g., operating margins) must be continually monitored.

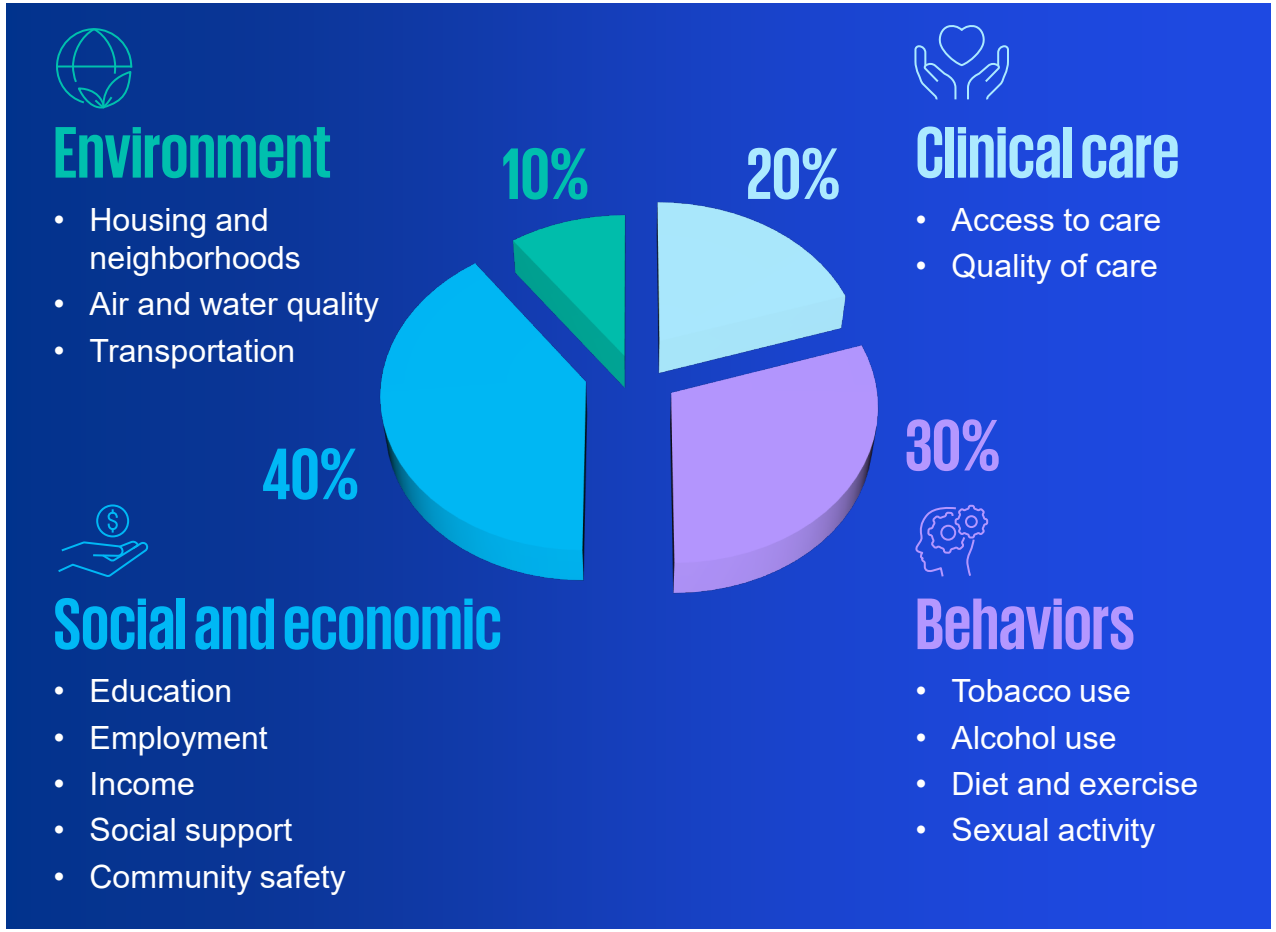
Source: 5- Hood, C. M., Gennuso, K. P., Swain, G. R., Catlin, B. B. (2016). County Health Rankings: Relationships between Determinant Factors and Health Outcomes. American Journal of Preventive Medicine, 50 (2), 129-135.

6- Centers for Medicare & Medicaid Services. Rural Health Transformation (RHT) Program Overview. U.S. Department of Health and Human Services.

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Addressing the 80 percent

Factors influencing health outcomes: Why RHTP requires a connected data ecosystem



Source: 7 - CMS, Rural Health Transformation: 50-State Spotlights.

Crucially, non-traditional data sources are becoming equal, if not more, vital, including:

Non-medical drivers of health (NMDOH):

Initiatives in some states aim to address “upstream wellbeing needs” by integrating nutrition supports with other NMDOH, such as transportation access and housing insecurity. Other states have established funding mechanisms that directly support community-led initiatives focused on addressing NMDOH. In addition, multistate or regional collaboratives have highlighted platforms that enable communities to capture and share community and social care data, supporting service planning grounded in real-world community needs.[7]

Community feedback:

Stakeholder engagement, including online forums and listening sessions, provides qualitative data essential for tailoring solutions that resonate with local populations.

Economic indicators:

The RHTP aims to stimulate rural economic development and workforce development, requiring data to track these broader societal impacts.

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The opportunity: From fragmentation to connected ecosystems

The RHTP creates an opportunity to redesign rural health systems. States now have the ability to:



- Build statewide, integrated data platforms
- Connect clinical and NMDOH metrics
- Enable cross-provider collaboration and regional networks
- Shift toward value-based, outcomes-driven care models
- Leverage AI and predictive analytics to extend limited workforce capacity

In short, the program enables a transition from fragmented systems to connected ecosystems.

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A new model: From data collection to decision intelligence

To fully realize this opportunity, states must move beyond incremental technology upgrades and build a truly integrated data foundation. By converting fragmented inputs into actionable intelligence, a comprehensive data integration model supports both real-time decision-making and federal reporting requirements. Ultimately, it provides a practical framework for shifting from isolated silos to coordinated, data-driven rural health strategies.

KPMG Resource Integration Suite (KRIS) INSIGHT for Rural Health provides a robust data integration foundation tailored for rural health initiatives. It empowers states and communities to collect a wide array of data from multiple systems of record, aggregate it into a centralized system of truth, and translate it into real-time analytics and standardized reporting. By supporting interoperability, advanced analytics, and federal reporting requirements within a single platform, KRIS INSIGHT reduces administrative burdens, enables data-driven decision-making, and supports program sustainability.

The CAANdiD data integration model

Operationalizing rural health data through KRIS INSIGHT for Rural Health

Collect

Gathers data from multiple Systems of Record (SOR), regardless of their current technology maturity or system vendors.

Pre-configured for EMR, HIE, pharmacy, claims, medical device, population health, economic, and program data feeds.

Aggregate

Links disparate information into a trusted System of Truth (SOT) by cleansing, cross-referencing, de-identifying (as needed), cataloging, and segmenting the data for analysis.

Utilizes an extended Fast Healthcare Interoperability Resources (FHIR) data model to centralize governance and elevate data quality standards.

Analyze

Delivers real-time analytics highlighting which communities are improving, which interventions are effective, and where to pool resources for maximum impact.

Built-in AI tools and pluggable machine learning (ML) models (when needed) unlock deeper insights.

Narrate

Presents data in standard consumable formats and narratable dashboards.

Pre-built templates and generative AI (GenAI) create clear narrative reports—including automated federal report generation and submission—freeing rural providers to focus on patient care rather than paperwork.

drive informed Decisions

Shares trends, gaps, and opportunities across SORs to continuously improve intervention strategies.

Dedicated connectors to EMRs and case management systems allow care teams to utilize broader, system-wide insights directly at the point of care.

This model transforms data from a passive asset into an active driver of transformation.

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The vision: A data infrastructure as the "central nervous system"

The future of rural healthcare depends on building a data and analytics infrastructure that functions as the central nervous system of the ecosystem. In practice, this future vision entails:

Integrated and interoperable platforms:

A move beyond fragmented systems to cohesive platforms that unify clinical, behavioral, social, and financial data. This looks like secure, interoperable solutions that meet industry standards such as HIPAA and FHIR.

Advanced analytics & AI:

Serving as the "turbo charge" of the ecosystem, this includes:

Predictive insights: Leveraging AI and ML to shift from reactive to proactive care models, anticipating patient needs and identifying at-risk populations early.

Clinical decision support: Using AI-based technology to enhance documentation, provide valuable insights, and perform real-time prior authorization and quality assessment gap analyses, significantly reducing administrative burden and clinician burnout.

Targeted interventions: Applying AI to identify untreated or undertreated patients based on existing guidelines, helping ensure that resources are utilized efficiently.

Real-time data and actionable dashboards:

Providing decision-makers with immediate access to performance metrics and outcomes. Customizable, AI-enabled dashboards and public-facing interfaces, as planned by some states, can offer timely, actionable data to guide policy decisions, resource allocation, and continuous improvement.

Human-centered design and digital literacy:

Ensuring technology is intuitive and accessible. This approach empowers patients to improve their wellness with data-driven insights from digital devices, utilizing AI-enabled consumer-facing applications for healthcare navigation and programs to enhance digital literacy among rural residents and providers alike.

Built-in sustainability:

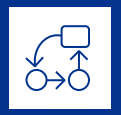
Integrating RHTP governance into the state's broader health strategies. A truly sustainable infrastructure includes long-term planning for ongoing funding and maintenance, ensuring that improvements thrive well beyond the initial grant period.

Ultimately, this represents the vital shift from volume-driven care to intelligence-driven care.

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Why a strong data infrastructure determines success

Without a strong data foundation, even the most well-funded initiatives will struggle to scale or sustain impact. A strong data analytics infrastructure acts as a central nervous system for rural healthcare, providing the insights needed to navigate complexity and drive meaningful change. It enables a shift from reactive to proactive health management, empowering patients and providers alike.



Informed decision-making and strategic planning

Data insights allow state agencies and providers to optimize outcomes through advanced data capabilities. This includes clarifying the healthcare landscape, identifying specific needs, and tailoring solutions to local populations. By synthesizing data, models can forecast demand, segment consumers, and test service-line scenarios, helping leaders prioritize the right mix of care services.



Operational efficiency and financial sustainability

Data analytics is crucial for improving decision-making and optimizing outcomes. It can streamline clinician workflows, reduce administrative burdens, and provide real-time visibility into patient health trends, enabling enhanced clinical decision-making. By reducing waste and redundancy, it helps ensure resources are deployed where they create the greatest value, strengthening access and advancing long-term financial sustainability for rural providers.



Personalized and accessible care experiences

Data helps create predictive and personalized experience-led models. Insights from digital devices empower patients to optimize their wellness, moving towards a proactive approach. Telemedicine, mobile apps, and remote monitoring, all fueled by data, provide convenient, personalized care anywhere, anytime, enhancing patient access.



Population health management and predictive insights

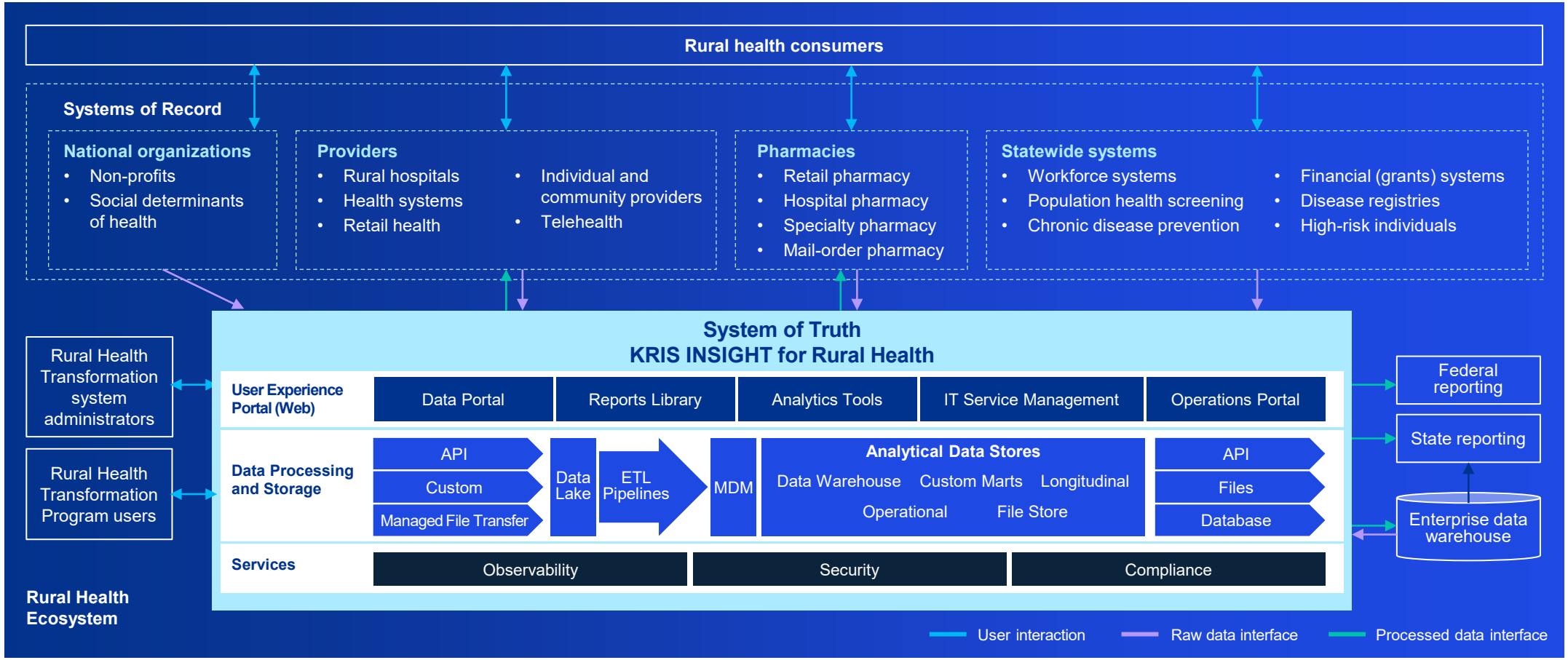
Data-driven insights from digital devices support proactive health management strategies. Platforms can help rural systems proactively identify at-risk patients, close care gaps, and deliver evidence-based interventions. AI and ML enhance healthcare delivery by helping optimize provider workflows and enabling predictive insights. For instance, predictive analytics can identify care gaps and promote proactive care, leading to fewer and less acute healthcare needs.

In contrast, weak data infrastructure risks turning transformational funding into temporary improvement.

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How KPMG can help: Accelerating data-driven transformation

KPMG LLP is uniquely positioned to help states and rural health systems navigate the complex landscape. With decades of experience at the intersection of government, healthcare, and technology, we are an agile team with a tested track record in executing complex, large-scale data-driven transformations. We combine deep industry knowledge with cutting-edge, AI-enabled solutions to help drive sustainable, long-term impact for rural communities.



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Deep knowledge across the healthcare ecosystem

Our team possesses extensive experience serving federal, state, and commercial healthcare clients. This diverse background provides us with a thorough understanding of the broader healthcare ecosystem, which is critical for navigating the complexities of the RHTP and its diverse stakeholders. We are at the forefront of supporting current RHTP initiatives, bringing direct, hands-on experience working with states to solve specific rural health challenges and implementing intelligent, data-driven models that drive lasting success.

KRIS INSIGHT for Rural Health

A strong data integration foundation is vital for modernizing rural healthcare. KRIS INSIGHT for Rural Health is designed to power a connected ecosystem, equipping state agencies and local providers with the tools to manage, monitor, and leverage data effectively. It enables stakeholders to track data flow across disparate systems, identify gaps early, and deliver trusted reporting—shifting rural health networks from reactive compliance to proactive, data-driven insights. KRIS INSIGHT for Rural Health helps states turn fragmented information into actionable insights. By serving as a centralized engine that automates federal report generation, it lifts the heavy administrative burden of compliance. This helps rural providers meet mandated guidelines, retain vital funding, and focus on what matters most: patient care.

Designed with flexibility in mind, the KRIS INSIGHT for Rural Health is a highly scalable application that grows alongside your initiatives—from initial pilot sites to full statewide rollouts—without the need for complex system rebuilds or data migrations. It can be quickly deployed and configured to meet the specific integration and operational needs of different states and clinics. Crucially, the platform is built to support strict federal security requirements, including Health Insurance Portability and Accountability Act (HIPAA), Federal Information Processing Standards (FIPS), and Code of Federal Regulations (CFR) compliance, helping ensure sensitive health data remains protected at every level.

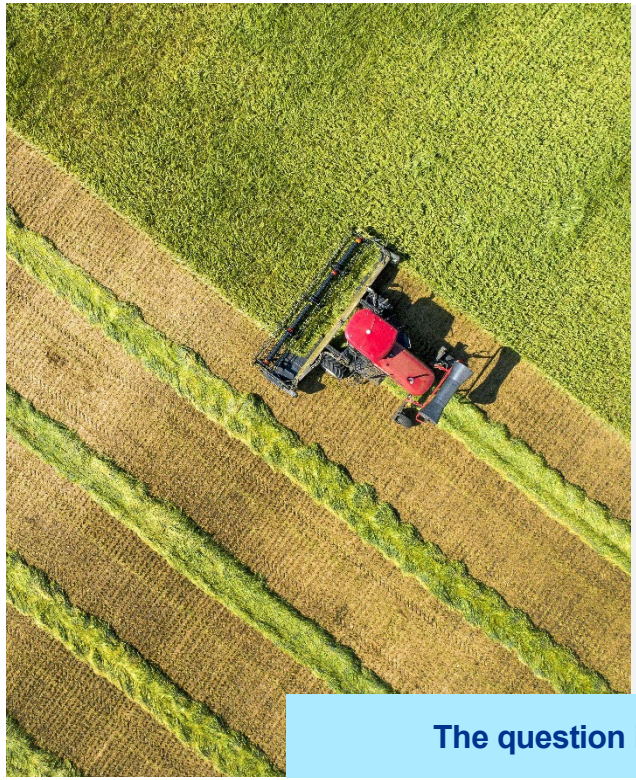
Transformation advisory services

Beyond the technology of the KRIS INSIGHT for Rural Health, we help bridge the gap between federal policy and frontline care. We pair our cutting-edge data solutions with comprehensive transformation advisory services. From initial strategy and program design to change management and governance, KPMG provides the holistic support needed to help drive successful transformation efforts that help ensure sustainable, long-term health outcomes for rural communities.

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Conclusion: Data as the catalyst for rural health transformation

The CMS RHTP is more than a funding initiative—it is a call to redesign rural healthcare for the future. But transformation will not be achieved through funding alone. It will be achieved through data—connected, trusted, and actionable.



The success of rural health transformation depends on a state's ability to collect, interpret, and act on meaningful data. When states invest in strong data analytics infrastructure, including health information exchanges, advanced tools such as AI, and remote monitoring capabilities, rural communities gain the ability to overcome long standing barriers. These investments support better patient outcomes, greater operational efficiency, and improved financial stability. They also create the foundation for personalized and proactive care that can strengthen the health and resilience of rural populations for years to come.

The RHTP offers a rare opportunity to renew and strengthen rural healthcare. Yet the degree of its success will ultimately be determined by the strength and maturity of the data analytics systems that support it. Building integrated, intelligent, and accessible data infrastructure is not a secondary task. It is the essential engine that will drive meaningful change and help ensure that every dollar invested delivers measurable improvements in access, quality, and outcomes for the millions of people who rely on rural health systems.

The question is no longer whether to invest in data. It is whether rural health systems can afford not to.

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