

Rural Health Infrastructure Modernization Initiative

Team 76
October 2025



Outline

[1] Issue Analysis

- A. Status Quo,
Background Data
- B. Analysis of Existing
Policies
- C. Problem Statement

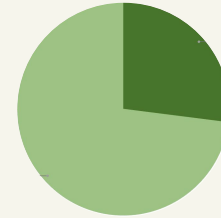
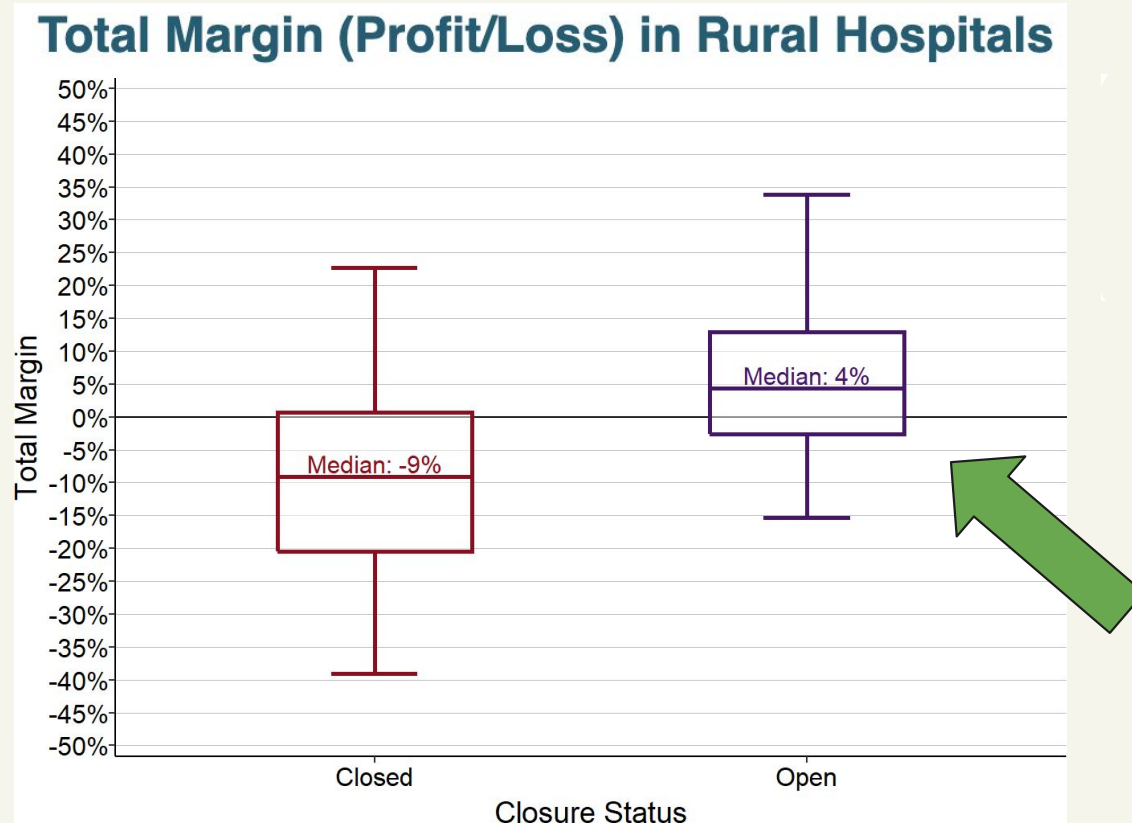
[2] Policy Proposal

- A. Solution to Revenue
Losses
- B. Solution to Poor
Health Outcomes

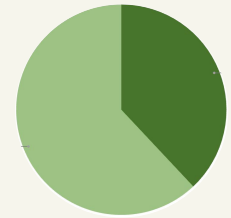
[3] Policy Analysis

- A. Implementation
Timeline
- B. Estimated Costs
- C. Limitations

Revenue Losses In Rural Hospitals



27% vulnerable to closure.



38% operate on negative margins.

Causes of Low Margins:

- **Losses on Patient Services**
- **Low Financial Reserves**

Billing and Insurance-Related Expenses

TABLE 1

Administrative costs in the U.S. health care system

Estimated costs related to billing and insurance, 2019

Category	Annual cost in billions
Providers (physicians, hospitals, and others)	\$282
Private insurers	\$158
Public programs	\$56
Total	\$496

Source: Authors' calculations based on National Academy of Medicine, "Excess Administrative Costs," in Pierre Yong, ed, The Healthcare Imperative: Lowering Costs and Improving Outcomes: Workshop Series Summary (Washington: National Academies Press, 2011); Centers for Medicare and Medicaid Services, "National Health Expenditure Data," available at <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html> (last accessed January 2019).



Annual expenditure on billing and insurance = **inefficient**

Medical billing errors = ~ **\$125 billion** annually

Causes of inefficiency:

1. Inefficient RCM
2. Coding Errors
3. Inaccurate Charge Capture
4. Claim Denials
5. **Outdated Billing Practices**

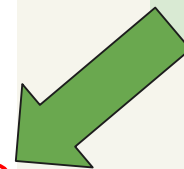
Revenue Lost Through Incorrect Billing

Larger proportion for rural health systems – outdated billing systems

Measure	WellSpan 2021–2023	Vanderbilt 2020–2023	UCLA 2021–2023
Patients			
Total	387,131	138,265	276,178
Persons using tobacco, total primary care encounters	169,219	44,826	18,843
Persons using tobacco, encounters billed for cessation	519 (0.3%)	464 (1.04%)	308 (1.6%)
Unbilled encounters	168,700	44,362	18,536
Excluded visits ^a	34,533	1,520	2,395
Eligible visits	134,166	42,842	16,141
Potential reimbursement by insurance type			
Commercial	\$752,350.28	\$595,672.72	\$270,485
Medicare	\$667,462.40	\$195,837.54	\$42,361
Medicaid	\$562,526.69	\$14,043.20	\$2,084
Total	\$1,982,339.38	\$805,553.46	\$314,931

Underbilling for CPT code: **99406**, Brief Tobacco Cessation Counselling.

Combined revenue loss of almost **\$3 million dollars** from just **one code**



Administrative Workload



Provider time spent on **non-clinical, administrative** duties.

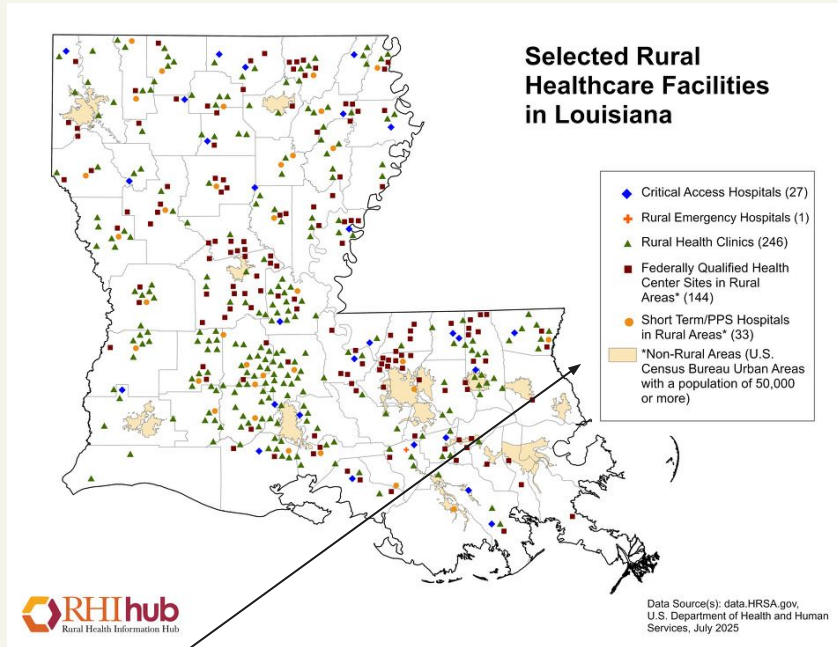


Shift away *from direct patient care*



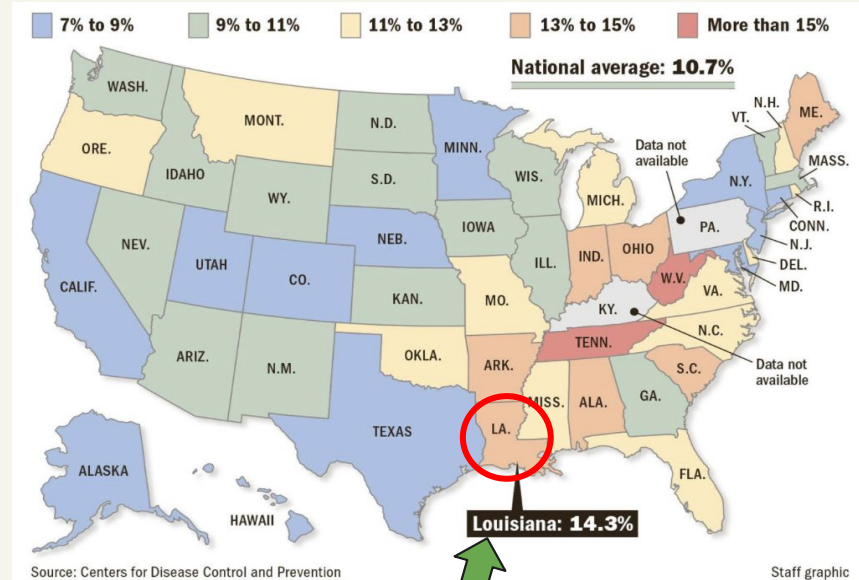
Reduces job satisfaction and increases rate of *professional burnout*.

Poor Health Outcomes: Rural & Elderly Populations



Reliance on **small clinics and health centers**

Major gaps: **Northern and central** regions



Louisiana ranks **ABOVE** the national average for rate of chronic illness

Recent Initiatives

GUMBO 2.0 Broadband Expansion Program

- Launched in 2023 by ConnectLA
- \$1.35 billion program
- Expands high-speed internet to 140,000 underserved homes, hospitals, and schools.
- Its purpose is to modernize the digital infrastructure in Louisiana.

CDC Grant NE11OE000005

- A \$64.8 million CDC award to Louisiana
- Goal of modernizing:
 - Public health systems
 - Data
 - Labs
 - The workforce

1. *GUMBO 2.0 (BEAD)*. (2024). Connect LA. <https://connect.la.gov/gumbo-2>

2. *Enhancing LA's Public Health Infrastructure & Workforce*. (2021). HigherGov.com; HigherGov. <https://www.highergov.com/grant/NE11OE000005/>

Problem Statement

Louisiana's rural healthcare infrastructure is fragmented, outdated, and hard to access, leaving many residents without consistent or coordinated care

1. Administrative inefficiencies:

- a. Strain** on health systems
- b. Revenue loss**
- c. Fewer resources** for patient care

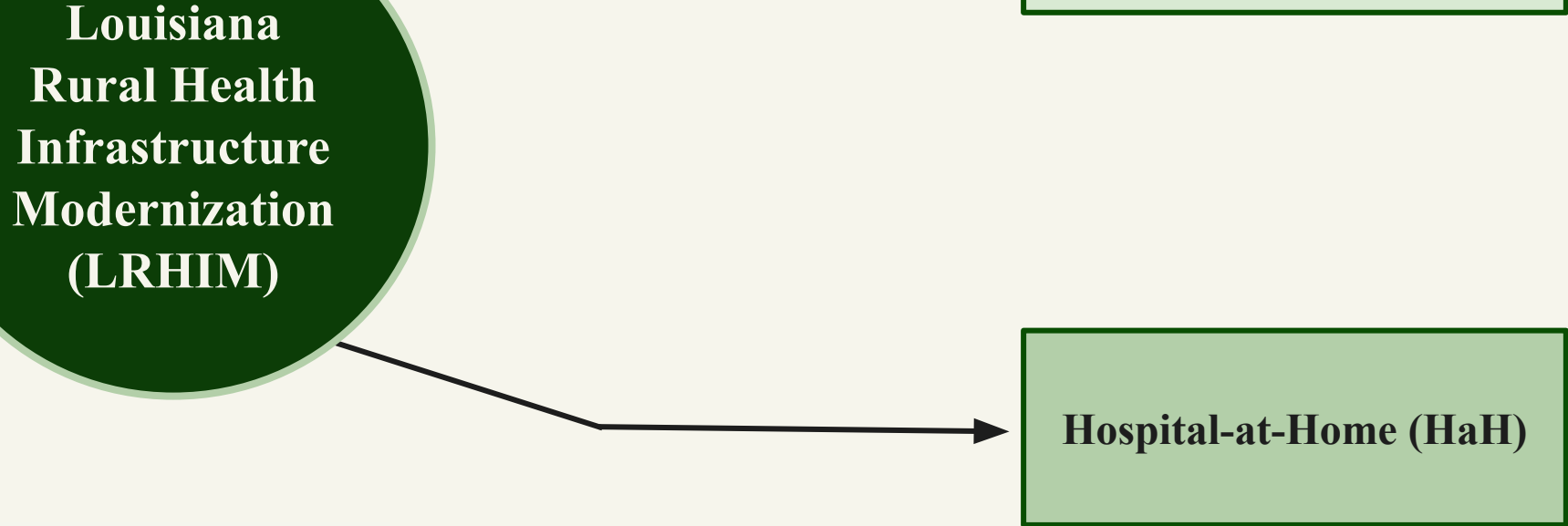
2. Poor Health Outcomes:

- a. Higher rates** of hospitalization, chronic illness, and preventable deaths
- b. Limited access** to continuous and coordinated care

Policy Proposal

A Two-Pronged Approach

**Louisiana
Rural Health
Infrastructure
Modernization
(LRHIM)**

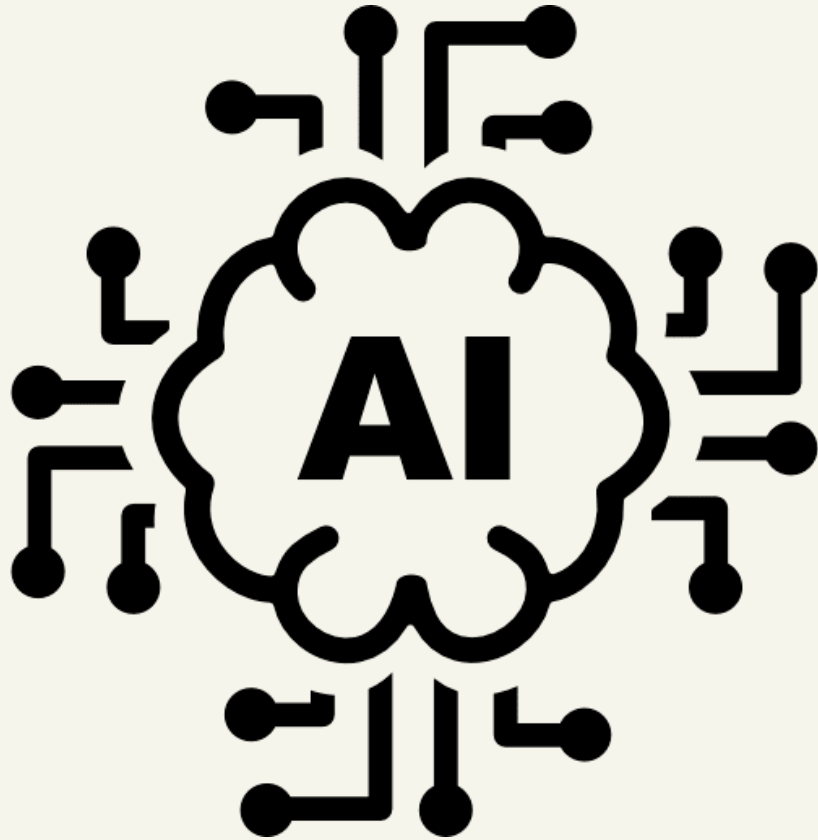


```
graph LR; LRHIM((Louisiana Rural Health Infrastructure Modernization (LRHIM))) --> AWI[Automated Workflow Integration]; LRHIM --> HaH[Hospital-at-Home (HaH)];
```

The diagram illustrates a two-pronged approach originating from the Louisiana Rural Health Infrastructure Modernization (LRHIM) initiative. A central dark green circle labeled 'Louisiana Rural Health Infrastructure Modernization (LRHIM)' has two arrows pointing to the right. The top arrow points to a light green rectangular box labeled 'Automated Workflow Integration'. The bottom arrow points to another light green rectangular box labeled 'Hospital-at-Home (HaH)'.

**Automated Workflow
Integration**

Hospital-at-Home (HaH)

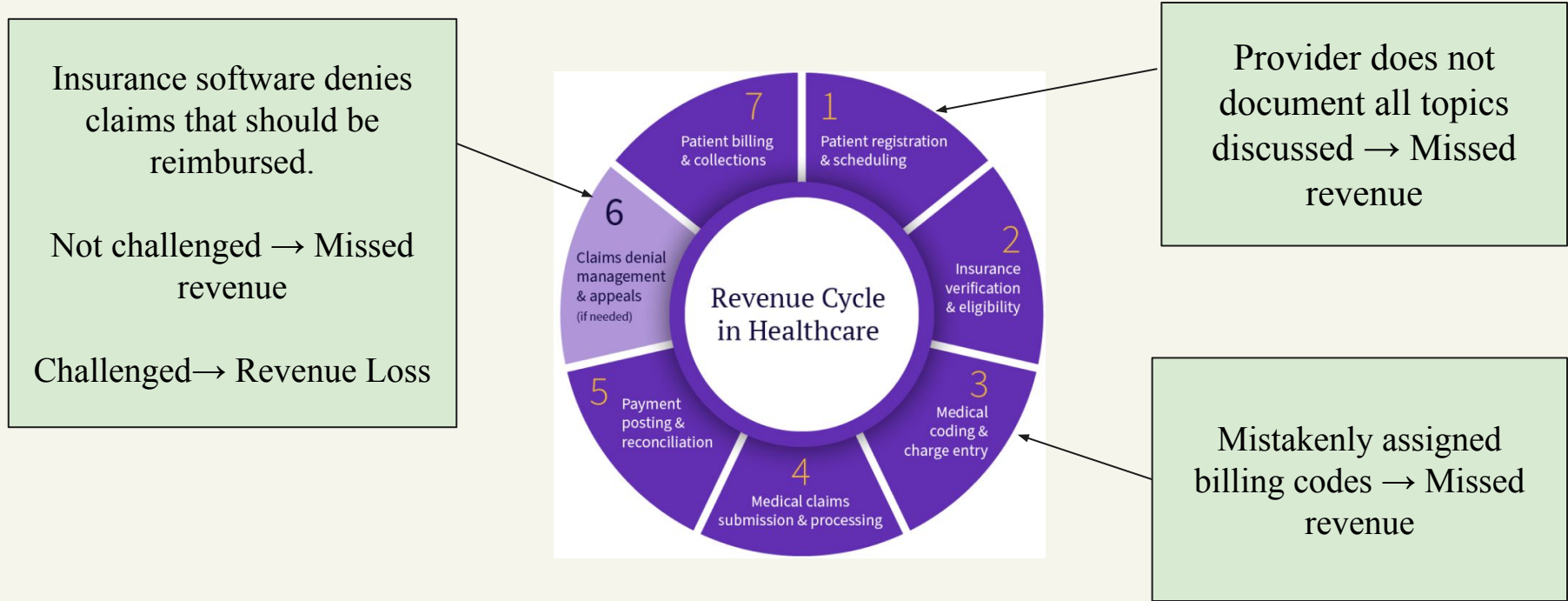


2.1

Billing Infrastructure Digital Modernization Program

Reduce administrative **burden**, **costs**, and **errors** of
inefficient RCM processes.

Points of Revenue Loss in RCM



Billing and Insurance-Related Expenses

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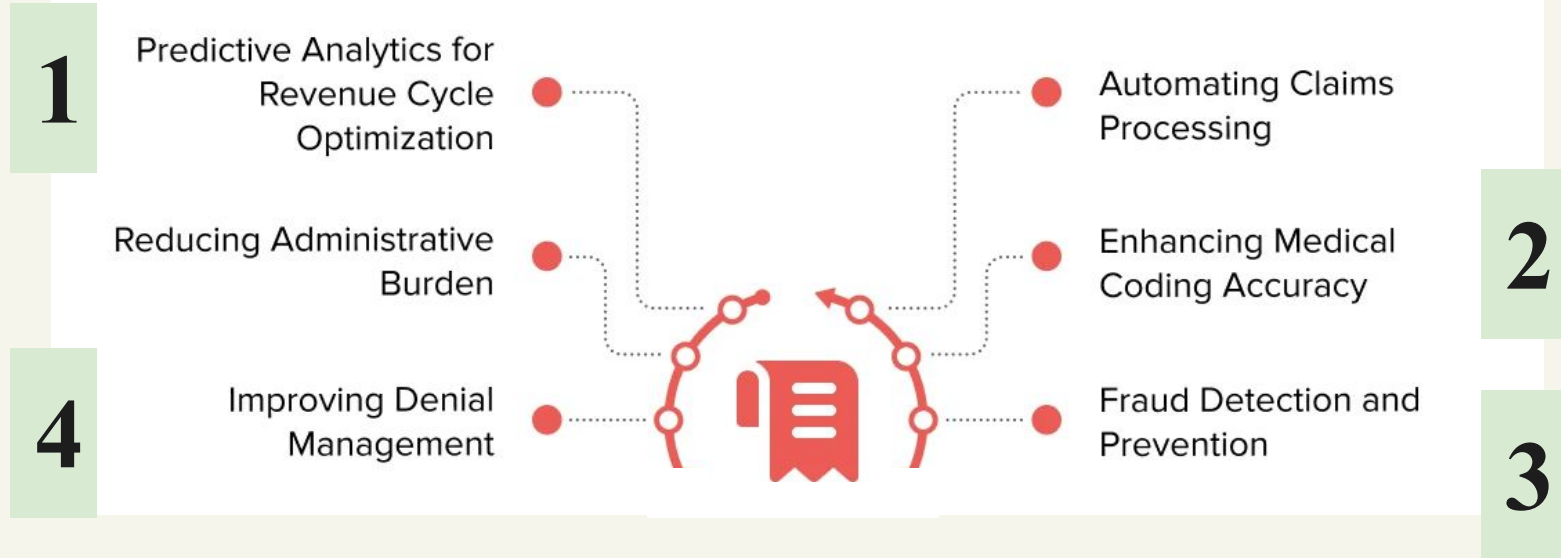


Annual expenditure on billing and insurance = **inefficient**

Causes of inefficiency:

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5. **Outdated Billing Practices**

AI Applications in Medical Billing



3-5% – Billing errors

20% – Revenue leakage

Digital Workflow Integration

1. AI-Powered Ambient Scribe Integration:

- a. **Tool:** Ambience Healthcare's AI Scribe
- b. **Process:** Captures patient-provider conversations; Generates notes, after-visit summaries, and structured EHR entries.
- c. **Outcome:** Reduced documentation burden, more accurate coding, faster billing

2. Automated Documentation and Coding Validation Review:

- a. **Tool:** AI-based ICD/CPT code validator
- b. **Process:** Checks provider notes for compliance; cross-references documentation to ensure optimal code selection.
- c. **Outcome:** Minimized undercoding/overcoding, fewer payer audits, and faster reimbursements.

3. Automated Denials Management System:

- a. **Tool:** Automated appeal generator with learning algorithm
- b. **Process:** Predicts denials; flags denied claims; auto-generates customized appeals based on payer rules.
- c. **Outcome:** Reduced loss from denied claims and faster revenue cycle.

AI Scribes, Automated Documentation Review

Use of Ambient AI Scribes to Reduce Administrative Burden and Professional Burnout

Kristine D. Olson, MD, MSc^{1,2}; Daniella Meeker, PhD³; Matt Troup, PA-C⁴ ; [et al](#)

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- Decreases administrative **workload**
- Eases professional **burnout**
- Improve patient **access**

CDI queries:

- **Disrupt clinical workflows**
- **Increase physician burnout.**

Implementation Science

Effect of an AI-powered clinical workflow tool on CDI queries

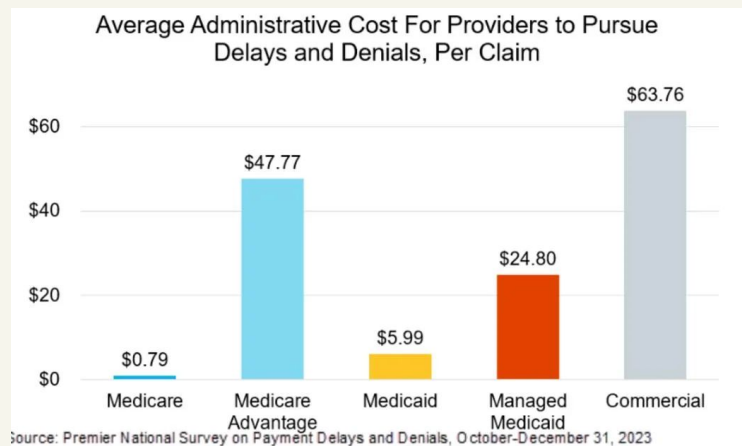
Francisco N. Alvarez  & Ross Koppel 

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 Cite this article  <https://doi.org/10.1080/29947448.2025.2520761>  Check for updates

CDI query rate by tool use								
	Before training			After training				
	Queries	Encounters	Query rate (%)	Queries	Encounters	Query rate (%)	Absolute difference (%)	Relative difference (%)
Full user	1993	19,682	10.1%	947	11,742	8.1%	−2.1%	−20.4%
Reference user	87	2,804	3.1%	39	1558	2.5%	−0.6%	−19.3%
Non-user	483	5,427	8.9%	241	2384	10.1%	1.2%	13.6%
Total	2563	27,913	9.2%	1,227	15,684	7.8%	−1.4%	−14.8%

Automated Denials Management System

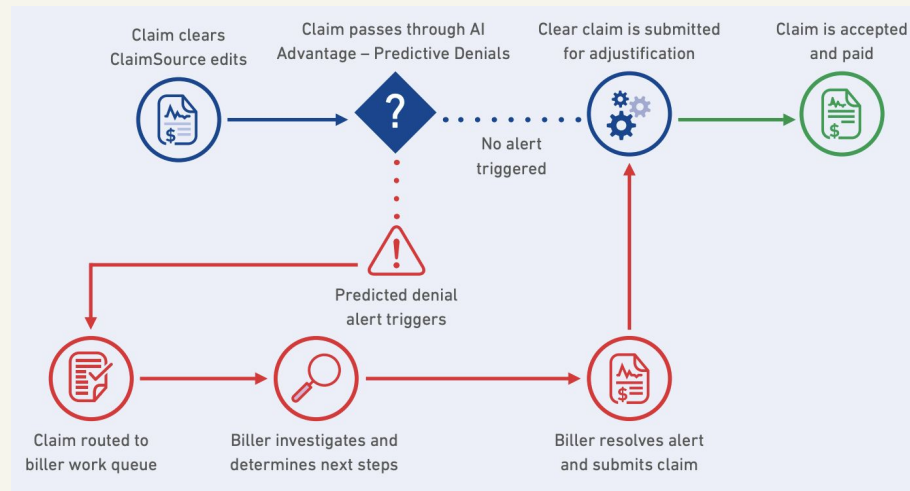


Average cost = **\$43.84 per claim.**

- 3 billion claims/year → **\$19.7 billion a year**
- 54.3% overturned and claims paid → **~\$10.6 billion wasted**

Schneck Medical Center:

- **4.6% average monthly decrease** in denials
 - Time spent on corrections **decreased by 4x.**
- **83%** of healthcare organizations reported AI-driven automation **reduced claim denials by at least 10%**



Cost Estimates of AI Integration

Generative AI Infrastructure Cost Estimate (451 facilities)

Technology	Number of Facilities	Average Startup Cost (Tech +training)	Annual Operating Costs	Total Year-1 Cost (Startup +Operating cost)	Estimated Annual Savings / Added Revenue per Site	Total Statewide Savings / Added Revenue	Net Year-1 Cost (After Savings)
Ambience AI Scribe	451	\$2,800	\$89*12= \$1,068	\$1,744,468	\$15,000 per site (avg time / revenue gain)	\$6,765,000	\$1,744,468 – \$6,765,000 = – \$5,020,532 (net positive)
Automated Documentation Review	451	\$20,000	\$10,000	\$13,530,000	\$250,000 per site (billing accuracy, missed revenue recovery)	\$112,750,000	\$13,530,000 – \$112,750,000 = – \$99,220,000 (net positive)
Automated Appeals System – SmarterX	451	\$15,000	Contingency≈ 20% of added revenue≈ \$40,000 per facility	\$24,805,000	\$200,000 per site in recovered claims	\$90,200,000	\$24,805,000 – \$90,200,000 = – \$65,395,000 (net positive)
Total (Statewide)	451	-	-	\$40,079,468	-	\$209,715,000	–\$169,635,532 (net positive impact)

1.Coleman, K., & Coleman, K. (2024, July 10). *Lowering Health Care Costs Through AI: The Possibilities and Barriers*. Paragon Health Institute.

<https://paragoninstitute.org/private-health/lowering-health-care-costs-through-ai-the-possibilities-and-barriers/>

2.Ionasec, R., Russ, C., Hackenberg, R., Wiggins, J., Ratan, U., Siddiqui, K., Tremblay, J., Arumugam, P., Sommer, W., Van Der Laak, J., Pancholi, M., Larbey, J., Amarasingham, R., Capulli, M., Riposati, A., & Rizzoli, A. (n.d.). *Generative AI for Healthcare*. Retrieved October 19, 2025, from https://pages.awscloud.com/rs/112-TZM-766/images/AWS-GenAI-for-HCLS-Whitepaper_062024.pdf?

3.Singh, N. (2025, March 18). *EHR Implementation Cost and Budgeting Guide 2025*. OmniMD. <https://omnimd.com/blog/ehr-implementation-costs-guide-healthcare-providers/>

Rural AI Sustainability Funding Model

Year	Estimated Fund (\$ Millions)	Primary Funding Sources
Year 2 (2026 - 27)	\$20 M	• 5 % of hospital AI savings (~\$10 M) reinvested statewide • 1:1 Louisiana State Match (~\$10 M)
Year 3 (2027 - 28)	\$38–40 M	• 5 % of AI savings (~\$10 M) • 0.20 % Hospital Modernization Assessment (~\$28–30 M)
Year 4 (2028- 29)	\$38–40 M	• 0.20 % Hospital Modernization Assessment (~\$28–30 M) • 5 % of AI savings (~\$10 M)
Year 5 (2029- 30)	\$38–40 M	• Fully self-financed via 0.20% Assessment (~\$28–30 M) • 5% of AI savings (~\$10 M)



2.2

Infrastructure Modernization through Hospital-at-Home

Integrate home-based acute care into **existing**
hospital infrastructure

Plan for HaH

We are SHIFTING Louisiana's healthcare infrastructure from **facility-bound** to a **distributed, tech-enabled hospital network** that reaches patients where they live

Phase 1: Physical Infrastructure

24/7 command centers

- Oversee a region
- Utilize portable diagnostic tools

Phase 2: Digital Infrastructure

New infrastructure **prioritizes** parishes where only 91% of residences have broadband

Phase 3: Operational Infrastructure

Establish statewide HaH coordination system



HaH Program Logistics

CMS Application

Hospitals apply for CMS's Acute Hospital Care at Home (AHCAH) waiver to deliver inpatient-level care in homes, demonstrating capacity for remote monitoring and compliance with CMS standards.

Patient safety (CMS AHCAH):

Requires daily provider evaluation, 2 in-person visits per day, 24/7 nursing access, and rapid response.

Operational Model

Patients are admitted from the ED or inpatient beds; care includes remote monitoring, home nursing visits, and mobile diagnostics (IV meds, labs, imaging).

State Integration

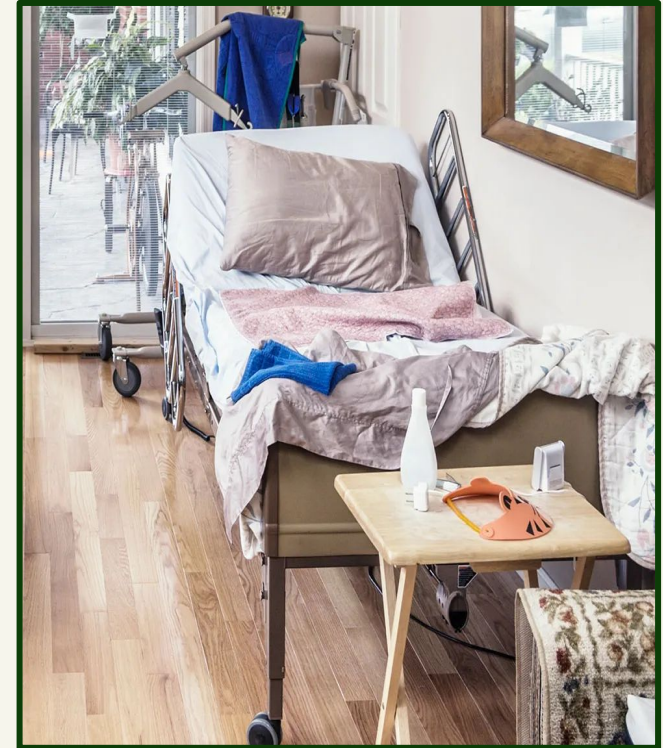
The *Louisiana Department of Health* integrates HaH through the Rural Health Transformation Program, supporting rural hospitals, especially in northern and central parishes

HaH Evidence-Based Success: OSU Wexner Medical Center

Launch: 2023 | **Partner:** DispatchHealth | **Program Type:** Acute Hospital Care at Home (CMS Waiver)

Evidence of Success:

- **Readmission Reduction:** 30-day readmission rate =
 - 6.5% (FY 2024) and 9.2% (FY 2025) vs. >15% for non-participants
- **Patient Satisfaction:**
 - 95% rated experience 9/10 out of 10/10.
- **Cost Impact:**
 - Comparable HaH programs show $\approx$ \$3,000 per-patient savings.
- **Clinical Outcomes:**
 - No increase in mortality or complications; fewer hospital days.



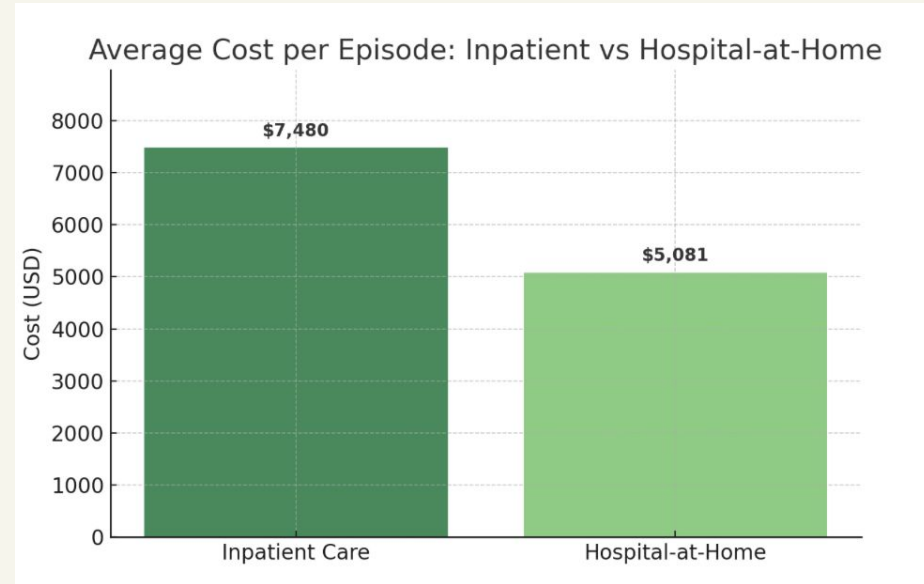
HaH Cost Savings

National Results

- **38% lower** episode cost vs. inpatient care
- **30% shorter** average length of stay

Reason for Cost Savings with HaH

- Direct cost savings
- Indirect cost-savings



1. Levine, D. M., Ouchi, K., Blanchfield, B., Saenz, A., Burke, K., Paz, M., Diamond, K., Pu, C. T., & Schnipper, J. L. (2019). Hospital-Level Care at Home for Acutely Ill Adults. *Annals of Internal Medicine*, 172(2), 77. <https://doi.org/10.7326/m19-0600>
2. Klein, S. (2024). "Hospital at Home" Programs Improve Outcomes, Lower Costs But Face Resistance from Providers and Payers | Commonwealth Fund. [Www.commonwealthfund.org. https://www.commonwealthfund.org/publications/newsletter-article/hospital-home-programs-improve-outcomes-lower-costs-face-resistance](https://www.commonwealthfund.org/publications/newsletter-article/hospital-home-programs-improve-outcomes-lower-costs-face-resistance)

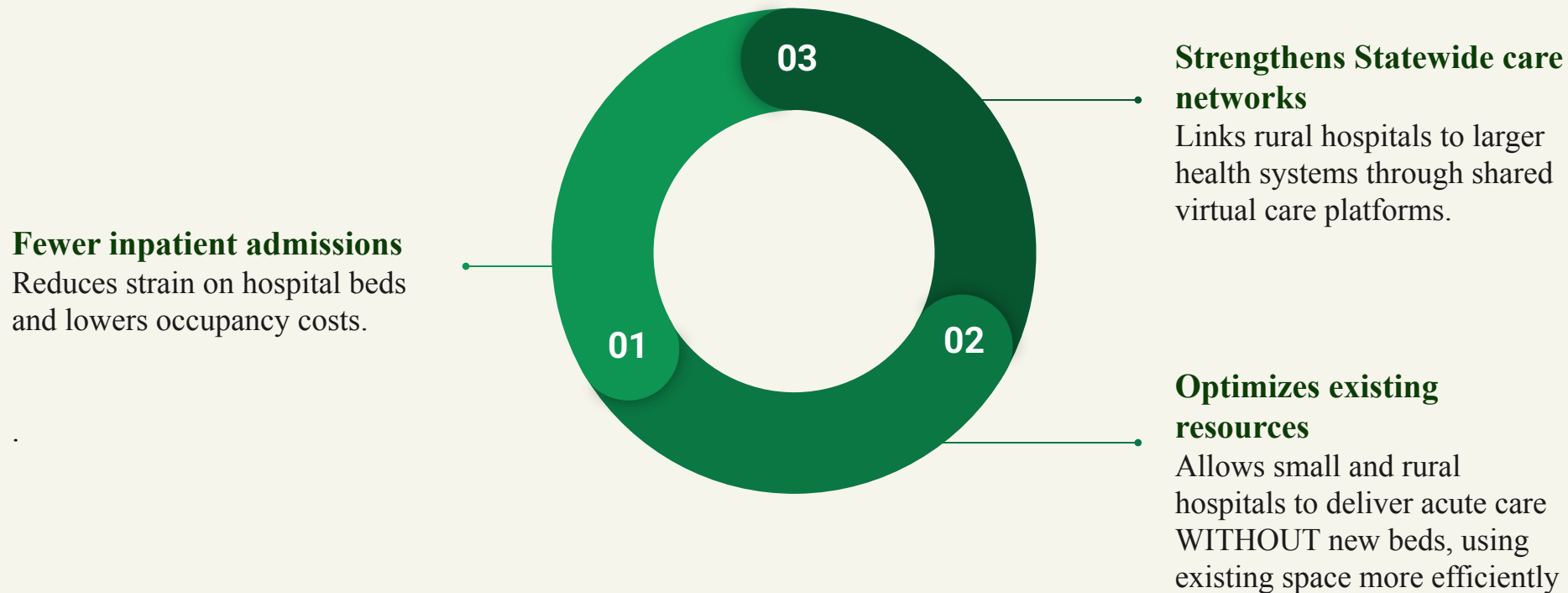
HaH Cost Estimate

	Per-Hospital Estimate	Statewide Total (159 Hospitals)	Rational Behind Budget
Startup Costs (one- time)	\$120,000	\$19,080,000	Telehealth platform, ~60 monitoring kits, staff training, and logistics setup
Annual Operating Cost (RPM +logistics)	\$58,000	\$9,222,000	Based on upper-range RPM vendor pricing (\$40–\$80 PPPM). Includes connectivity, staffing, and data support.
Average HaH Patient Episode Cost	\$17,937 vs \$22,991 inpatient (\$5,054 saved per episode)	-	Saves about \$5,000 per patient by shifting care to the home, reducing facility expenses
Total	\$178,000	\$28,302,000	Total Year-1 implementation cost excluding normal care delivery; produces ≈ \$48,215,000 million in annual savings statewide.

1. Saenger, P. M., Ornstein, K. A., Garrido, M. M., Lubetsky, S., Bollens-Lund, E., DeCherrie, L. V., Leff, B., Siu, A. L., & Federman, A. D. (2022). Cost of home hospitalization versus inpatient hospitalization inclusive of a 30-day post-acute period. *Journal of the American Geriatrics Society*, 70(5), 1374–1383. <https://doi.org/10.1111/jgs.17706>

2. *Fact Sheet: Report on the Study of the Acute Hospital Care at Home Initiative* | CMS. (2024, November). Cms.gov. <https://www.cms.gov/newsroom/fact-sheets/fact-sheet-report-study-acute-hospital-care-home-initiative?>

HaH Cost Estimate: Offsets



Policy Analysis

Feedback Loops

Infrastructure Performance Loop

The implementation team will assess:

- AI reliability
- EHR reliability
- HaH statewide consistency



July 2027

Findings will guide:

- **stronger** digital standards
- **stable** data exchange
- **improved** HaH command centers

EHR & AI Effectiveness Loop

Analysts will review:

- AI billing accuracy
- Quality of HaH data reporting
- Effectiveness in supporting care and workflows



July 2028

Results will refine:

- AI algorithms
- EHR interfaces
- Documentation accuracy

Policy Impact & Reinvestment Loop

The state will evaluate:

- **Assess** ROI and cost savings
- Evaluate **rural and equitable access** to HaH infrastructure
- **Overall impact** of modernization

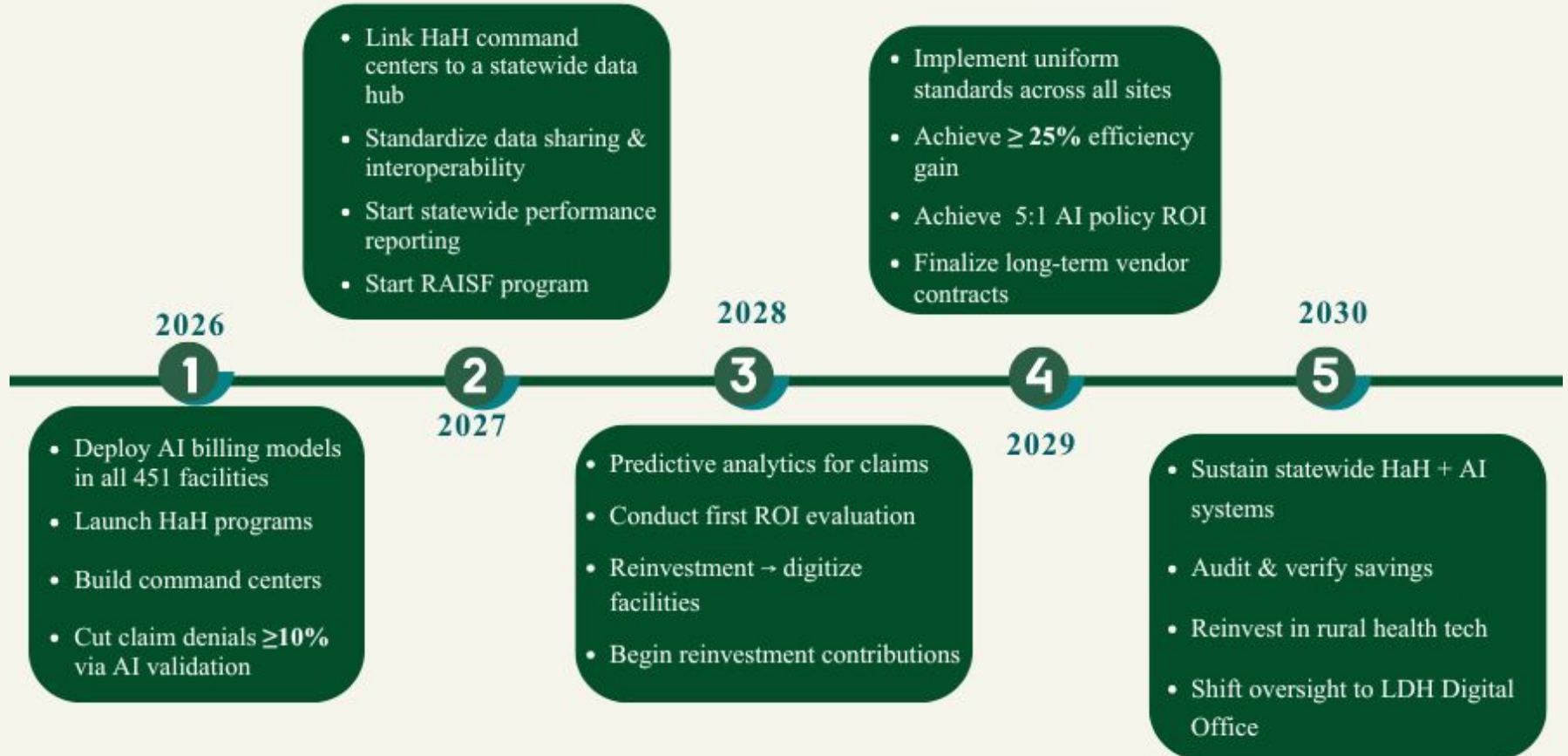


July 2029

Verified Savings will:

- Expand **HaH capacity** in underserved parishes
- **Reinvest** in statewide AI policy
- Ensure **smaller hospitals** benefit equally

Timeline



Trade-offs and Limitations

Upfront Costs and Implementation Burden

Limitation

Integration investment

Offset

Self-sustaining

Privacy Concerns

Limitation

Privacy challenges

Strategy

HIPAA compliance

Short-term Workflow Disruption

Limitation

Time needed to adjust

Strategy

On-site training

Limited Patient Eligibility

Limitation

Eligibility restricted

Strategy

Expansion

Criteria

Effectiveness

Aligns with Louisiana's value-based care **goals** and has broad state and community **support**

Efficiency

Reduces administrative **costs** and billing **errors** through digital automation.

Equity

Expands healthcare infrastructure to give rural and elderly communities **equal** access to care

Feasibility

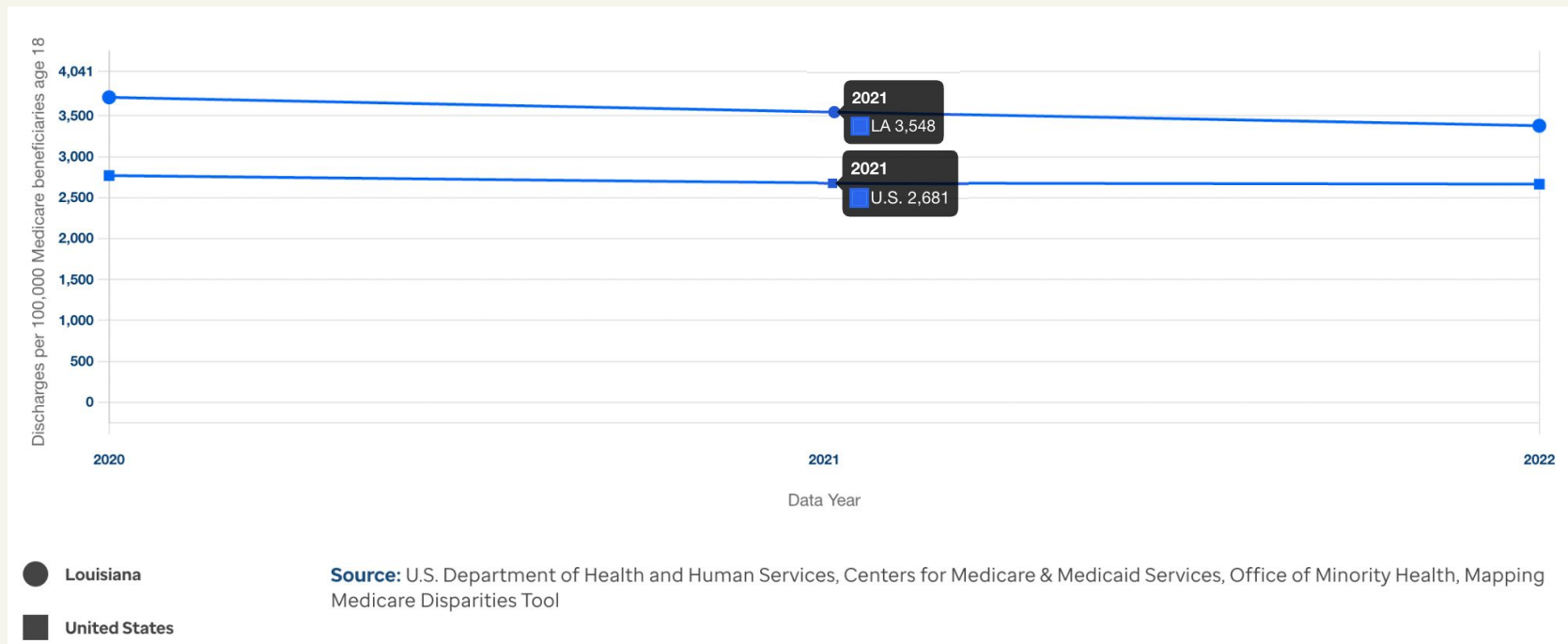
Improves **care access** and infrastructure in rural Louisiana

Acceptability

Builds on **current** resources to expand home-based care models

Thank You

Higher Rates of Preventable Hospitalizations



Discharges following hospitalization for ambulatory care sensitive conditions (PQI 90)
per 100,000 Medicare beneficiaries age 18 and older enrolled in the fee-for-service program