



Fostering Sustainable Telehealth Programs for Underserved Communities Through Data-Driven Approaches

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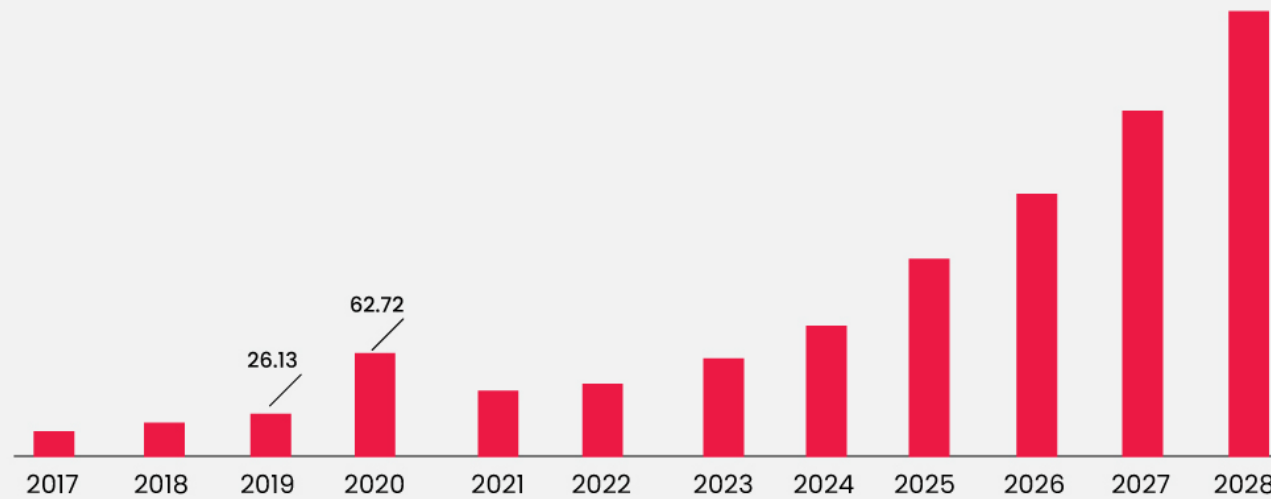
Disclaimer

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Background

North America Telehealth Market Size, 2017–2028 (USD billion)

Rightangleglobal.com



Program Sustainability

- Dynamic healthcare policy and funding availability – affecting FQHCs
- Program Evaluation
 - Metrics?
 - Analysis?



Framework for Evaluating and Developing Sustainable Telehealth Programs

- **Program Implementation**
- **Clinical Effectiveness**
- **Economic Sustainability**
- Time Horizon
- Health and Digital Equity
- Sustainability within the U.S. Healthcare System

Evaluation Domain: Program Implementation

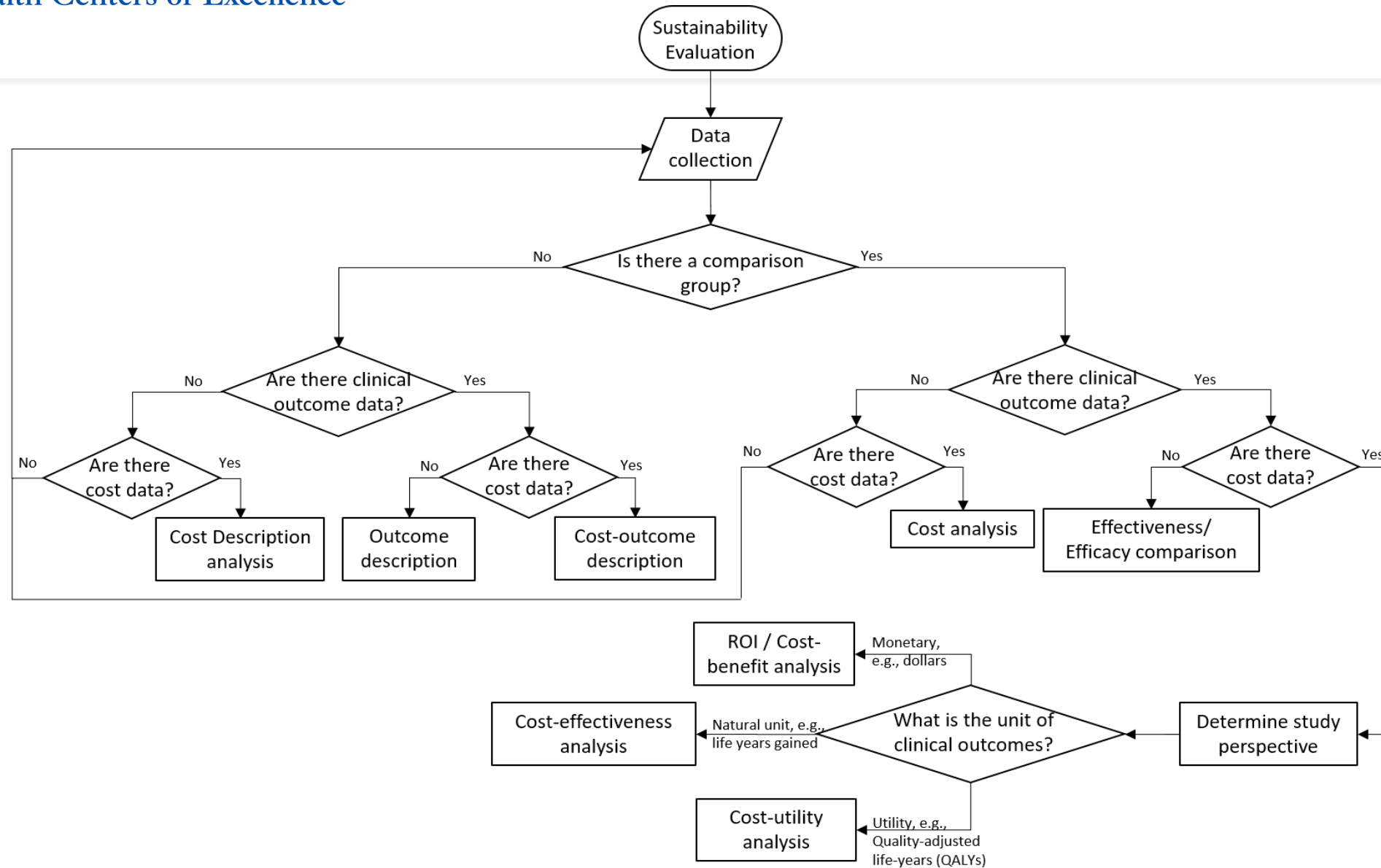
Evaluation Object/Approach	Metric Example
Patient and provider adoption	Adoption rate
Patient and provider satisfaction survey	Likert scaled answers
Recruitment strategy	Referral and enrollment rates
Patient compliance	Completion rate Frequency of home monitoring (RPM) Medication compliance

Evaluation Domain: Clinical Effectiveness

Evaluation Object/Approach	Metric Example
Clinical outcome	Outcome measures change from baseline Difference between intervention and comparison groups
Healthcare resource utilization	Hospitalization ED admission Length of stay
Self-reported clinical effectiveness	Surveys for quality of life Ability to work or perform daily tasks with independence Adverse event (Number of adverse events, severity of adverse event)
Health Equity	Outcome difference between subpopulations

Evaluation Domain: Economic sustainability

Evaluation Object/Approach	Metric Example
Economic benefit relative to investment	Return-on-Investment (ROI)
Cost-avoidance	Cost of avoided events, or resources
Average cost	Cost comparison
Cost-effectiveness	Cost-outcome description Cost per unit of effect for CEA Cost per quality adjusted life years (QALYs) or cost per disability-adjusted life years (DALYs) for CUA Ratio of costs to benefits for CBA



Telehealth Centers of Excellence

Cost Components		Payer	Provider	Societal	Data Source
Formal Healthcare Costs					
Program Costs					Institutional finance
	Equipment and supplies		✓	✓	
	Personnel		✓	✓	
	Training of patients and providers		✓	✓	
	Marketing		✓	✓	
	Overhead		✓	✓	
	Medical Costs paid for by third-party payers	✓		✓	Claims data
	Medical Costs paid for by patients out-of-pocket			✓	Institutional finance
Informal Healthcare Costs					Patient survey, Electronic Health Records
	Patient-time costs			✓	
	Unpaid caregiver-time costs			✓	
	Transportation costs	✓		✓	
Non-Healthcare Costs					Patient survey, National Health Interview Survey, American Medical Association Physician Masterfile, and U.S. Census data, etc.
	Productivity				
	Labor market earnings lost			✓	
	Cost of unpaid lost productivity due to illness			✓	
	Cost of uncompensated household production			✓	
	Education				
	Impact of intervention on educational achievement			✓	
	Environment				
	Carbon emissions caused by transportation			✓	
	Other impacts			✓	

Need RWD and RWE for Telehealth

- Using **Real-World Data (RWD)** to facilitate telehealth-associated research and **Real-World Evidence (RWE)**
- FDA Definition
 - “**Real-world data** are data relating to patient health status and/or the delivery of health care routinely collected from a variety of sources.”
 - Examples of RWD: data derived from electronic health records, medical claims data, data from product or disease registries, and data gathered from other sources

<https://www.fda.gov/science-research/science-and-research-special-topics/real-world-evidence>

Challenges of Telehealth Data Management

- Data source and integration
- Data standardization
- Data integrity: accuracy, completeness, consistency, and validity
- Access, Privacy, and Security



National Telehealth Data Warehouse

- Serve as a central repository for standardized telehealth services data from diverse sources.
- Objectives:
 - Provide telehealth data standards through the National Telehealth Data Dictionary
 - Facilitate telehealth research and strengthen interoperability across telehealth programs
 - Support evidence-based decision-making in telehealth policy and practice

National Telehealth Data Warehouse will include...

- Data since 2017
- Telehealth encounters and their associated
 - Medical data
 - Medication data
 - Billing data
- No patient health information



BENEFITS

GET DETAILED INFORMATION

The Warehouse will include information from around the United States and include data on patient diagnoses, procedures, medications, medical history, and others

ACCESS PROVIDER AND PAYER DATA

The Warehouse will include data on primary and specialty provider and payers of all types

HIPAA COMPLIANT

The data collected for and stored in the Warehouse is fully compliant with HIPAA privacy and security laws



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The National Telehealth Data Warehouse from the University of Mississippi Medical Center (UMMC) is a groundbreaking resource that provides researchers with unparalleled data on telehealth usage and trends. With its detailed information on reimbursement, policy, and quality metrics, the Warehouse is essential for anyone interested in telehealth research and innovation

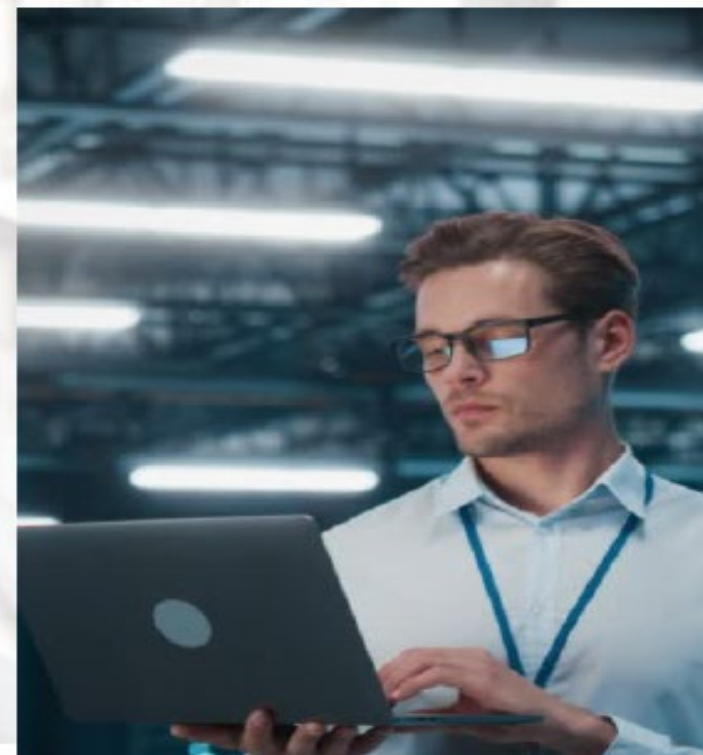


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A NATIONAL TELEHEALTH DATA WAREHOUSE

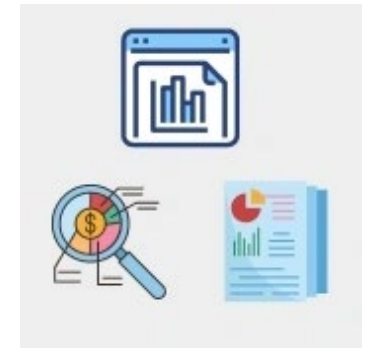
**The most comprehensive
resource for telehealth data
anywhere**





Generated by DALL·E

- Data governance and sharing
- A front-end website describing the warehouse and producing dashboards/visualization
- Use cases



2024

2025

The Telehealth Centers of Excellence(COEs) develop resources for telehealth organizations, researchers, providers, and staff based on their experience, research, and innovation.

TelehealthCOE.org

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