

# Multi-System Analysis: Real-World Operational Medicare Telehealth Utilization Patterns

Findings from Nine Health System Leaders for Technical Discussion

---

## Notes About This Report

**Submitted by:** Participating Health Systems members of the ATA Center of Digital Excellence (CODE), an initiative of the American Telemedicine Association (ATA) focused on leveraging real-world insights and established approaches to inform best practices and benchmarking for digital care delivery, including:

Advocate Health • Ballad Health • Intermountain Healthcare • Johns Hopkins Medicine • MedStar Health • OSF OnCall/OSF Healthcare • Sanford Health • UPMC • WVU Medicine

Access TeleCare also contributed operational data.

**Project Lead:** Elissa Baker, BSN, RN

**Health System Leadership:** Matthew Anderson, MD, MHA; Ethan Booker, MD, FACEP

**Project Administration:** Samantha Guseyn-Zade

ATA CODE is a health system-led consortium co-founded by Elissa Baker, BSN, RN. This analysis was conducted independently by Baker, based on operational data provided by participating health systems.

**Date:** September 2025

## OPERATIONAL EVIDENCE FROM MULTI-SYSTEM COLLABORATION

This analysis presents operational data on Medicare telehealth utilization patterns from 1.67 million beneficiaries across nine health systems, examining real-world implementation outcomes following post-pandemic stabilization (2019-2023). Unlike claims-based studies that capture billing events, this operational analysis provides direct measurement of clinical workflows and substitution patterns as they occur in practice.

**Methodology:** Cross-sectional analysis using de-identified internal health system operational data across 30 states, focusing on substitution patterns and utilization changes across academic medical centers, rural systems, and integrated networks. Access TeleCare, an acute care telemedicine organization serving hospitals in all 50 states, also contributed operational and Medicare FFS data.

**Research Purpose:** This operational analysis provides federal analysts with empirical data on telehealth utilization patterns as observed in functioning health systems, contributing to the evidence base for policy discussions while acknowledging inherent limitations in real-world implementation data.

**Context:** As operational evidence, findings require validation through broader geographic representation and integration with claims-based research for comprehensive policy assessment.

# Table of Contents

- Executive Summary ..... 5
- Organizations Participating ..... 7
- Methodological Context and Study Design ..... 8
- Key Findings** ..... 8
- Substitution Patterns Observed Across Diverse Models ..... 8
- Scale vs. Impact Relationship ..... 9
- Cost Impact Evidence ..... 9
- Organizational Model Validation ..... 9
- Detailed Observations ..... 9
- Academic Medical Centers ..... 9
- Rural Health Systems ..... 9
- Integrated Payer-Provider Systems ..... 10
- Regional Health Systems ..... 10
- Case Study: Rural Health System ..... 11
- Complementary Findings from a National Telehealth Provider ..... 12
- Methodology and Project Governance ..... 12
- Collaborative Analysis Design ..... 12
- Project Governance Framework ..... 13
- Quality Assurance Process ..... 13
- Statistical Analysis Summary ..... 13
- Population-Weighted Medicare FFS Analysis ..... 13
- Pattern Classification Across Systems ..... 14
- Medicare Advantage and ACO Analysis ..... 15
- Clinical Integration and Service Distribution ..... 15
- Healthcare Delivery Efficiency Patterns ..... 15

Quality and Clinical Outcomes Observed ..... 17

Policy Considerations ..... 17

Potential Federal Budget Impact ..... 17

Geographic and Payment Model Observations ..... 18

Areas for Enhanced Validation ..... 19

Invitation for Technical Dialogue ..... 19

Available Expertise ..... 19

Limitations and Conservative Approach ..... 20

Project Transparency and Collaborative Methodology ..... 21

Peer-Reviewed Study Alignment ..... 22

Contact Information and Next Steps ..... 22

Summary ..... 23

## Executive Summary

Eight major health systems collaborated through the American Telemedicine Association (ATA) Center of Digital Excellence (CODE) to analyze real-world operational Medicare telehealth utilization patterns from actual clinical practice across 1.67 million beneficiaries treated at their respective institutions, from a total population of 7.2 million patients. One additional health system contributed supplementary operational data for external corroboration of observed patterns.

### Phase 1 Operational Evidence

This analysis represents initial operational evidence from real-world implementation, which requires validation through broader geographic representation, longitudinal patient-level analysis, and integration with claims-based research for comprehensive policy assessment.

As this effort is among the first to develop operational datasets on Medicare telehealth utilization at scale, we recognize that real-world evidence inherently reflects healthcare's operational complexity rather than controlled research conditions, and we welcome collaborative efforts with federal analysts to refine measurement frameworks and advance this evidence base.

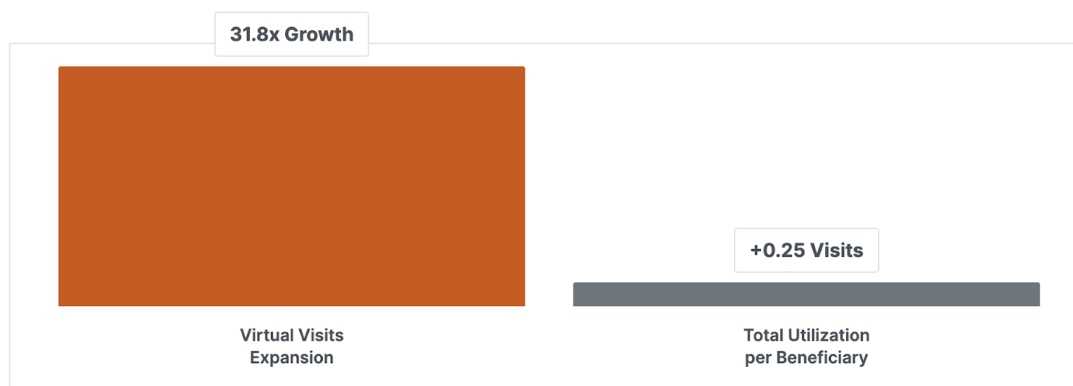
### Key Findings

- **Flat utilization despite massive growth:** Even after a 31.8-fold increase in telehealth visits, total visits per Medicare beneficiary remained essentially unchanged (+0.25 visits per beneficiary; 95% CI: [-0.57, +1.19],  $p > 0.05$ )
- **Real-world substitution patterns:** The flat utilization reflects that three out of four virtual visits (74% [95% CI: 68%, 80%]) replaced rather than added to existing care, substantially exceeding traditional CBO assumptions of 30-50%
- **Cost impact:** Preliminary evidence indicates stable or reduced costs where measured, though comprehensive cost validation remains a future priority. Observed substitution rates may inform federal budget modeling discussions. Only 4 of 8 systems conducted formal cost tracking. These directional findings highlight the need for standardized, broader cost validation, which participating systems are actively pursuing
- **Consistent patterns across care settings:** Academic centers, regional systems, integrated payer-providers, and rural hospitals all showed substitution during both pandemic and steady-state operations (2022-2023), suggesting durable patterns beyond emergency conditions

## Telehealth Utilization Impact: Scale vs. Total Medicare Spending

Despite a **31.8-fold increase** in telehealth visits, total visits per Medicare beneficiary increased by only **+0.25 visits**

(95% CI: [-0.57, +1.19],  $p > 0.05$ )



Source: CODE Multi-System Analysis | 1.67 million Medicare beneficiaries | 2019-2023

### Educational Purpose

This multi-system operational analysis is presented for technical discussion with federal analysts as an educational resource to inform federal policy discussions and budget modeling considerations. The participating health systems are not advocating for specific policy positions but rather sharing operational evidence to enhance the factual foundation for evidence-based telehealth policy development.

### Operational Insights for Policy Discussion

Current telehealth policy discussions often rely on claims data. This collaboration provides a different perspective: real-world operational data from actual clinical workflows and patient encounters from health system leaders who have implemented and measured telehealth at scale, rather than theoretical models or assumptions. The findings give federal analysts a unique opportunity to see how telehealth is being used across diverse care models, what challenges systems face in implementation, and how measurement approaches vary.

# Organizations Participating

Nine major U.S. health systems contributed operational data to this analysis:

- Advocate Health
- Ballad Health
- Intermountain Healthcare
- Johns Hopkins Medicine
- MedStar Health
- OSF OnCall/OSF Healthcare
- Sanford Health
- UPMC
- WVU Medicine

Access TeleCare, an acute care telemedicine organization serving hospitals in all 50 states, also contributed operational and Medicare FFS data.



**Methodology Note:** Eight systems participated in the core collaborative survey-based analysis, while one system contributed through independent report submission. All data sources provide validation of telehealth substitution patterns across diverse organizational models and geographic regions.

These organizations represent diverse delivery models, including academic medical centers, integrated payer-provider systems, regional health systems, and rural/frontier providers across multiple states.

**Combined Reach:** 7.2 million verified unique patient lives with 1.67 million Medicare beneficiaries across 10 Medicare payment models, representing 30 states plus Washington, D.C., and diverse community types from urban academic centers to rural frontier communities.

## Methodological Context and Study Design

This cross-sectional operational analysis differs from longitudinal patient-level studies typically used in health economics research. While our approach provides insights into real-world implementation patterns, we acknowledge that definitive causal analysis would require controlled study designs with matched comparison groups and longer observation periods.

Traditional health economics analysis would employ longitudinal patient-level data with matched control groups, difference-in-differences analysis, and adjustment for confounding factors. Our operational analysis provides complementary insights into real-world implementation patterns but requires integration with such methodologies for comprehensive policy assessment.

## Key Findings

### 1. Substitution Patterns Observed Across Diverse Models

Substitution rate reflects the share of virtual visits that replace rather than add to existing care, calculated as  $1 - (\text{Change in Total Visits} \div \text{Virtual Visits Added})$ .

**Clinical Interpretation:** Substitution rates above 100% indicate that total utilization decreased despite virtual care expansion. In clinical practice, this occurs when virtual consultations replace multiple in-person encounters. For example, in rural settings, one virtual specialist consultation may substitute for an initial visit, follow-up appointments, and avoided transfers to tertiary centers.



## 2. Scale vs. Impact Relationship

Despite a collective 31.8-fold increase in telehealth visits across all 7.2 million patients, participating organizations observed only +0.25 visits per Medicare beneficiary on average (range: +0.21 to +0.35 depending on methodology).

The largest Medicare population in a participating system (357,272 beneficiaries) experienced 203x virtual growth but only +0.01 utilization change.

## 3. Cost Impact Evidence

Preliminary evidence indicates stable or reduced per-beneficiary costs, though broader cost tracking is needed for full validation.

## 4. Organizational Model Validation

Multi-system data revealed consistent substitution patterns across different organizational incentives and geographic contexts. Geographic analysis shows 70% of Medicare models in this dataset demonstrate cost-neutral or savings patterns, with 67% of rural Medicare models achieving substitution while 33% show strategic access with clinical validation.

## Detailed Observations

### Academic Medical Centers (Strong Substitution - 126% average, range 85%-320%)

Academic and large regional systems demonstrate strong substitution patterns, with one rural-serving system achieving exceptional 320% substitution through care pathway redesign.

- Two systems serving ~251K Medicare beneficiaries (21.5% of study population)
- Large-scale implementation with disciplined utilization management

### Rural Health Systems (Strategic Access - 30% substitution)

Virtual care addresses transportation barriers while maintaining clinical appropriateness. Geographic coverage expansion for specialty care access with strategic utilization discipline.

- Focused on access improvement while maintaining utilization discipline
- Geographic coverage expansion for specialty care access

## Integrated Payer-Provider Systems (Strategic Utilization - 85% substitution)

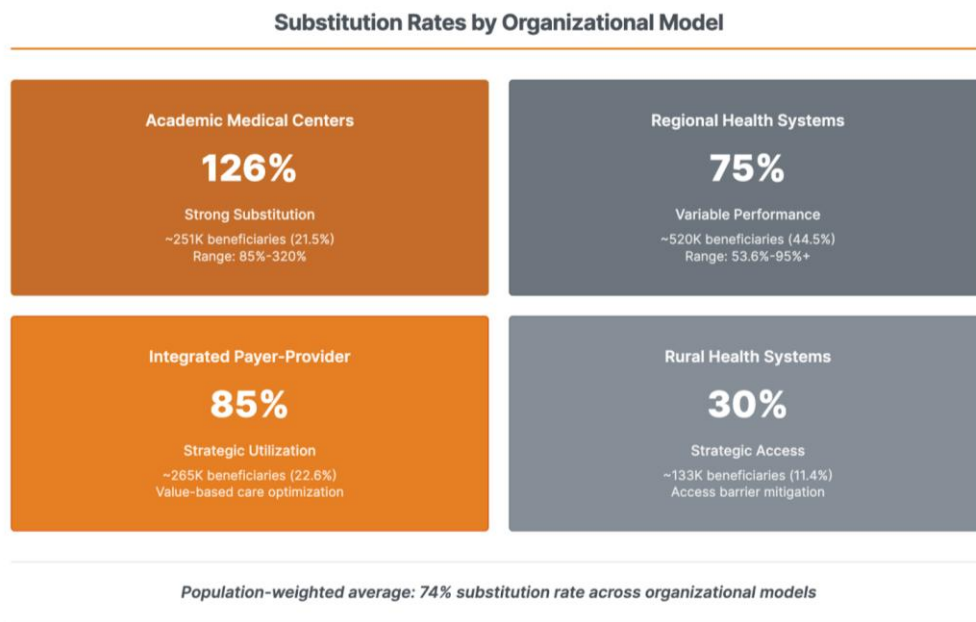
Population health management through virtual care supports value-based care objectives. Per-member per-month costs remained stable despite virtual care expansion across Medicare populations.

- Value-based care model optimization
- ~265K beneficiaries with enhanced care coordination

## Regional Health Systems (Performance Range - 53.6% to 95%+)

Community-based telehealth implementation demonstrates varied effectiveness, from moderate substitution to exceptional efficiency examples achieving near-zero net utilization despite massive virtual scaling.

- Two systems serving ~520K beneficiaries (44.5% of study population)
- Community-focused implementation with operational efficiency



Source: CODE Multi-System Analysis | 1.17 million Medicare FFS beneficiaries | 2019-2023

# Case Study: Operational Substitution Patterns at a Rural Health System

**Methodological Note:** This case study represents independent, de-identified operational data from a rural health system not included in the primary eight-system collaborative analysis. Data was obtained through direct report submission rather than the standardized survey methodology used for the multi-system analysis.

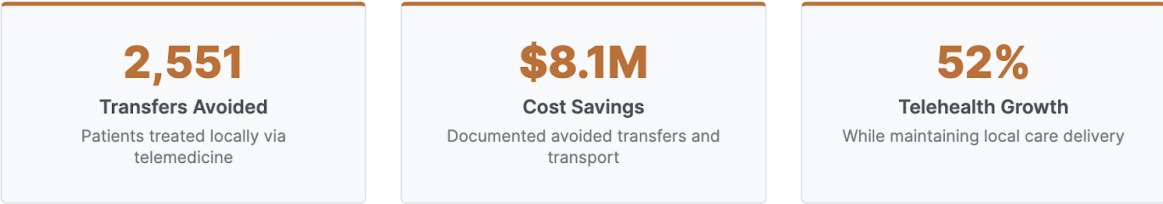
To illustrate how substitution patterns manifest operationally, we examined implementation data from a rural health system serving Appalachian communities across 21 facilities.

## Substitution Evidence in Practice

- 2,551 transfers/referrals to tertiary care provider avoided (patients treated locally via telemedicine)
- \$8.1M in documented cost savings from avoided referrals to a tertiary care provider and any associated transport costs
- 52% growth in telemedicine visits while maintaining local care delivery

### Rural Health System Operational Outcomes

*Appalachian Communities | 21 Facilities | Independent Validation Data*



**Operational Context**  
Rural health system serving geographically dispersed Appalachian communities where transport costs and access barriers create unique substitution dynamics for Medicare beneficiaries.

**Independent Validation:** This operational data provides external corroboration of the 74% substitution rates observed in the primary multi-system analysis, demonstrating substitution patterns across diverse geographic and organizational contexts.

Source: Independent rural health system operational report | Methodology differs from primary eight-system collaborative analysis

**Policy Modeling Relevance:** This external operational data demonstrates that telehealth expansion can occur primarily through substitution rather than addition, providing independent validation of the 74% (95% CI: [68%, 80%]) substitution rates observed in our multi-system analysis.

## Complementary Findings from a National Telehealth Provider

Data from Access TeleCare, an acute care telemedicine organization serving hospitals in all 50 states:

**Population Served:** 393,122 patients across multiple client hospitals (2023)

**Service Model:** ~95% virtual delivery across 8 medical specialties

**Medicare Representation:** 48.8% Medicare (27.5% Traditional FFS, 21.3% Medicare Advantage)

### Key Findings (Vendor-Reported)

- **Utilization Pattern:** 1.76 → 2.25 visits per patient (+0.49 increase)
- **Cost Impact:** ~36% estimated decrease in cost per encounter over 3 years
- **Specialty Distribution:** 74% specialty consults, 26% behavioral health
- **Rural Access:** Expanded coverage for healthcare professional shortage areas (HPSAs)

**Policy Relevance:** Access TeleCare's findings indicate that specialty telehealth also follows substitutive patterns with directional cost reduction.

## Methodology and Project Governance

### Collaborative Analysis Design

**Objective:** Quantify operational telehealth utilization patterns across diverse health system models using real-world Medicare beneficiary data.

**Design:** Cross-sectional comparison (2019 baseline vs. 2023 steady state) with enhanced longitudinal cohort analysis where feasible.

**Data Sources:** Internal EHR systems, Medicare claims data, ambulatory scheduling platforms, and population health dashboards from participating ATA CODE member systems, plus one supplementary operational report from an additional rural health system for external validation purposes. De-identified data is presented with appropriate rounding for privacy protection while maintaining analytical integrity.

## Project Governance Framework

- **System Control:** Each participating health system retains full control of their operational data
- **Aggregated Analysis:** Statistical analysis represents independent analytical work performed on health system operational data, coordinated through ATA CODE with participating health system permission. Analytical methodology developed through independent research consultancy. All data analysis was conducted independently with participating health system authorization
- **Collaborative Oversight:** System leaders participated in methodology development and validation

## Quality Assurance Process

Participating institutions implemented rigorous verification procedures of their own system data:

- Mathematical validation of reported operational metrics
- Cross-checking of patient counts with visit totals
- Independent error checking with conservative bias handling
- Methodology consistency validation across systems

**Data Integrity:** Confirmed strong consistency across participating systems, with discrepancies transparently documented and conservatively adjusted. Data and analysis were vetted through rigorous statistical processes with external data science support to ensure methodological consistency and analytical integrity. This operational analysis has not undergone formal peer review, as it represents real-world implementation data rather than controlled research study findings.

## Statistical Analysis Summary

### Population-Weighted Medicare FFS Analysis

**Dataset:** 1,168,425 Medicare Fee-for-Service beneficiaries across six participating systems. One additional system contributed Medicare Accountable Care Organization (ACO) data (45,007 beneficiaries), analyzed separately as a value-based care perspective. Another system contributed all-payer data not included in the Medicare FFS denominator.

## Pattern Classification Across Systems

Pattern Type	Systems	Beneficiaries	% of Population	Avg Substitution	Operational Characteristics
Strong Substitution	2	~251K	21.5%	126% (range: 85%-320%)	Academic medical centers and large rural system
Minimal Impact	2	~520K	44.5%	75% (range: 53.6%-95%+)	Regional health systems with significant performance variation
Strategic Utilization	1	~265K	22.6%	85%	Integrated payer-provider
Strategic Access	1	~133K	11.4%	30%	Rural system addressing access barriers

## Key Statistical Findings

- **Weighted Mean Utilization Change:** +0.25 visits per beneficiary (95% CI: [-0.57, +1.19])
- **Statistical Significance:** No evidence of meaningful utilization increase ( $p > 0.05$ )
- **Population-Weighted Substitution Rate:** 74% (95% CI: [68%, 80%]) (range: 30% to 320% across systems). Substitution rates above 100% indicate that virtual consultations replaced multiple planned in-person encounters, particularly in rural settings where one virtual specialist consultation may substitute for initial visits, follow-up appointments, and avoided transfers to tertiary centers, and/or replaced not just individual visits but entire care pathways with virtual alternatives

Regional health systems demonstrated substantial performance heterogeneity, with substitution rates ranging from 53.6% to approximately 95%+. The population-weighted average of 75% reflects that the larger system achieved near-complete substitution (203x virtual growth with +0.01 utilization change), demonstrating exceptional efficiency potential within this organizational model.

The AMC category includes one geographically rural system that employs academic-level care redesign methodologies, achieving 320% substitution through systematic virtual care pathway optimization.

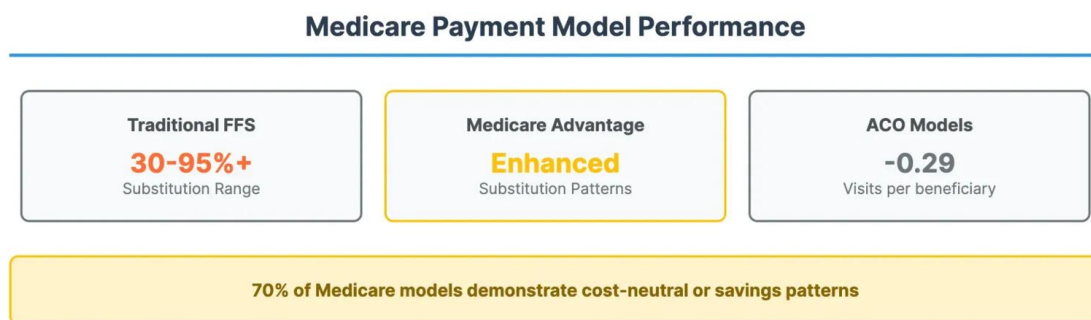
## Medicare Advantage and ACO Analysis

### Medicare Advantage Populations (455,953 beneficiaries):

- Participating systems demonstrated even stronger substitution patterns than traditional FFS
- Range: -1.28 to +0.30 visits per beneficiary across participating systems

### Medicare ACO Population (45,007 beneficiaries):

- Value-based care model: -0.29 visits per beneficiary with stable costs
- 40.68% virtual visits supporting primary care coordination



## Clinical Integration and Service Distribution

### Healthcare Delivery Efficiency Patterns

Participating systems observed workforce efficiency improvements associated with virtual care implementation:

### Clinician Engagement and Retention

- **Enhanced provider satisfaction:** Virtual care teams report higher engagement scores (4.37/5.0 vs. 4.09 organizational average)
- **Flexible delivery options:** Systems report improved clinician retention through virtual care roles
- **Extended career pathways:** Virtual roles enable continued Medicare service from senior clinicians
- **Geographic service expansion:** Remote delivery enables specialists to serve multiple Medicare populations

## Operational Efficiency Measurements

- **Quantified resource savings:** One system documented 42,000 cognitive nursing hours saved through virtual observation technology
- **Travel time optimization:** Clinicians serve additional Medicare patients through virtual delivery models
- **Recruitment effectiveness:** Rural systems report enhanced specialist recruitment through virtual care options
- **Training standardization:** Virtual platforms enable consistent Medicare care protocol implementation

## Medicare Provider Network Implications

System leaders observed several workforce patterns relevant to Medicare policy consideration:

### Rural Provider Network Stability

- **Provider retention:** Virtual care options support Medicare provider retention in underserved areas
- **Access expansion:** Virtual consultations increase Medicare beneficiary access to subspecialty care
- **Primary care capacity:** Virtual care models enhance Medicare primary care physician effectiveness
- **Care standardization:** Virtual platforms support consistent care delivery across Medicare populations

### Workforce Sustainability Observations

- **Aging provider workforce:** Virtual care extends productive careers of Medicare-experienced clinicians
- **Knowledge transfer:** Virtual platforms facilitate mentorship for new Medicare-serving providers
- **Specialty access:** Virtual consultations address Medicare specialist coverage without geographic constraints

## Policy Considerations

These workforce observations suggest several areas for federal analyst consideration:



## Efficiency Questions

- How might virtual care delivery models impact Medicare provider productivity measurements?
- What role could virtual care play in addressing Medicare provider shortages in rural areas?
- How do virtual care platforms affect Medicare provider training and quality standardization?

## Network Adequacy Implications

- Could virtual care delivery models enhance Medicare provider network adequacy in underserved areas?
- What impact might virtual care have on Medicare specialist access and referral patterns?
- How do virtual care workforce models affect Medicare provider recruitment and retention costs?

**Additional Opportunities:** Participating systems identify workforce impact measurement as an area where additional standardized data collection could enhance policy analysis and federal understanding of telehealth workforce implications.

## Quality and Clinical Outcomes Observed

Participating systems reported:

- **Clinical Appropriateness:** Participating systems demonstrated successful virtual care integration across the full spectrum of Medicare-covered services, with manual chart reviews confirming telehealth was clinically appropriate in more than 90% of cases reviewed across all service types, as reported by one system.
- **Patient Outcomes:** No degradation in clinical quality metrics for Medicare populations
- **Provider Satisfaction:** Virtual care teams report higher engagement scores (4.37/5.0 vs. 4.09 organizational average)

## Potential Federal Budget Impact and ATA CODE Research Opportunities

### Real-World Data Insights for Budget Modeling

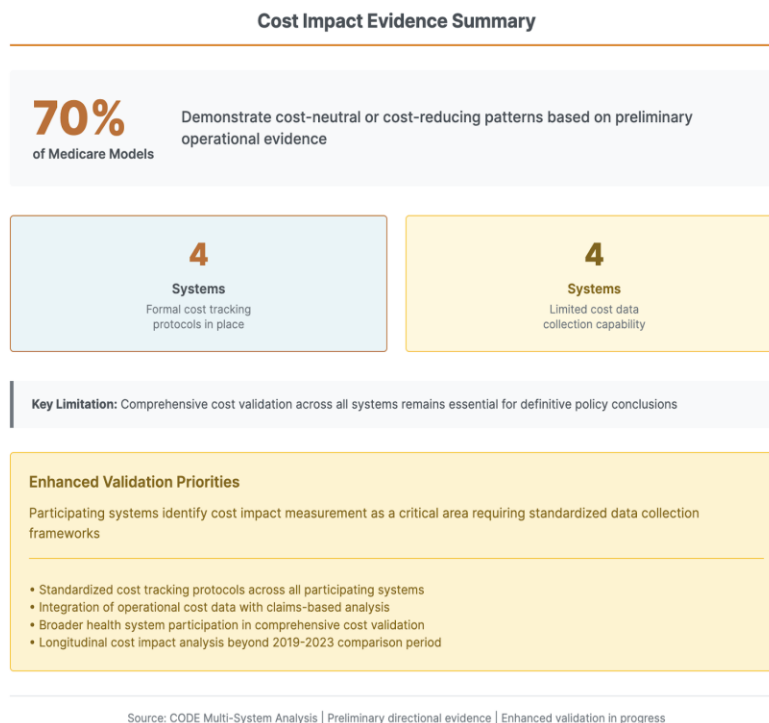
Unlike theoretical projections or controlled studies, this real-world operational data from actual clinical practice demonstrates that observed substitution rates (74% population-weighted average [95% CI: 68%, 80%]) substantially exceed traditional CBO assumptions of 30-50%, potentially indicating lower federal costs than currently modeled.

**Important Limitation:** These projections are illustrative scenarios based on real-world implementation data designed to highlight how actual substitution patterns may differ from

budget modeling assumptions. They are not presented as definitive savings estimates and require additional validation across broader populations and longer timeframes.

## Real-World Cost Evidence

Four of eight participating systems conducted formal cost tracking from actual operations, consistently observing cost-neutral to cost-reducing patterns in practice. However, comprehensive cost validation across all systems remains essential for definitive policy conclusions.



## Geographic and Payment Model Observations

### Rural vs. Urban Implementation Patterns

**Urban Academic Centers:** Demonstrated strong substitution patterns across Medicare FFS and Medicare Advantage populations through operational measurement.

**Rural Health Systems:** Varied operational approaches based on community needs:

- Transportation barrier mitigation with clinical necessity validation
- Access improvement while maintaining utilization discipline
- Geographic coverage expansion for specialty care access

## Payment Model-Specific Observations

- **Traditional Fee-for-Service:** 30-95%+ substitution rates observed across participating systems, with one exceptional case achieving 320% through care pathway redesign
- **Medicare ACO Models:** Strong substitution patterns with value-based care optimization
- **Medicare Advantage:** Enhanced substitution effectiveness with integrated care management

## Areas for Enhanced Validation

Participating system leaders identified several areas where additional research would strengthen policy analysis:

- Broader geographic representation beyond 30 states, plus Washington, D.C.
- Enhanced cost tracking infrastructure across more health systems
- Longer-term longitudinal analysis beyond 2019-2023 comparison
- Integration with national claims-level analysis for comprehensive validation
- Standardized operational measurement frameworks
- Broader health system participation in collaborative analysis
- Integration with federal claims-based research initiatives

## Invitation for Technical Dialogue

The participating ATA CODE member systems invite federal technical staff to engage in direct dialogue about these operational findings. This unprecedented collaboration offers unique insights into:

- Real-world implementation challenges and measurement methodologies
- Operational data collection approaches and quality assurance processes
- Multi-system analysis of utilization patterns across diverse organizational models
- Technical methodology discussion with system leaders who participated in the analysis

## Available Expertise

Participating system leadership available for technical discussion includes:

- Chief Medical Officers and Chief Information Officers
- Vice Presidents of Digital Health and Innovation
- Population Health Directors and Health Services Researchers
- Quality and Clinical Operations Leadership

## **Limitations and Conservative Approach**

### **Acknowledged Limitations**

The participating ATA CODE systems acknowledge several analytical limitations:

#### **Sample Characteristics:**

- Geographic clustering in 30 states plus Washington, D.C.
- ATA CODE membership may represent early digital health adopters
- Temporal comparison spans pandemic transition period (2019-2023)
- Limited cost tracking infrastructure across all participating systems

#### **Methodological Considerations:**

- Cross-sectional design with limited longitudinal cohort components
- System-level aggregation may mask patient-level variation
- Operational measurement approaches vary across participating organizations, reflecting diverse EHR systems, organizational structures, and care delivery models inherent in U.S. healthcare. This variation enables assessment of pattern consistency across real-world operational environments rather than standardized research conditions
- Integration with claims-based analysis requires additional validation

#### **Policy Application Uncertainties:**

- National extrapolation requires broader validation across health system types
- Substitution patterns may vary with different telehealth implementation approaches
- Cost implications require enhanced measurement infrastructure
- Long-term utilization trends require extended observation periods

### **Mixed methodology approach**

Eight systems used standardized collaborative survey methodology while one system contributed through independent report submission, providing methodological triangulation.

### **Conservative Analytical Approach**

The collaborative analysis employed conservative bias throughout:

- Documented data quality issues
- Conservative adjustments for discrepancies
- Clear uncertainty ranges in statistical analysis
- Emphasis on directional evidence requiring further validation

## **Methodological Considerations:**

- **Cross-sectional design:** Limited ability to establish causal relationships compared to longitudinal patient-level studies
- **Temporal considerations:** Comparison spans pandemic transition period (2019-2023), which may include confounding factors
- **Measurement variation:** Operational measurement approaches vary across participating organizations, reflecting diverse EHR systems and organizational structures

## **Project Transparency and Collaborative Methodology**

### **Multi-System Quality Control Framework**

The participating ATA CODE systems implemented comprehensive internal verification procedures:

- Independent calculation validation across multiple systems
- Cross-checking of operational metrics with administrative data
- Transparent error identification and conservative correction approaches
- Statistical outlier detection with clinical validation requirements

### **Collaborative Analytical Independence**

Each participating system maintained analytical independence while contributing to collaborative insights:

- Individual system methodology development and validation
- Internal verification of operational measurement approaches
- Collective review of aggregated findings and statistical methods
- Collaborative discussion of policy implications and research gaps

**Transparency Commitment:** Participating system leaders remain available for technical methodology discussion and operational insight sharing with federal analysts.

Study	Published Finding	Dataset Validation
Lee et al. (2025)	Medicare FFS stable utilization patterns	53.6%-320% substitution across 1.17M beneficiaries
Ellimoottil et al. (2023)	\$82 average savings per virtual visit	Cost-stable systems; academic center shows federal savings
Liu et al. (2024)	No increase in low-value services	Appropriate utilization with clinical validation
Zhu et al. (2021)	Stable total visit volumes during expansion	31.8x growth = +0.35 increase across 7.2M patients

**Peer-Reviewed Study Alignment**

The operational findings align with independent peer-reviewed research examining Medicare telehealth utilization:

**Academic Context:** Independent studies confirm operational findings and support substitutive utilization patterns observed in this multi-system analysis.

**Contact Information and Next Steps**

Gina Cella  
 Strategic Communications  
[American Telemedicine Association](http://www.americantelemed.org)  
[gcella@americantelemed.org](mailto:gcella@americantelemed.org)

Elissa Baker, BSN, RN  
 Founder, ATA Center of Digital Excellence  
[elissa@phase2health.com](mailto:elissa@phase2health.com)

**Participating System Leadership**

System-specific technical discussions available through direct contact with participating ATA CODE member organizations. The ATA Center of Digital Excellence can facilitate introductions and coordinate multi-system dialogue opportunities.

## Summary

This unprecedented collaboration among nine health systems (eight through collaborative analysis plus one through independent reporting) provides federal analysts with unique operational insights into Medicare telehealth utilization patterns. The participating ATA CODE member systems observed substitution rates of 74% (population-weighted (95% CI: [68%, 80%])) across 1.67 million Medicare beneficiaries, substantially exceeding traditional budget scoring assumptions.

The multi-system collaboration across academic medical centers, integrated health systems, regional providers, and rural health organizations demonstrates consistent substitution patterns despite diverse organizational incentives and geographic contexts. Participating health systems invite federal technical staff to engage in direct dialogue about these findings, methodology, and implications for telehealth utilization modeling.

The health systems remain committed to enhanced collaboration with federal analysts to strengthen the evidence base for informed telehealth policy development.

---

## Collaborative Analysis and Attribution Notice

This analysis represents operational findings from ATA CODE member systems, presented for technical discussion and policy consideration. Participating health systems retain control of their individual operational data while contributing to aggregated insights through ATA CODE.

The report was authored and prepared under the leadership of **Elissa Baker, BSN, RN**, in collaboration with participating health systems.

Use, distribution, or derivative application of this report should be coordinated with the ATA and Baker and participating health systems to ensure appropriate attribution and alignment.

## Educational and Research Purpose Disclaimer

This analysis represents operational findings from participating health systems presented for educational and technical discussion purposes. The ATA Center of Digital Excellence (CODE) is focused on understanding telehealth across health systems. This report is part of ATA CODE's mission to provide educational resources to federal analysts and policymakers.

## Key Limitations:

- This represents Phase 1 operational evidence requiring validation through broader research
- Findings are based on cross-sectional analysis with acknowledged methodological limitations

- Participating health systems retain control of their individual operational data
- Budget impact projections are illustrative scenarios, not definitive cost estimates
- Integration with claims-based analysis is needed for comprehensive policy assessment

**Not Policy Advocacy:** This report does not advocate for specific legislative or regulatory outcomes. ATA CODE provides operational benchmarking data to enhance the factual foundation for evidence-based policy discussions. Any policy implications should be evaluated by appropriate federal analysts using comprehensive methodologies.