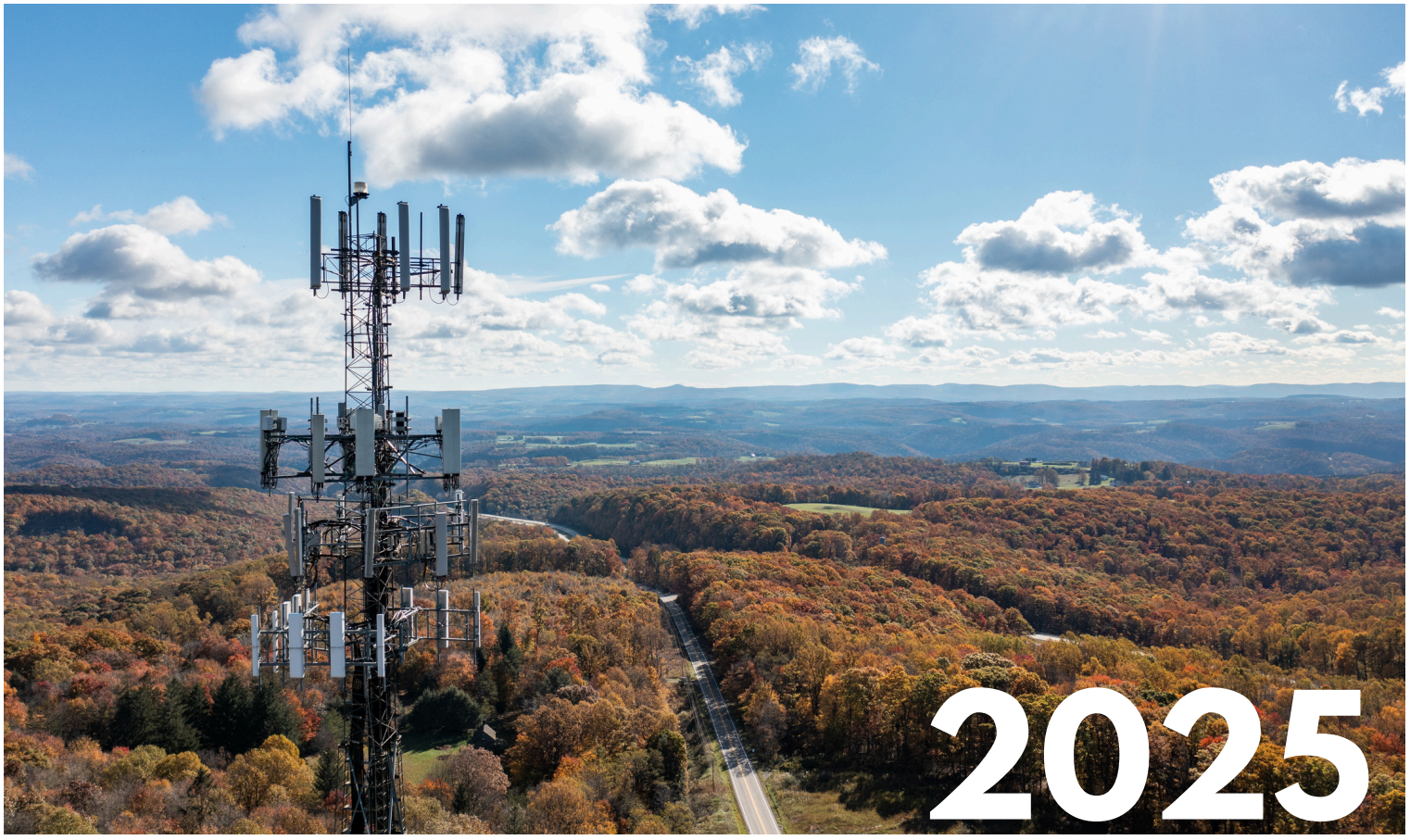

ENVIRONMENTAL SCAN

Upper Midwest Telehealth Resource Center

DISCLAIMER AND RECORD OF CHANGES

DISCLAIMER

The data presented in this report reflect the most current information available at the time of publication. However, due to the evolving nature of healthcare systems and ongoing data updates, some figures or details may have changed since the report was finalized. Readers are encouraged to consult the original data sources or relevant agencies for the most up-to-date information.

RECORD OF CHANGES

First (1.0) version of the report was published on December 1st, 2025

Date	Change Version	Author of Changes	Description of Changes Made
12/1	1.0	N/A	Initial version published

INTRODUCTION

ABOUT THE UMTRC

The Upper Midwest Telehealth Resource Center (UMTRC) delivers direct technical assistance to individuals and organizations across its designated service region, encompassing Illinois, Indiana, Michigan, and Ohio.

The UMTRC is committed to fostering telehealth adoption and optimization within these states, aligning with its overarching mission to expand access to care through technological solutions. The provision of direct technical assistance is a critical component of the UMTRC's operational framework, enabling stakeholders to navigate the complexities of telehealth implementation, regulatory compliance, and best practices.

To continue to provide technical assistance, consulting, relevant resources, professional development opportunities, and more, this environmental scan assist the UMTRC in identifying gaps, barriers, and opportunities to improve healthcare accessibility through telehealth.

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Welcome to the UMTRC

2025 ENVIRONMENTAL SCAN

THIS ENVIRONMENTAL SCAN HIGHLIGHTS...

Political Landscape

The political landscape surrounding telehealth in Illinois, Indiana, Michigan, Ohio is shaped by state-level legislative actions, particularly concerning payment parity and Medicaid reimbursement policies.

Sociocultural Acceptance of Telehealth

While the sociocultural acceptance of telehealth within the Midwest has decreased from its pandemic peak, virtual visits do remain higher than pre-pandemic levels.

Technology and Telehealth

Technologies, such as Artificial Intelligence (AI), Internet of Things (IoT), Virtual Reality (VR), Augmented Reality (AR), and Electronic Health Records (EHRs) have proved extremely promising in increasing access to and outcomes of patient care via telehealth.

Environmental Impacts

Research identifying both the advantages and disadvantages of telehealth on the environment have yielded important findings.

POLITICAL LANDSCAPE

National Overview

In consideration of the global Covid-19 pandemic, the political landscape around telehealth was forced to change drastically and quickly to enable healthcare delivery for shelter in place patients. Which required patients to limit activities to only essential and stay home to prevent the spread of the virus. As the pandemic raged, policies surrounding patient information sharing, licensing, reimbursement, cost-sharing, care types, flexibility with coverage in home vs. clinic settings, and coverage for Medicare beneficiaries in rural vs. urban settings were loosened and expanded.

These expansions remained in place through the pandemic, beyond the official ending of the Public Health Emergency in May 2023 and extended through September 30, 2025. However, now that the extension has ended, the future of these expanded telehealth policies is unknown[14]. Thus, creating a "telehealth policy cliff" for original Medicare beneficiaries. Where telehealth flexibilities have been reverted to pre-pandemic limitations; impacting beneficiaries and providers in the following ways[1,34].

- Reinstatement of an in-person visit within six months of an initial Medicare behavioral/mental telehealth service, and annually thereafter.
- Elimination of audio-only communication platforms for non-behavioral/mental telehealth services; with video technology required unless the patient is not capable of, or does not consent to, the use of video technology.
- Ending of flexibilities around prescribing controlled substances via telehealth, as of December 2025.
- Providers will no longer receive reimbursement for Medicare beneficiaries receiving non-behavioral health virtual visits in their homes.
- Beneficiaries will be required to be physically located in an office or medical facility within a designated rural area.
- Federally Qualified Health Centers (FQHCs) and Rural Health Clinics (RHCs) can no longer serve as Medicare distant site providers for non-behavioral/mental telehealth services.

Policies and reimbursement mechanisms expanded through the Covid-19 pandemic are critical to the stability and scalability of telehealth. As they are directly tied to social, environmental, economic and technological growth of telehealth, and the reduction in operational cost for a long-overburdened healthcare system.

Asynchronous, synchronous, and remote monitoring of patients are the three categorized modalities in which telehealth delivers various forms of virtual care; and are anticipated to generate over $140 billion in revenue by 2030[15]. However, as reported by the Health Resources and Services Administration (HRSA) the economic impact of telehealth is directly tied to payment models for telehealth service types, policy and reimbursement mechanisms, continued patient engagement, and ongoing analysis of the cost effectiveness of virtual care[34].

There are several current payment models directly tied to reimbursements and incentives for practitioners who provide telehealth services[15]. These models are the core to how providers are compensated for care, and due to a lack of uniformity across payers, may create economic challenges due to individual payer guidelines, coverage criteria, and documentation requirements[37].

Fee-For-Service (FFS) Model

Described as the oldest and most traditional payment model, FFS involves a standard reimbursement fee to providers for each service offered.

Capitation Model

Intended to transition practitioners away from a traditional FFS model, Capitation applies a fixed amount of reimbursement for each patient seen, and this is provided to the practitioner in advance; usually in one-month increments.

Episode-Based Model (EBM)

Also recognized as bundle payment model, the EBM is a bundled fee that covers the up-front, estimated cost, for all services provided to address a patient diagnosis or surgery episode.

Pay for Performance (P4P)

Utilized by Medicaid and Medicare, the P4P is an incentivized program that measures four quality improvement activities to determine the payment adjustment applied to Medicare Part B claims. These improvement activities include patient reported outcome-based performance measures, health outcomes, care processes, and efficiency in the utilization of healthcare resources (including financial resources) to deliver and improve outcomes for patients.

Shared Savings Program (SSP)

as an incentivized program for providers, the SSP offers an end-of-year bonus or penalty, depending on whether they meet cost objectives via increase high-quality care and decrease unnecessary services to patients.

Retainer-Based Payment

also recognized as concierge care, is a payment model used by providers who charge a monthly rate directly to their patients, for preventative health care services that may not be covered under other healthcare plans.

Regional Spotlight

The "telehealth policy cliff" currently impacts nearly 4 of the 8 million Medicare enrollees across the UMTRC region. Current trends for 2025 Medicare and Medicare enrollment in Illinois, Indiana, Michigan and Ohio are below[21].

State	2025
Illinois	• 2.4 million residents enrolled in Medicare. • 43% of beneficiaries are enrolled in private plans.
Indiana	• 1.3 million residents enrolled in Medicare. • 49% of beneficiaries are enrolled in Medicare Advantage plans.
Michigan	• 2.25 million residents enrolled in Medicaid. • 62% of beneficiaries are enrolled in Medicare Advantage plans.
Ohio	• 2.5 million residents enrolled in Medicaid. • 56% of beneficiaries are enrolled in Medicare Advantage plans.

As outlined by the School of Public Health- Brown University's Center for Advancing Health Policy Through Research, the following percentage of UMTRC region Medicare Fee-For-Service (FFS) beneficiaries received a telehealth (audio-only or audio-visual) visit in the first half of 2025[24].

Illinois 15%

Indiana 9%

Michigan 15%

Ohio 11%

The most common conditions treated included:

- Mental Health Conditions (e.g., depression)
- Chronic Medical Conditions (e.g., diabetes, hypertension, chronic kidney disease)

The common types of clinicians providing telehealth visits included:

- Primary Care Physicians (PCP)
- Nurse Practitioners (NPs)
- Mental Health Specialists (psychiatrists, social workers)

With critical services linked through the provision of telehealth, expiration of the telehealth expansions generated a magnitude of questions from both beneficiaries and providers. Frequently asked questions about how the "cliff" impacts Medicare and Medicare Advantage (MA) Plan beneficiaries have been outlined and addressed by the Alliance for Connected Care; with questions of particular interest highlighted below[20].

- **Would all telehealth services end when current statutory authority for Medicare telehealth expansion ends?**

- **What are the three ways in which a Medicare Advantage Plan can cover a telehealth service and how would they change if Congress failed to act?**

- **If the flexibilities expire, will MA plans continue to offer telehealth services beyond what is covered under Fee-For-Service (FFS), including services where the patient is located at home?**

- **If the telehealth flexibilities expire, can diagnoses obtained from telehealth visits still be used for risk adjustment?**

It is important to not lose sight of the long-term impact on beneficiaries should Congress fail to permanently expand telehealth services in the post-pandemic world. Disruptions in care access for rural patients, loss of critical services through Federally Qualified Health Centers (FQHCs), Critical Access Hospitals (CAHs), and specialty providers, as well as patient financial responsibility for care, and loss of investment in the infrastructure and capacity built to support telehealth.

Additional Resources

There are several policy considerations that must be examined when building a telehealth program. Because telehealth is a unique form of providing care, there are unique policy considerations that go along with it. That includes rules related to licensure, prescribing controlled substances, and billing and reimbursement. The COVID-19 Public Health Emergency (PHE) also added temporary services and rules that have most recently expired as of October 1, 2025.

See the resources below for more information about policy considerations related to telehealth:

Telehealth.HHS.GOV – Licensure for Providers
Interstate licensure resources for health care providers, states, and health care organizations.

Centers for Medicare and Medicaid Services (CMS) – List of Telehealth Services
"List of services payables under the Medicare Physician Fee Schedule when furnished via telehealth.

In the CY 2023 Final Rule, CMS finalized alignment of availability of services on the telehealth list with the extension timeframe enacted by the CAA, 2022. The CAA, 2023 further extended those flexibilities through CY 2024. We have updated and simplified the Medicare Telehealth Services List to clarify that these services will be available through the end of CY 2023, and we anticipate addressing updates to the Medicare Telehealth Services List for CY 2024 and beyond through our established processes as part of the CY 2024 Physician Fee Schedule proposed and final rules."

Center for Connected Health Policy – All Telehealth Policies
"The Center for Connected Health Policy is a nonprofit, nonpartisan organization working to maximize telehealth's ability to improve health outcomes, care delivery, and cost effectiveness. Our expertise in telehealth policy was recognized in 2012, when we became the federally designated National Telehealth Policy Resource Center."

SOCIOCULTURAL ACCEPTANCE OF TELEHEALTH

As a form of healthcare that accelerated during the Covid-19 pandemic, telehealth afforded the facilitation of healthcare delivery in a way that allowed providers to care for patients without an in-person visit, utilizing remote communication technologies such as computers, tablets, and smartphones. Recognizing that telehealth provision in the Mid-Western region of the United States has decreased from its pandemic peak[2], it has not gone amiss that this decrease is directly related to the sociocultural acceptance of telehealth, and how it relies heavily on several factors related to the patient's perception of care. Specifically, a patient's perception of trust, self-efficacy, perceived usefulness (PU), and perceived ease of use (PEOU), social influence, culture, behavioral intentions, and facilitating conditions [2].

Trust and self-efficacy of the patient are related to one's ability to understand the technological platform being utilized, how convenient and easy it is to use, as well as how efficiently the patient can engage in the telehealth interaction. The perceived usefulness (PU) and perceived ease of use (PEOU) for the patient signifies the potential for time and cost savings that result in better health outcomes than their traditional face to face interaction.

Social influence, culture, and behavioral intentions of patient acceptance of telehealth are influenced by familial attitudes toward remote healthcare services, whether patients live in a rural vs. urban setting, and their true intention of participating in future telehealth appointments.

When considering the perception of facilitating conditions, patients are looking to identify whether their provider exhibits the ability to support the needed IT infrastructure, exhibits a level of knowledge around technology, and has the appropriate equipment needed to support their telehealth needs.

National Overview

Adults living in the Northeast and Western parts of the United States were more likely to use telehealth than adults living in the Midwest and Southern regions. Telehealth use by adults decreased as urbanization decreased, from 40.3% among adults living in central counties of large metropolitan areas to 27.5% among adults living in noncore (rural) areas[19].

Midwest (33.3%)

South (34.3%)

Northeast (40.0%)

West (42.4%)

Noncore (27.5%)

Micropolitan (30.5%)

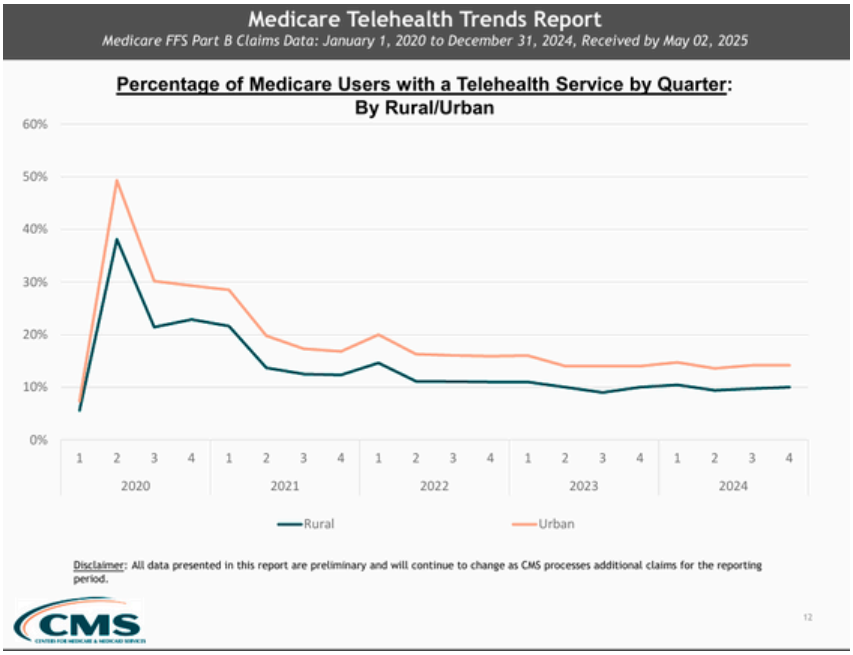
Small Metropolitan (32.4%)

Medium Metropolitan(35.4%)

Large Fringe Metropolitan (40.2%)

Large Central Metropolitan(42.4%)

As reported by the Center for Medicaid and Medicare Services (CMS)[24] the utilization of telehealth among qualifying patients, in both rural vs. urban settings, has continued to steadily decrease since their 2020 Covid-19 pandemic peaks.



A 2022 Prevalence and Disparities National Cross-Sectional Survey[35] utilized data from 4,830 participants across the United States to identify patient reported telehealth engagement use patterns, via the cross-sectional data from the 2022 Health Information National Trends Survey. Some of the reported findings are highlighted below.

32%
Patient engaged in virtual care for minor and/or acute illness.

21%
Patient engaged in virtual care for chronic disease management.

16%
Patient engaged in virtual care for mental health/substance use OR an annual exam.

In 2024, the Patient Adoption of Telehealth[8] survey was conducted and questioned 2,400 patients across the United States on their current telehealth use patterns. Their reported preferences for virtual care are highlighted below, with the three most reported reasons for engaging in telehealth being to review lab and/or test results, have a follow-up visit, and discuss medication management and/or refills.

56% **Prefer a virtual visit for test/lab results, follow-up to visit, medication management.**

27% **Prefer a virtual visit for same-day, non-emergency appointments.**

25% **Prefer a virtual visit for mental health.**

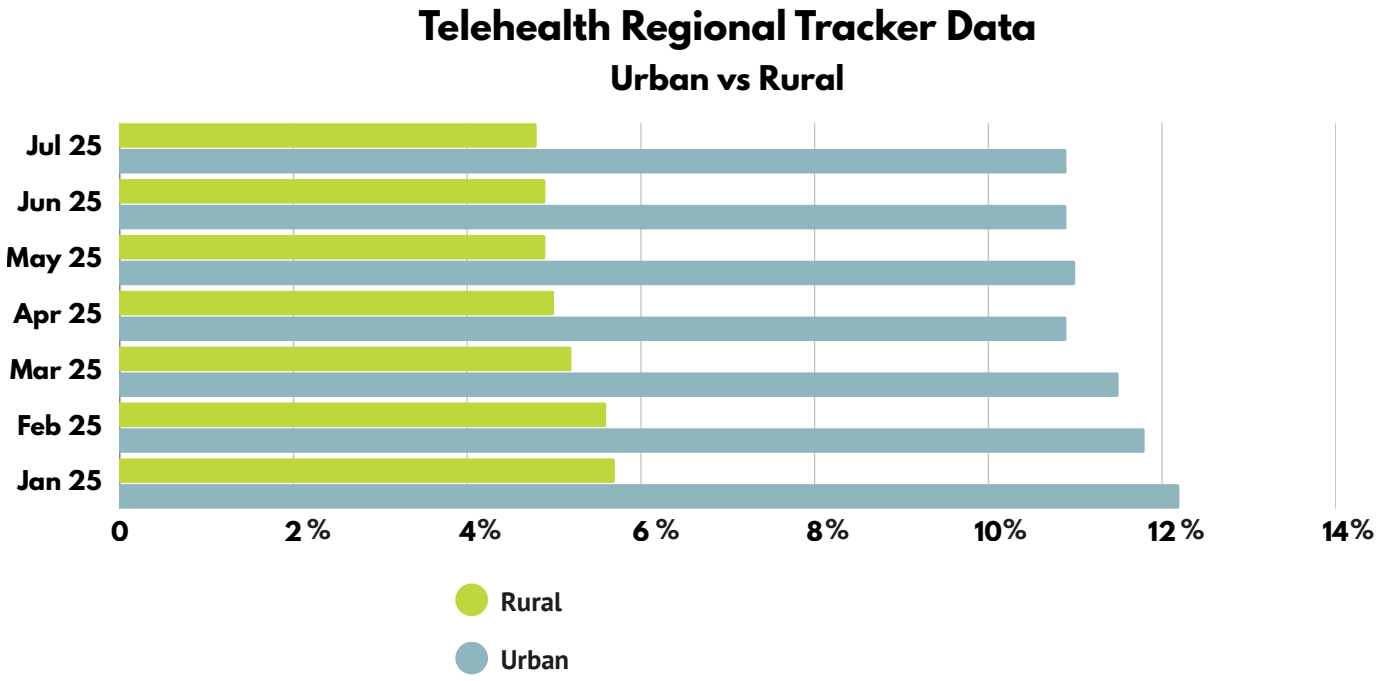
23% **Prefer a virtual visit for checkups.**

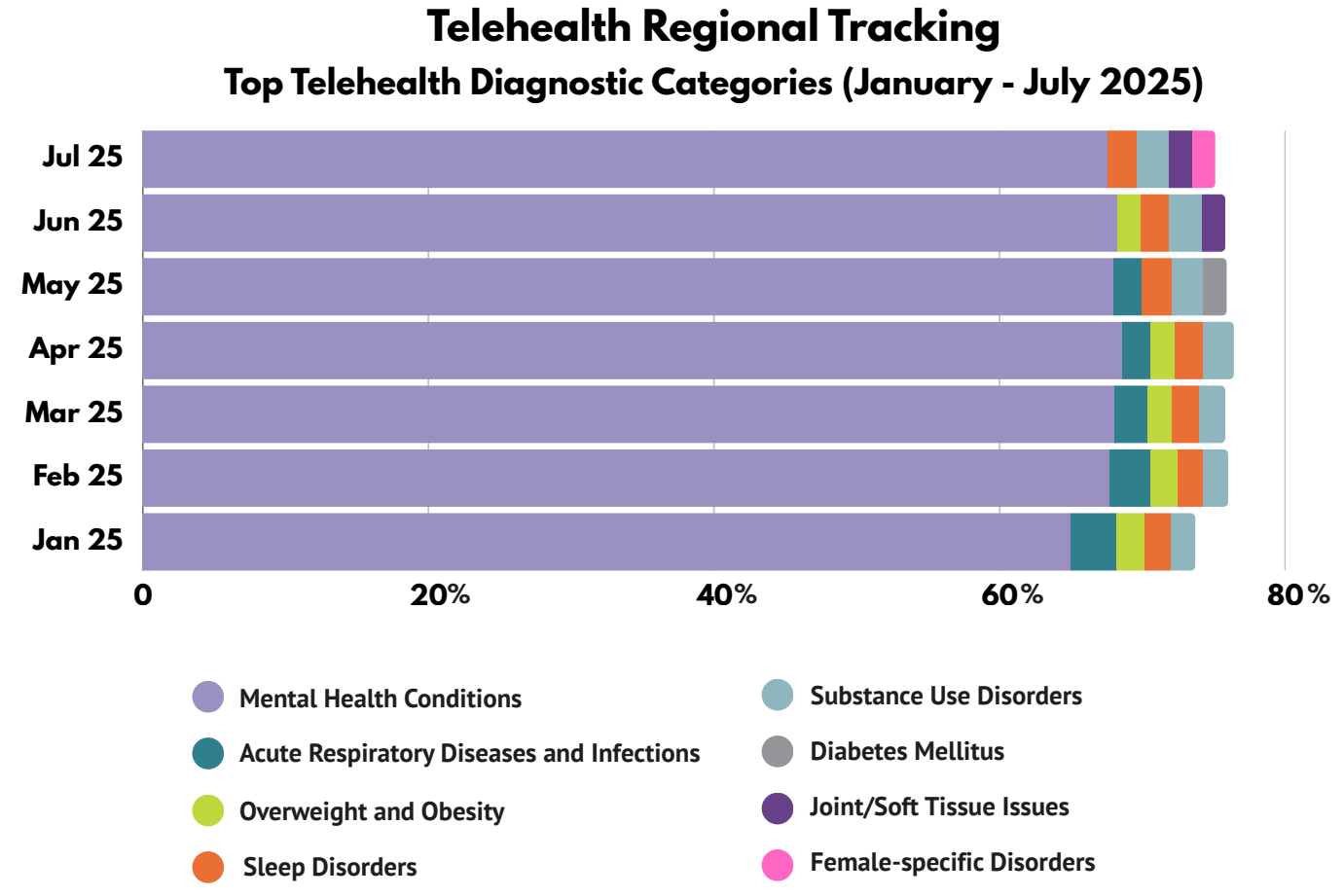
Beyond that, the Patient Adoption of Telehealth survey measured impact on overall health care, satisfaction with the patient's telehealth experience and the findings are as follows: 4% reported care was worse, 69% reported care was about the same, 27% reported care was better. With 5% reporting decreased satisfaction with care, 46% reporting increased satisfaction with care, and 49% reported no change in satisfaction.

When considering availability, access and preference to care within the telehealth system, continued patient engagement is a complex topic that poses its own challenges and potential economic impacts. As the factors of sociocultural acceptance of telehealth are further researched, patient demographics, care management needs, and attitude toward virtual care can positively impact appointment rates and provider efficiency.

Regional Overview

2025 Mid-Western regional trends[10], which encompass the four states in the UMTRC service area, highlight disparities in the utilization of telehealth between urban and rural communities, as well as the profound need to adequately bridge the gap to tele-behavioral health access in rural areas.





A 2025 publication on an analysis of telehealth in a post-pandemic rural, Midwestern community[33] supports the idea of sociocultural acceptance of telehealth being embedded in patient perceived usefulness (PU) and perceived ease of use (PEOU) and facilitating conditions of virtual care. Of the 253 respondents, the three most common concerns among participants on telehealth were:

32%
Preferred In-Person Care

21%
Belief in Lower Quality of Care

16%
Lack of Quality Internet Service

Findings further showed how internet stability factored into how comfortable participants felt participating in a virtual visit as well as their considerations in participating in a telehealth visit, if suggested by their provider.

Additional Resources

Making Telehealth Understandable for Every Patient: Health Literacy: Telehealth has enormous promise - expanding access, reducing travel burden, enabling frequent touchpoints - but if patients cannot understand or act on information delivered virtually, its benefits will fall short. Follow the link above to learn more.

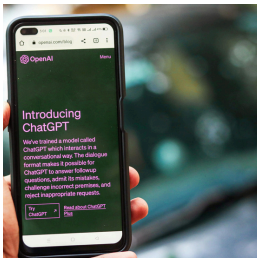
Telehealth & Health Equity Toolkit: This toolkit is intended to provide a closer look at telehealth and health equity.

Technology Literacy and Telehealth: Bridging the Gap: New and novel health technologies can provide exciting new ways to monitor patient health and provide care. However, those technologies are only useful when patients and providers understand how to use them. Utilize the literature above to expand your knowledge and engage patients.

Telehealth and Substance Use Disorder: Breaking Down Barriers to Treatment: In the dynamic world of healthcare, telehealth has emerged as a transformative force. One area where its impact is particularly profound is in the treatment of Substance Use Disorder (SUD). Dive into how telehealth is revolutionizing the landscape of SUD treatment and look at recent legislative changes that will make SUD telehealth treatment more accessible and effective.

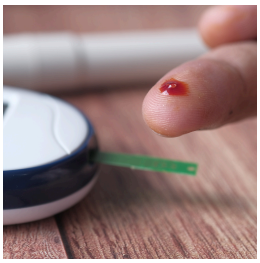
TECHNOLOGY AND TELEHEALTH

Telehealth, as the world knows, has come a long way from its early 20th century roots of simple telecommunication consultations with patients, to a fully immersive and comprehensive healthcare experience. Technologies, such as **Artificial Intelligence (AI), Internet of Things (IoT), Virtual Reality (VR), Augmented Reality (AR), and Electronic Health Records (EHRs)** have proven extremely promising in increasing access to and outcomes of patient care[9].



Artificial Intelligence (AI)

Artificial Intelligence (AI) supporting image interpretation, natural language processing, virtual health assistants to enhance patient engagement and adherence to treatment plans, and remote patient monitoring (RPM) has been found to enhance diagnostic accuracy, treatment planning, and overall healthcare efficiency.



Remote Patient Monitoring (RPM)

Remote Patient Monitoring (RPM) and the integration of the Internet of Things (IoT) syncs patient self-monitoring of vital signs and daily activities with real time data transmission via wearable devices; increasing oversight and the health management of patients2.

Virtual Reality (VR)

Virtual Reality (VR) affords practitioners the opportunity to gain field experience as a provider, in an alternate dimension, which immerses them in lifelike scenarios to strengthen skills and decision making while remaining patient centered and protecting their safety

Augmented Reality (AR)

Augmented Reality (AR) acts to overlay patient information, with a virtual realm, to support providers during procedures in real time. This blended view of reality vs. virtual realm is utilized to enhance the precision of medical interventions as well as open new avenues for remote collaboration and consultation40.

Electronic Health Records (EHRs)

Electronic Health Records (EHRs) provide efficient access, updates, and managed patient health information during virtual consultations with practitioners. Centralizing all data in a single system to reduce errors and enhance the precision and promptness of patient care.

National Overview

Artificial Intelligence (AI): As illustrated and expanded upon by Chaturvedi, U., Chauhan, S. B., & Singh, I. (2025)[7], the benefits of AI on healthcare go beyond telehealth, and encompass many factors of patient care.

AI Benefits in Healthcare

Training

AI enhances the training of healthcare professionals through virtual simulations, personalized learning, and real-time feedback.

Research

AI accelerates medical research by analyzing vast datasets to identify trends, discover new treatments, and support drug developments.

End-of-Life Care

AI ensures compassionate and effective end-of-life care by supporting advanced care planning and monitoring patient comfort.

Treatment

AI personalizes treatment plans by considering individual patient data, leading to improved outcomes.

Keeping Well

AI supports preventative healthcare by monitoring health trends and promoting proactive wellness strategies.

Early Detection

AI algorithms enable the identification of diseases at initial stages through advanced diagnostic tools and predictive analytics.

Diagnosis

AI improves diagnostic accuracy by analyzing medical images, patient history, and test results to support clinical decisions.

Decision Making

AI aids healthcare providers by offering data-driven insights and personalized treatment recommendations.

When considering the use of AI, in telehealth specifically, it is important to not only understand the benefits but also ensure proper integration to protect patients. The American Telemedicine Association[4] outlines considerations for providers as they use AI in telehealth, key takeaways are:

Accountability and Engagement

Ensuring that providers are as engaged and held to the same care standard as if they were conducting an in-office visit.

Transparency and Understanding

Providing the appropriate disclosures and consents to patients, with health literacy measures in mind, on how their health data is being collected, stored, utilized, and protected. Prioritizing privacy, HIPAA compliance, and patient rights.

Clear Regulatory Guardrails

A unified AI regulatory framework that considers state, national, and international best practices, while not interfering with feasible implementation and future innovation.

Economic and Workforce Evolution

Focus on the integration, adoption, and involvement of AI in the workforce. Encompassing best practices and professional development/trainings.

AI-Powered Remote Patient Monitoring (RPM)

It is estimated that 50 million Americans are now using an RPM device; directly assisting their providers in managing care, preventing rehospitalizations, and monitoring vitals. As the U.S population continues to age, chronic disease becomes more prevalent, and the demand for virtual care rises, these factors have become a driving force in the U.S accounting for nearly 42% of the RPM market share. It is anticipated that the RPM market will grow from $2.15-billion-dollar industry in 2024, to 11.49-billion-dollar industry by 2030. A Compound Annual Growth Rate (CAGR) of 18.22% in the next 9 years[32].

The current status of RPM program coverage in the United States, and the UMTRC region of Illinois, Indiana, Ohio and Michigan, can be understood by consulting the Center for Connected Health Policy (CCHP) State Health Policies Remote Patient Monitoring interactive map. This interactive resource provides detailed, state-by-state information on telehealth and RPM policies, including reimbursement, eligible services, and provider types.

Virtual Reality (VR) and Alternate Reality (AR)

There are currently 92 U.S Food and Drug Administration (FDA) approved AR and VR devices for marketing in the United States. These devices have been approved based on safety ratings and are primarily for use by providers but in some cases may be used by patients[6]. The utilization of both Virtual Reality (VR) and Alternate Reality (AR) has the potential to treat patients across a variety of conditions and needs. Currently, the most utilized areas for AR and VR are remote patient monitoring (RPM), vision screenings, mental health therapy, and physical therapy[21].

Electronic Health Records (EHRs)

Just as the RPM market has surged, so has the adoption of EHRs across healthcare systems. Over the past decade, the use of electronic health records has increased from 76% in 2015 to 96% in 2025. These electronic systems are intuitive, foster cross communication between providers, and reduce administrative burdens in clinics. However, the implementation of an EHR system can be burdensome for smaller systems, with an average of $162,000 needed to implement and an additional $85,000 to maintain. This cost includes direct and indirect cost, staffing and unexpected cost that may go unidentified in the planning phase[13].

Regional Spotlight

Below are state highlights from the UMTRC region, and how they have utilized RPM to improve health outcomes for patients.

Indiana

Deaconess Health RPM program reduces cost of care by $7.4 million and has helped the health system drop its 30-day readmission rate from 14% to 6%[35].

Michigan

Michigan Medicine's RPM program cuts hospital admissions by nearly 60%. This program uses Bluetooth-enabled devices for real-time monitoring, with data reviewed daily by a clinical team for timely intervention[18].

Illinois

Cook County, Illinois launched a maternal health pilot project, through Drive Health's AI-powered Nurse Avery. Launched in May 2025, the pilot aims to serve 56,000 rural participants. Participants receive a Google Pixel 8a phone to communicate with Drive's AI agent, Avery, and a Fitbit Inspire 3 device that tracks physical activity, heart health data and sleep vitals[11].

Ohio

University Hospitals (UH), Cleavland launched a new Remote Patient Monitoring (RPM) program in July 2025. The effort is focused on enhancing the care and management of patients with uncontrolled hypertension[38].

Other Resources

The Importance of Telehealth Technology
Without effective and appropriate technology, telehealth cannot be delivered. Selecting the appropriate technology for telehealth can be a challenging task, as there are several factors to consider. Follow the link above for resources related to telehealth technology basics.

Telehealth Technology Assessment
A telehealth technology assessment is the process of evaluating the effectiveness, usability, and feasibility of telehealth technologies to ensure they meet the needs of healthcare providers and patients. Follow the link above for more information.

Telehealth Technology Maintenance and Upkeep
Telehealth technology maintenance and upkeep are essential to ensure the smooth operation of telehealth systems and the delivery of high-quality patient care. Follow the link above for more information.

Telehealth.HHS.gov
Provides information on helping patients use telehealth, putting them at ease and preparing them for a successful appointment.

Virtual Reality and Telehealth: Exploring New Frontiers of Care Delivery AND What is the Ultimate Destination of Virtual Care?
Dive into a discussion about the impacts of VR on patient care and how it can impact outcomes.

Remote Patient Monitoring Devices: Using Technology and Data to Make
RPM devices offer an illuminating view into patient health – not just for providers but for patients as well.

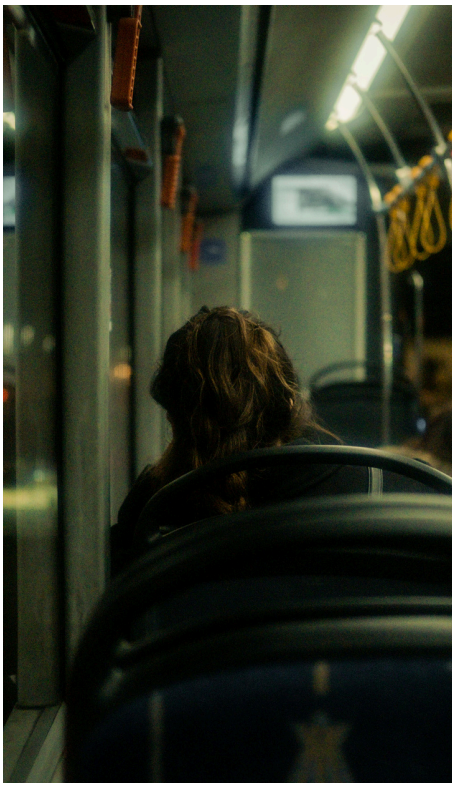
ENVIRONMENTAL IMPACT

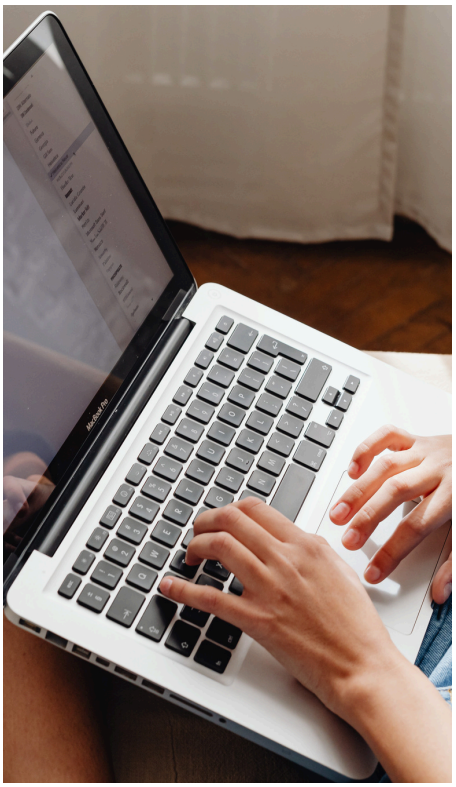
While there remains scant research specifically designed to investigate the environmental impact of telehealth use in the United States healthcare system, systematic literature reviews of what research has been done to identify both the advantages and disadvantages of telehealth on the environment have yielded important findings[29].

Historically, traditional healthcare services' environmental impacts have been monitored, researched, and ultimately found to account for up to 5% of a country's annual carbon footprint, contributing significantly to the production of greenhouse gases and air pollutants. However, the rapid expansion of telehealth during the COVID-19 pandemic occurred largely without a comprehensive consideration or realization of its own environmental implications[35].

However, there have been many positive environmental impacts identified which are mostly related to a reduction in travel required by the patient and/or the provider to seek and give care. Specifically, the reduced greenhouse gas emissions (after accounting for emissions from the use of telehealth equipment), wastage reduction, air pollutant emission savings, and reduced sanitation required for consultations[29,31].

The identified challenges of telehealth on the environment are directly connected to the digitalization of care, with 45% of research in this space pointing to bandwidth as the main contributor to environmental hazards. While the latter seems counterintuitive to the advantages discussed, the digital component of telehealth introduces its own carbon footprint. It is noted that these findings are said to vary depending on whether the patient setting is urban or rural, and if the technological equipment being used to host telehealth is of the highest efficiency.





National Overview

Having been identified as one of the most promising environmental impact investments, for addressing environmental sustainability, there has been a growing research interest in the topic of virtual healthcare versus face-to-face visits.

This is most recognizable in the United States since the release of the World Health Organization (WHO) Sustainable Development Goals (SDGs) on their 2030 agenda[34]. Stating their intention of utilizing the advancements of telehealth technologies to help them reach the goal of global well-being. Specifically, through translational research, knowledge sharing across communities of practice, and community engaged initiatives that are based on population needs[42].

When considering the environmental impacts of telehealth, the study Infrastructure: The environmental impacts of telemedicine in place of face-to-face patient care: a systematic review identifies that the types of services utilized across service providers, along with the factor of avoided travel, need to be considered when identifying the net environmental impact of telehealth.

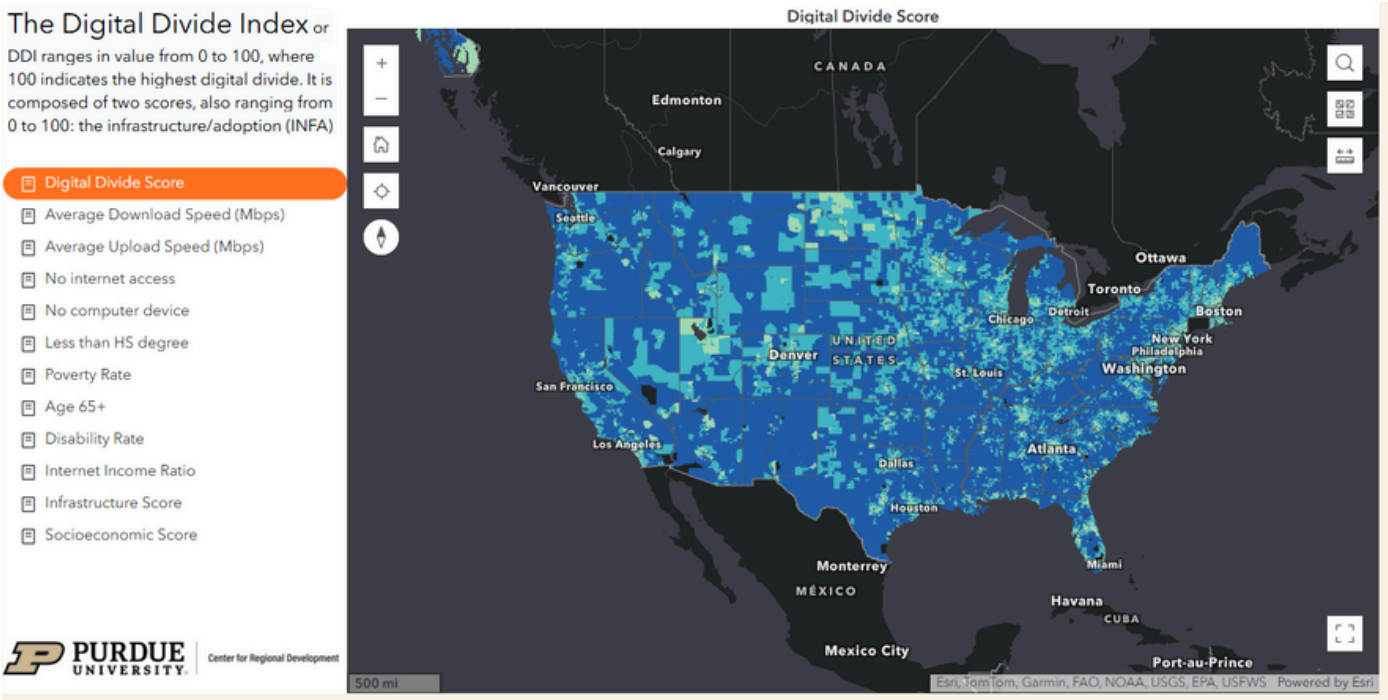
According to research findings, an estimated 719 to 2,020 videoconference visits can prevent between 66.54 kilograms of emissions at the lower end and up to 305.97 kilograms of emissions at the higher end from being released into the atmosphere. That translates to between 164-757 miles saved in travel by patients in a typical gasoline operated vehicle. One study found that bandwidth and duration of consultation had the greatest effect on released emissions[31].

If looking at avoided travel only, and not the impact of telehealth equipment too, the highest mileage savings came from practitioners with the highest number of telehealth consultations in their practice. A 50% replacement of face-to-face visits with telehealth was found to result in a reduction in air pollution and greenhouse gas emissions: reducing carbon dioxide (985 tonnes CO2) carbon monoxide (25 tonnes), nitrogen oxide (1.9 tonnes), and volatile organic compounds (2.8 tonnes).

However, broadband access has played a significant role in whether patients have access to telehealth, regardless of whether it is environmentally and time saving. According to the A review of emerging trends in telemedicine: Healthcare delivery transformations, there needs to be education, integration, and robust internet connectivity to increase access to telehealth; especially in rural communities[9]. The implications of rural Americans without the infrastructure and devices of telehealth, the digital skills and comfort to use the platforms, and the language and privacy to use with confidence creates a digital divide that is built on market economics and perceptions of less profitable investments.[14]

Regional Spotlight

Created using the 5-year American Community Survey (ACS) and Ookla Speedtest® open dataset, Purdue University created the Digital Divide Index (DDI)[30]. The interactive DDI index map was developed based on two separate scores, the infrastructure/adoption (INFA) score, and the socioeconomic (SE) score (DDI = INFA + SE). Ranging between a score of 0 and 100, with a score closer to 100 being indicative of a larger digital divide.



The INFA score weighs the number of speed tests based Ookla Speedtest® open dataset, and the variables related to broadband infrastructure and adoption; the factors are the percent of homes without a computing device (desktops, laptops, smartphones, tablets, etc.); homes with no internet access (have no internet subscription, including cellular data plans or dial-up); average download and average upload speeds in Megabits per second (Mbps).

The SE score weighs variables that directly impact technology adoption, they are the percentage of the population ages 65 and over, percentage of the population 25 and over with less than high school education, and the percentage of noninstitutionalized civilians with a disability. As well as individual poverty rate and a digital inequality or internet income ratio measure (IIR).

UMTRC Digital Divide Index Score Trends

State	2019	2020	2021	Score Difference
Illinois	43	35.65	39.3	-3.7
Indiana	48.7	36.68	39.56	-9.1
Michigan	60.22	54.26	55.15	-5.1
Ohio	62.5	57.21	56.43	-6.1

In 2021, President Biden signed the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law (BIL). The BIL encompassed the Broadband Equity, Access, and Deployment (BEAD) program, which prioritizes unserved locations that have no internet access or limited access under 25/3 Mbps and underserved locations that only have access under 100/20 Mbps[26].

By the end of 2023, all 56 states and territories across the United States had submitted a Broadband Equity, Access, and Deployment (BEAD) program initial proposal. These plans proposed how each state and territory intended to allocate their portion of the $42 billion dollar investment to connect their communities to reliable and affordable internet services, while providing the training needed to support the expansion.

Broadband Equity, Access, and Deployment (BEAD) program proposal information for the UMTRC regional states of Illinois, Indiana, Michigan, and Ohio are linked below.

Illinois

- Illlinois Department of Commerce & Economic Opportunity: Broadband Equity, Access and Deployment (BEAD) Program
  - Illinois received $1.04 billion in BEAD funds.

Indiana

- Indiana Broadband
- Indiana received 868 million in BEAD funds.

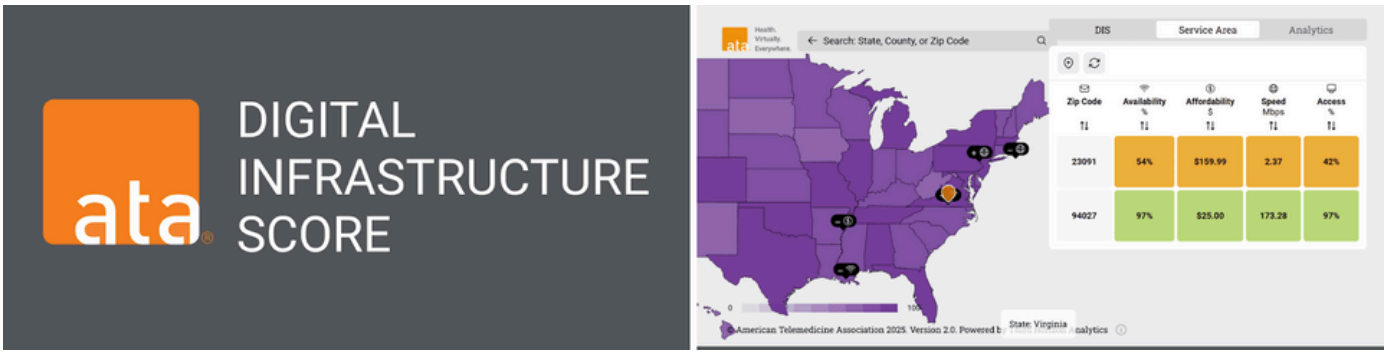
Michigan

- Michigan Labor and Economic Opportunity: Broadband Equity, Access, and Deployment (BEAD) Program 5-year action plan.
  - Michigan received $1.5 billion in BEAD funds.

Ohio

- Ohio Department of Development: BEAD Grant Program
- Ohio received $793 million in BEAD funds.

To further support bridging the gap of the digital divide, the American Telehealth Association developed an interactive map that measures a community's capacity and readiness to use technology[3]. Utilizing the Digital Infrastructure Score and Mapping Tool practitioners, partners and residents alike can make data driven decisions to work toward increasing technological access for residents across their region, state, and communities[3].



Additional Resources

Building on the Foundation of the Indiana Telehealth Network - Attica Consolidated School Corporation Installs High-Speed Fiber in Partnership with Indiana Fiber Network (IFN)

The City of Attica and Attica Consolidated School Corporation are directly benefiting from the 24 miles of fiber, constructed by IFN, which connected St. Vincent Williamsport Hospital in Williamsport, Indiana, to the Indiana Telehealth Network. Click the link above for the full story.

Blackford County Joins ITN, Gains Access to Fiber

Indiana University Health Blackford Hospital is the newest member of the Indiana Telehealth Network enjoying broadband connectivity. For the full story, click the link above.

Fiber for St. Vincent Williamsport, Fountain, and Warren Counties

The Rural Health Care Pilot Program, through the Indiana Telehealth Network, has successfully brought fiber to St. Vincent Williamsport and Fountain and Warren Counties.

Indiana Telehealth Network Brings Broadband to Rush Memorial Hospital

Rush Memorial Hospital partnered with the Indiana Telehealth Network, Indiana Rural Health Association, and NineStar Communications to bring broadband access to the hospital and surrounding Rush County. Follow the link for the full press release.

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