Beyond health metrics

A data-driven framework for making and measuring sustainable rural health investments

The Rural Health Transformation Program (RHTP) presents a pivotal opportunity for states to rethink how they strengthen rural healthcare delivery and economic resilience. While today's challenges may feel unprecedented, states are not starting from scratch. The COVID-19 pandemic generated a blueprint that demonstrated how real-time data sharing, rapid-cycle evaluation, cross-agency collaboration, and flexible resource deployment can drive measurable health and economic impact, even in the most resource-constrained environments. These experiences revealed a set of enduring lessons that remain central to how states can strengthen rural health systems today. By reframing RHTP through the lens of these tested approaches, state leaders can demonstrate that improving rural health is not only a clinical priority but a strategic economic investment. This article outlines a data-driven framework to help state leaders make evidence-based investment decisions and demonstrate the strategic use of funds for sustainable solutions with long-lasting impacts on federal funders, state legislators, and the communities they serve.

COVID lessons for rural health transformation

1. **Real-time reporting drives faster and more strategic decision-making:** COVID surveillance tools helped states stay ahead of emerging needs through continuous monitoring, demonstrating the value of similar monitoring and surveillance tools today to track key performance indicators, streamline compliance, and enable rapid evaluation.

2. **Predictive modeling helps leaders plan beyond immediate crises:** Forecasting methods used during COVID demonstrated the usefulness of forward-looking analysis (e.g. anticipating hospital burden), reinforcing the advantages of utilizing predictive modeling today to project long-term clinical and financial outcomes of rural health initiatives beyond the short-term reporting cycles.

3. **Holistic approaches reveal benefits traditional metrics miss:** COVID accelerated recognition that public health improvements generate far-reaching societal and economic gains, which can be quantified using Social Return on Investment (SROI). States can leverage SROI analysis to assign a clear dollar value to benefits such as improved workforce productivity and health outcomes.

4. **Economic ripple effects matter:** As with pandemic response funding, which stimulated local employment, generated tax revenue, and strengthened community resilience, rural investments can produce similar economic benefits. By utilizing Economic Impact Analysis (EIA), states can quantify how grant dollars multiply through the local economy as jobs, tax revenue, and overall growth.

A practical framework for evaluating rural health transformation initiatives

Our logic model for building, monitoring, and evaluating the performance of healthcare department programs provides a strategic framework to support states in achieving long-term outcomes of the RHTP.

Overall mission → **Department programs** → **Long-term ROI**

Objectives & goals

Healthcare access

- Improve healthcare accessibility
- Improve preventative care
- Increase care coordination

Workforce

- Strengthen education pathways
- Expand regional upskilling
- Grow non-physician capacity
- Attract and retain talent

Technology & tools

- Modernize infrastructure and connectivity
- Improve cybersecurity

Inputs

Funding & programs & tools

- Grants & investments
- Education & upskilling programs
- Train-the-trainer programs
- Technical assistance centers
- Hub & spoke networks
- Patient-centered tools

Outputs

Direct & immediate effects

- Staff hiring
- EHR adoption rate
- Telehealth usage
- Preventative care provided (e.g. vaccines and primary care)
- Training certificates

Outcomes

Long-term effects to participants or the state

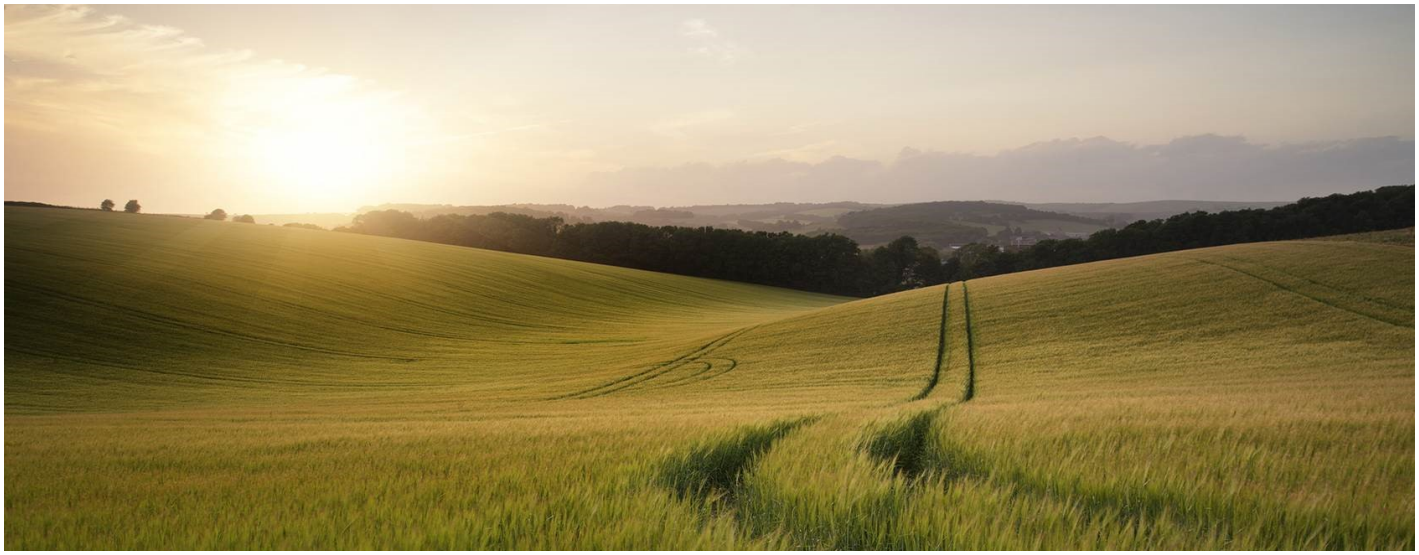
- Fewer preventable maternal complications
- Local provider capacity
- Improved care coordination
- Improved patient satisfaction
- Reduced hospitalizations
- Reduced disease burden
- Improved worker productivity

Communications

Communications & feedback
Community input I Stakeholder feedback

Monitor & respond

Monitor, evaluate, & recalibrate
Data analytics I Surveillance tools I Monitoring dashboards



Challenges to reporting the economic success of rural health initiatives

While the economic case for the RHTP is compelling, demonstrating its success is complex. State leaders face significant hurdles that obscure the true return on investment (ROI) and threaten long-term support. These challenges fall into two primary areas:

I

The measurement dilemma: capturing long-term, holistic value

The most profound economic benefits of RHTP are difficult to quantify with traditional metrics, especially as decision makers are often required to respond rapidly to community needs with limited information at hand. This is due to three main factors:

1. **Time lag of impact:** The most significant returns from preventative care may not materialize for years, a reality that clashes with short-term grant reporting cycles demanding immediate results.
2. **Quantifying soft outcomes:** Traditional, short-term financial metrics may not easily capture some RHTP initiatives, such as preventative care promotion, a better-trained local workforce, or improved community well-being.
3. **Divergent definitions of success:** Key stakeholders often define success differently, making it challenging to create a unified reporting strategy that satisfies all expectations.

II

Strategic pressures: navigating compliance and data scarcity

Translating this strategic vision into on-the-ground reality requires navigating significant day-to-day pressures that extend beyond the initial planning stages. Beyond measurement, state leaders face intense operational pressures that hinder their ability to demonstrate value effectively, including:

1. **Reporting and compliance requirements:** Rigorous Centers for Medicare & Medicaid Services (CMS) reporting requirements, coupled with the risk of funding clawbacks, create an urgent need for real-time metrics that prove both progress and compliance with program requirements.
2. **Data availability and quality:** Rural areas often suffer from a lack of robust data infrastructure. The challenge is often the difficulty of obtaining clean, reliable data in a timely manner.
3. **Fostering long-term sustainability:** To build a self-sustaining ecosystem with a fixed budget, states must prioritize investments with the strongest evidence of long-term value and lasting rural health improvements.

States can take an economic approach to demonstrate impact and plan for sustainable initiatives

To secure support and justify long-term investment, state leaders must demonstrate the value of transformation programs today, even before all the results are in. An economic monitoring and evaluation framework that is built on a logic model makes this possible. By applying modeling and statistical analysis, states can move beyond hope and instead forecast the tangible, long-term outcomes of their initiatives. This process begins with establishing a clear data baseline to understand the current state of rural health. From there, predictive modeling can be used to project how specific interventions will change that baseline over time, creating a powerful, evidence-based narrative about the future value of today's investments. The following set of tools can be used to achieve these objectives:

1

Monitoring and surveillance tools

To prevent funding clawbacks and help maximize potential federal funding, states should regularly monitor outputs to help ensure that they are approaching their pre-specified milestones. Monitoring and surveillance tools track key performance indicators, developed in conjunction with state policymakers, to streamline performance reporting, allowing for rapid cycle evaluation. These tools also establish a clear baseline of where states currently stand, which is essential for measuring progress and comparing actual results to projected outcomes.

How it works:

Monitoring and surveillance tools establish a direct link between key programmatic sources and a custom-built monitoring and surveillance engine to process, aggregate, and report performance metrics in regular (e.g., monthly) intervals. For instance, care quality and access metrics can help track the progress of educational programs for nurses and doctors designed to improve the level of care. A user-friendly dashboard can be developed with which users can explore specific RHTP-funded initiatives, compare outcomes across geographies, and generate automated reports for policymaker reviews. For example, the CMS Mapping Medicare Disparities Tool provides states with a robust framework to track chronic conditions in the population and managed care performance, while the Centers for Disease Control and Prevention (CDC) COVID Surveillance and Data Analytics Platform demonstrates the effectiveness of real-time data aggregation and reporting in public health initiatives.[1,2]

Why it matters:

With these tools, states are provided with the capability to proactively manage their initiatives instead of just retroactively reporting on them. The ultimate result is a measurable lift in the impact of each dollar spent, which in turn helps maximize federal funding and reduces the likelihood of a funding clawback.

2

Forecasting of initiative outcomes

RHTP initiatives may take time to generate significant and measurable improvements in outcomes. Predictive modeling gives policymakers the ability to see beyond the short-term and better understand how initiatives could improve population health outcomes in the long term.

How it works:

Predictive modeling uses robust statistical, econometric, and machine learning methods to turn historical data into dependable forecasts of long-term costs and benefits of different RHTP-funded initiatives. States can use these tools in evaluating and prioritizing initiatives by their expected long-term economic return such as using medical claims data to predict changes to high-dollar clinical outcomes for specific initiatives. For instance, a state can use predictive modeling to evaluate the impact of investing in preventative care programs, such as diabetes screening and early intervention initiatives. By leveraging historical claims data and population health trends, the model can forecast the reduction in costly complications and hospitalizations that can turn into healthcare cost savings in the future. As an example, the CDC's predictive modeling approach for COVID hospital burden, which primarily focuses on short-term forecast data, incorporates methodologies and data sources that are also fundamental for long-term projections.[3] By calibrating long-term models using immediate and short-term forecasts, decision makers can gain an improved understanding of potential outcomes and better plan for sustainable initiatives.

Why it matters:

Looking beyond the immediate impact, states can forecast the long-term effects of their initiatives on health outcomes, as well as metrics in areas such as telehealth usage and patient engagement. By gaining insights into future outcomes, policymakers are empowered to more effectively tailor initiatives to achieve the desired objectives. The insights gained from this approach can support evidence-based decision making across a wide range of scenarios.

3

Holistic value measurement with social return on investment

Policymakers concerned with the broader societal benefits of initiatives can use SROI to capture both the economic gains of a healthy and more productive workforce, as well as the value of policy objectives such as better maternal or chronic disease outcomes.

How it works:

SROI is a practical way to measure and assign a dollar value to social, environmental, and economic value created by an initiative. By leveraging data and forecasts, outcomes of an RHTP-funded initiative such as a healthier population (as measured by quality adjusted life years or Quality-adjusted life years (QALYS)), increased workforce productivity, and reduced demand for social services, can be translated into dollar savings and compared against the cost of implementation to identify the most cost-effective initiatives before they are implemented. For instance, we can evaluate the positive impacts of more obstetric and gynecologic (OBGYN) care sites on maternal health outcomes and compare the monetized benefits to the cost of the program. Other initiatives to improve maternal health can be evaluated similarly to help identify the most cost-effective program to achieve a desired outcome. The Department of Health and Human Services published a framework for valuing COVID risk reductions that demonstrate how quality-adjusted life years (QALYS) and Value of a Statistical Life (VSL) metrics can be used to quantify the benefits of public health investments.[4] This approach allows quantified benefits to be compared to program costs, enabling decision makers to determine the net benefit of an initiative and its SROI.

Why it matters:

This approach allows for a more comprehensive evaluation for decision makers of RHTP-funded initiatives, monetizing and accounting for wider benefits to society and comparing them against the cost.

4

Foundational assessment with economic impact analysis

To address policymakers' concerns about the near-term economic impacts of rural policy initiatives, Economic Impact Analysis (EIA) can help show how far grant dollars go through the broader economy.

How it works: EIA is a methodology that estimates the impacts of an investment, such as establishing a rural care program, throughout the local economy. Using an input-output (IO) model, it measures how initial spending, such as funding grants, educational programs, and technical assistance, generates direct and downstream impacts through the wider community's economy. Programmatic data can be used to classify spending amounts of RHTP-funded initiatives by industry categories, such as construction, new medical services, or local procurement. This classified spending can then be incorporated into the IO model to produce model outcomes and analyze economic impact. These impacts include jobs and wages created or supported, contributions to gross state product, and tax revenue generated from economic activity supported by an initiative.

Why it matters:

Program success is ultimately measured by long-term outcomes that create a ROI. This analysis allows states to quantify the economic benefits of RHTP-funded initiatives to the community and the state in terms of economic activity, generated tax revenue, and supported jobs and labor income. Spending can be categorized to show which source generates the greatest positive impact on the community.

A new narrative for rural investment

RHTP presents an opportunity for states to redefine rural healthcare; however, data scarcity that is common in rural environments, as well as the difficulties unique to evaluating the outcomes of health initiatives, which may not be reflected in the short-term financial metrics, present challenges to assessing the effectiveness of any health program. The COVID-19 pandemic demonstrated solutions that could also be applied to challenges associated with rural health. Applying a rigorous framework that identifies and monitors key performance indicators and borrows from a toolbox of economic analyses empowers leaders to make evidence-based and defensible investment decisions to demonstrate success to federal funding administrators, state legislators, and the communities they serve. This, in turn, allows states to shift the narrative from simply administering a health program to strategically orchestrating a transformation plan that improves both health and economic outcomes of their residents.

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