Increased Wellness and Economic Return of Universal Broadband Infrastructure

A Telehealth Case Study of Ten Southern Rural Counties

By Ry Marcattilio and Christopher Mitchell

January 2022
About the Southern Rural Black Women’s Initiative

The Southern Rural Black Women’s Initiative for Economic and Social Justice (SRBWII) was founded in 2001 to promote the first human rights agenda in the United States aimed at eradicating historical race, class, cultural, religious, and gender barriers experienced by southern rural Black women. Over the past 20 years, SRBWII has engaged over 3,000 women in 77 counties across the Blackbelt of Alabama and Georgia, and the Mississippi Delta in countering the generational impact of unremitting systemic, institutionalized discrimination and abuse faced by rural Black women in the U.S. South. SRBWII’s programs range from policy advocacy and advocacy reform to intergenerational leadership, asset building, and economic empowerment. SRBWII believes that the battle against poverty and inequity cannot be fought or won without the voice and participation of southern rural Black women, who are trying desperately to provide for their families in under-resourced, economically distressed, and persistently poor counties. For more information, please visit our website: http://srbwi.com

About the Institute for Local Self-Reliance

The Institute for Local Self-Reliance (ILSR) is a national nonprofit research and educational organization founded in 1974. ILSR has a vision of thriving, diverse, equitable communities. To reach this vision, we build local power to fight corporate control. We believe that democracy can only thrive when economic and political power is widely dispersed. Whether it’s fighting back against the outsize power of monopolies like Amazon or advocating to keep local renewable energy in the community that produced it, ILSR advocates for solutions that harness the power of citizens and communities. Read more about us at www.ilsr.org.

About the Authors

Ry Marcattilio-McCracken is a Senior Researcher with the Community Broadband Networks Initiative for the Institute for Local Self-Reliance, where he writes about locally owned networks of all shapes and sizes and broadband policy around the country.

Christopher Mitchell is the Director of the Community Broadband Networks Initiative. His work focuses on telecommunication policy and advocating for local Internet choice in communities.

Acknowledgements

This report was the result of work by a group of creative, hard-working, thoughtful researchers both at the Institute for Local Self-Reliance and beyond. Thanks to Research Associate Emma Gautier for data and graph work. Thanks to GIS and Data Visualization Specialist Christine Parker for additional data and mapping work. Thanks to Eric James for building the telehealth website calculator. Thanks to Jonathan Chambers, Partner at Conexon. Thanks to Tessa Eidelman for her foundational contribution to ILSR’s telehealth work.

Thanks also H. Trostle, Erin Shirley, and Chisa Lanier for their early work on this report. Thank you to Michelle Andrews and Sara Tohamy for contributing mapping and data analysis.

This report was produced with support from the Southern Rural Black Women’s Initiative.

Finally, many thanks to the individuals who were generous with their time in providing feedback on early drafts and insights into telehealth initiatives around this country. Any errors are ours, not theirs. Thanks to Katie Heidorn, Executive Director of Insure the Uninsured Project; Robert Wack, Chief Medical Information Officer at Frederick Regional Health System; and Matthew Rae, Associate Director at the Kaiser Family Foundation.
Contents

About The Southern Rural Black Women’s Initiative ........................................... 1
About The Institute For Local Self-Reliance ....................................................... 1
About The Authors ......................................................................................... 1
Acknowledgements ......................................................................................... 1
Executive Summary ......................................................................................... 1
Introduction ..................................................................................................... 4
What’s The Problem? ....................................................................................... 6
What Is Telehealth? ......................................................................................... 6
Healthcare And Telehealth Challenges In Rural America .............................. 6
A Note On Telehealth Use And Savings ......................................................... 7
Part 1: Health Conditions And The Potential Telehealth Savings Of Those Conditions ......................................................................................... 9
Congenital Heart Disease And Cardiovascular Disease ............................. 9
Diabetes ......................................................................................................... 10
Chronic Respiratory Disease ........................................................................ 10
Cancer .......................................................................................................... 10
Mental Health .............................................................................................. 11
Tuberculosis .................................................................................................. 12
Obesity ........................................................................................................... 12
Part 2: Modeling Health Savings .................................................................... 13
Total Projected Savings ................................................................................ 13
Lost Productivity ........................................................................................... 13
Preventable Admissions .............................................................................. 14
Preventable Readmissions .......................................................................... 15
Preventable Transportation Costs ............................................................... 18
Preventable Carbon Emissions ................................................................... 19
Who Benefits From Avoided Costs? ............................................................ 20
Part 3: Cost To Build Wired/Wireless Networks .......................................... 22
Ongoing Monthly Subsidies ......................................................................... 23
Digital Inclusion Programs .......................................................................... 23
Conclusion ..................................................................................................... 24
Limitations ..................................................................................................... 24
Internet Use And Comfortability ................................................................. 24
Conclusion ..................................................................................................... 25
Appendix 1: Current State And Fcc Initiatives ............................................. 26
Alabama ........................................................................................................ 26
Georgia ......................................................................................................... 26
Mississippi ..................................................................................................... 26
Appendix 2 ..................................................................................................... 28
References .................................................................................................... 33
Endnotes ........................................................................................................ 36
Executive Summary

This project examines 10 counties in rural Alabama, Georgia, and Mississippi to explore how the costs of achieving true digital equity - by extending robust broadband infrastructure into areas missing it - can be offset by utilizing the potential of telehealth to improve healthcare delivery.

To do so, this report first identifies the most common health issues affecting residents in these 10 counties, and draws on academic scholarship to demonstrate the benefits that could come from effective telehealth interventions for each. These conditions include diabetes, chronic respiratory disease (including asthma, chronic obstructive pulmonary disease, and emphysema), heart disease and heart failure, cancer, obesity, and mental health conditions associated with other health conditions, resulting in high overall costs and adverse effects on people’s quality of life, like depression and PTSD.

Second, it models the cost savings that can be gained from telehealth interventions in reducing the cost of services that are driving the highest costs today. These include preventable hospital admissions, preventable hospital readmissions, and preventable emergency department visits. It also calculates other recapturable savings that would benefit these communities at large, including the lost economic productivity that goes along with missed work, the avoidable transportation costs that come from being able to visit the doctor remotely, and the avoidable carbon emissions that come from driving to in-person doctor visits.

The results are striking by themselves, but even more so together. By the most reasonable conservative estimates, we show that preventable emergency department visits, preventable hospital admissions and readmissions, and lost economic productivity offer huge savings opportunities for these ten counties, totaling almost $43 million each year (see table below).

### Table 1. Annual Potential Savings by County

<table>
<thead>
<tr>
<th>County</th>
<th>Annual Savings Across All Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunflower County, Mississippi</td>
<td>$5,039,273</td>
</tr>
<tr>
<td>Leflore County, Mississippi</td>
<td>$6,492,721</td>
</tr>
<tr>
<td>Greene County, Alabama</td>
<td>$2,016,891</td>
</tr>
<tr>
<td>Sumter County, Alabama</td>
<td>$2,963,790</td>
</tr>
<tr>
<td>Hale County, Alabama</td>
<td>$2,277,231</td>
</tr>
<tr>
<td>Perry County, Alabama</td>
<td>$1,832,666</td>
</tr>
<tr>
<td>Baker County, Georgia</td>
<td>$350,391</td>
</tr>
<tr>
<td>Dougherty County, Georgia</td>
<td>$16,179,393</td>
</tr>
<tr>
<td>Mitchell County, Georgia</td>
<td>$3,179,561</td>
</tr>
<tr>
<td>Worth County, Georgia</td>
<td>$2,562,451</td>
</tr>
<tr>
<td>totals</td>
<td>$42,894,368</td>
</tr>
</tbody>
</table>

Graph 1. Annual Potential Savings Ranges by County
Graph 2. Annual Potential Savings by Category

The potential to reduce the amount spent on healthcare across the United States by expanding robust, affordable, universally accessible broadband infrastructure pales in comparison to the amount those networks would cost to build and operate. Furthermore, once in place, those networks would last a minimum of twenty years; in practice, the lifespan of modern fiber optic infrastructure is often twice that. The cost to build and operate robust, affordable, universally accessible broadband infrastructure pales in comparison to the potential that exists to reduce the amount spent on healthcare across the United States.

For instance, studies show that the Department of Veterans Affairs could save tens of millions of dollars a year alone in avoided transportation expenses by underwriting the costs of broadband infrastructure and/or subscriptions for the populations it serves.

In addition, the data show that for just one condition—heart failure—hospital readmission rates after surgery will lead to a nationwide cost of $70 billion every year to the healthcare system by the year 2030. Telehealth programs can significantly reduce these rates—in the case of one Pennsylvania healthcare system initiative, from 19 percent to 5 percent. The savings from every preventable readmission exceed $14,000. Preventable hospital readmissions cost the ten counties in this report over $56 million per year. A 10 percent reduction would lead to tens of millions of avoided costs over a 20-year period.

In order to realize these savings, however, patients must have access to robust broadband infrastructure capable of letting them meet with their doctors over the Internet, access discharge instructions or educational materials, or participate in device-assisted programs remotely. But more than 62,000 residents across almost 32,000 households in the study region lack home connections capable of doing so. These households remain fundamentally unserved by basic broadband service capable of meeting the needs of the twenty-first century.

Using cost estimates from Conexon, a leading consultant working with electric cooperatives to build fiber optic networks in rural regions, we estimate the one-time cost of building a fiber network to every unserved household in these 10 counties to be approximately $100 million. In addition to those build costs, we estimate the costs of needed annual connection subsidies to be about $19 million.¹

So for example, even after disregarding Dougherty County, which is an outlier in having much greater savings potential and lower cost of building a network due to its density and the majority of its residents already having some level of broadband service, the conservative savings of approximately $30 million per year still offers a rapid payback on the needed digital equity investments.

Even more encouraging is that we believe these calculations represent the most conservative estimates based on a review of pilot studies and the academic literature on telohealth interventions. Where scholars or industry studies suggest a range of savings possible according to the above variables, we have taken the lowest estimate.

The telehealth savings modeled in this report certainly do not all go to one place. Some flow to the hospitals in the form of avoidance of the Medicare penalties that come from high readmission rates. Others flow to patients by preventing missed, unpaid work days
and the travel costs it takes to drive to the nearby clinic for an emergency visit, or a faraway clinic for specialty care. Still others go to the communities themselves in the form of increased economic productivity for the region at large.

**TABLE 2.**

<table>
<thead>
<tr>
<th>Avoided cost</th>
<th>Annual Saving Across All Counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Department Visits</td>
<td>$13,182,983</td>
</tr>
<tr>
<td>Lost Productivity</td>
<td>$22,328,472</td>
</tr>
<tr>
<td>Preventable Admissions</td>
<td>$1,719,578</td>
</tr>
<tr>
<td>Preventable Readmissions</td>
<td>$5,636,357</td>
</tr>
<tr>
<td>Transportation Costs</td>
<td>$26,978</td>
</tr>
<tr>
<td>Total</td>
<td>$42,894,368</td>
</tr>
</tbody>
</table>

We take some space below to untangle these potential savings in more detail, but any argument that public dollars should not be invested to save hospital systems money holds little water. This is for two reasons. The first is that South Sunflower County Hospital, North Sunflower Medical Center, Greenwood Leflore Hospital, Greene County Hospital, Hill Hospital of Sumter County, and Hale County Hospital are public hospitals supported by county money. Reducing costs will directly and indirectly save taxpayers money. The second is that annual healthcare spending constitutes nearly 20 percent of the United States’ Gross National Product, totaling about $4 trillion every single year.

New broadband infrastructure enabling increased use of telehealth not only benefits the entire economy, but affords the array of other benefits that make broadband a social determinant of health. It unlocks workforce opportunities, makes independent businesses more competitive, and opens the door to microbusiness, all of which lead to higher area wages. It lets citizens connect with existing community resources and educational opportunities, improving community resiliency and leading to long-term benefits. And it offers the chance to reshape healthcare delivery to meet people where they are, facilitating cheaper preventative care while also reducing the cost of chronic and acute conditions systemwide.

Ultimately, this project shows that the cost savings from having true digital equity to support telehealth interventions is significantly greater than the cost of building network infrastructure and investing in skills training, especially over 10 and 20 years. Federal, state, and local governments should make the investments necessary to achieve digital equity and rapidly expand telehealth opportunities.
Introduction

The average broadband bill in the United States costs about $68/month per month, or a little more than $800 per year.2 Millions of families around the country today are unable to afford even the lowest-cost Internet access plans, despite help from federal subsidy initiatives like the Lifeline Program or the Affordable Connectivity Program. While these programs can dramatically lower the cost of connections - by as much as $40 under the right circumstances - it's simply not enough. This is especially true in rural areas, where the cost to build and operate infrastructure costs more per subscriber than it does in cities. This reality is already well understood by member-owned electric cooperatives, which have been creative and persistent in bringing essential services to some of the most remote parts of the country over the last hundred years.

Millions more households do connect, but continually struggle to pay for access. Millions and millions of Americans lack basic access at all, and are stuck choosing between unreliable, expensive, and slow satellite Internet access, or no connection whatsoever. These realities have led policy experts everywhere to agree that smart local, state, and federal policies need to "promote competition, increase billing transparency, and make Internet service more affordable" for everyone.5

And yet, the high cost of deploying infrastructure to improve Internet access in the United States pales in comparison to healthcare costs, which top $4 trillion every year.4 Industry numbers show that primary care through a physician’s office or an urgent care clinic costs, on average, $167 and $193 per visit, respectively, and the numbers quickly rise from there. The average emergency department visit clocks in at more than $2,000 per visit, with the extra costs driven by facility fees and lab, radiology, and pathology work, which costs many times more to perform in an emergency department setting than at a physician’s office.5

Admission for chronic or acute care gets even more expensive. The average inpatient hospital admission costs $11,700 per stay, or between $2,150 and $2,544 per day. Readmissions - whether because of complications following surgery or a complicating condition - cost even more, at $14,400 each.5

Comparatively then, from emergency department visits to readmissions, avoiding a single hospital stay could pay for 2.3 to 17.6 years of broadband access at current subscriber rates.

Researchers, equity advocates, and elected leaders at all levels of government are increasingly acknowledging what those who have lived without quality Internet access for a generation already know: that broadband is a strong social determinant of health. It contributes to the strength of community and family connections, access to education, access to community services, and access to telehealth services.7

Social Determinants of Health

This reality suggests a solution that has the potential to simultaneously solve the connectivity crisis and ensure that millions of American families that need it most can lead healthier lives. Building and subsidizing access to robust broadband networks capable of delivering telehealth services will return massive community savings for decades, even if just a small fraction of the costs that industry, scholars, and policy experts say is possible with interventions are recovered.

Graph 3. Modeling Telehealth Savings in Ten Southern Counties

To demonstrate the potential of telehealth savings compared to the cost of broadband deployment, this project looks at 10 counties in rural Alabama, Georgia, and Mississippi. These include Sunflower and LeFlore counties in Mississippi; Greene, Sumter, Hale, and Perry Counties in Alabama; and Baker, Dougherty, Mitchell, and Worth counties in Georgia. Major cities and population centers in the study region include Albany, Georgia (pop. 74,000); Greenwood, Mississippi (pop. 14,040); Indianola, Mississippi (pop. 9,450); Sylvester, GA (pop. 5,865); Livingston, Alabama (pop. 5,821); Camilla, Georgia (pop. 5,126); Eutaw, Alabama (pop. 4,012); and Marion, Alabama (pop. 3,275).
The goal of this report is to model the return on investment that would come from the construction of universal, robust broadband infrastructure to deliver affordable Internet access in these counties based on the avoidable costs from chronic and acute health conditions that can be gained from telehealth interventions. Electric cooperatives are particularly well-positioned to do this, given their history of not just bringing an essential service to rural areas, but democratizing modern technology to the benefit of the entire community.

These counties face some of the biggest connectivity challenges in the region, which directly impacts the potential impact of telehealth programs which could save significant money. To make a two-way video call and adequately plan for the demands of a quickly evolving telehealth landscape, households need to have connections capable of delivering at least 100/20 Megabits per second (Mbps). Unfortunately, as we can see in the table below, in many of these counties much of the population lacks even 25/3 Mbps service. In two counties - Greene County, Alabama and Baker County, Georgia - not a single household has access to a 100/20 Mbps connection.

### TABLE 3. NUMBER OF HOUSEHOLDS BY INTERNET ACCESS SPEEDS IN STUDY AREA COUNTIES

<table>
<thead>
<tr>
<th>State</th>
<th>County</th>
<th>Less than 25/3 Mbps</th>
<th>Less than 100/20 Mbps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Households</td>
<td>Percentage</td>
<td>Households</td>
</tr>
<tr>
<td>Alabama</td>
<td>Greene</td>
<td>1,451</td>
<td>37 percent</td>
</tr>
<tr>
<td>Alabama</td>
<td>Hale</td>
<td>2,227</td>
<td>34 percent</td>
</tr>
<tr>
<td>Alabama</td>
<td>Perry</td>
<td>2,135</td>
<td>53 percent</td>
</tr>
<tr>
<td>Alabama</td>
<td>Sumter</td>
<td>1,654</td>
<td>28 percent</td>
</tr>
<tr>
<td>Georgia</td>
<td>Baker</td>
<td>857</td>
<td>63 percent</td>
</tr>
<tr>
<td>Georgia</td>
<td>Dougherty</td>
<td>765</td>
<td>2 percent</td>
</tr>
<tr>
<td>Georgia</td>
<td>Mitchell</td>
<td>2,162</td>
<td>27 percent</td>
</tr>
<tr>
<td>Georgia</td>
<td>Worth</td>
<td>1,117</td>
<td>13 percent</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Leflore</td>
<td>1,042</td>
<td>9 percent</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Sunflower</td>
<td>1,756</td>
<td>20 percent</td>
</tr>
</tbody>
</table>

Data source: FCC Form 477 (Dec 2020)
Author: Christine Parker - ILSR

![Graph 4. Households Making Less than $35,000 per Year, by Race](image)

The report, for instance, points out the high rate of Black homes that lack access to wireline broadband and a computer when compared to both the United States as a whole and white households across the country.

In addition to the following report, this project includes an interactive website that provides the details of the case studies and potential benefits of telehealth, along with manipulatable variables so end users can change and see the benefits for their own communities wherever they live, and a spreadsheet of the data we used to compute these potential benefits. Visit The Cost of Telehealth savings calculator.

![Graph 5. Access to a Wireline Broadband and a Computer, by Race](image)

We are currently living at a nexus - a once-in-a-generation moment to solve the digital divide. This moment also offers the chance to revolutionize not only how we deliver health care services across the United States, but how we think about them as well. Overcoming the persistent challenges of our underbuilt national telecommunications infrastructure would unlock untold economic and educational benefits. And the expense could be offset by the savings it would bring to our health care system today.

Increased Wellness and Economic Return of Universal Broadband Infrastructure

WWW.ILSR.ORG
WHAT’S THE PROBLEM?

Up-front construction costs represent the most significant challenge to deliver broadband service, especially in lower average population densities or other deployment challenges. While the initial amount required to connect a new rural household may exceed $4,000, the cost to operate that connection once it has been made can be as little as $10 to $20 per month. Well-built fiber networks are both resilient and cost comparatively little to run, and the history of electric cooperatives that have embarked on broadband projects shows that they often already have most of the ingredients necessary to succeed in operating as Internet Service Providers.

As of 2022, there are opportunities to use federal broadband funds to unlock grant money and lower the barrier to begin construction. The Coronavirus Capital Projects Fund ($10 billion) and the Coronavirus Local Fiscal Recovery Fund ($130 billion), both administered by the United States Treasury, as well as the $42.5 billion NTIA-administered Infrastructure Investment and Jobs Act broadband fund, all offer states, counties, and cities a landmark opportunity to invest in new broadband infrastructure.

And so, with more than twenty years of research showing that telehealth interventions can save far more money than it will cost to ensure every American has robust, affordable broadband, and an unprecedented amount of money about to become available to ensure that nearly every household can have future-proof connectivity, only one question that remains is: will communities seize this opportunity before the moment has passed?

WHAT IS TELEHEALTH?

Telehealth is the use of information technology to provide health care services over vast distances. For the purposes of this study, we focus on the economic benefits of providing remote delivery of clinical services, distance consultations, and in-home monitoring devices and education efforts with tablets. However, telehealth also broadly includes continuing education, conferences, doctor training, the review of imaging by specialists far from where scans were taken, accessing electronic health records, and e-prescription services. Additionally, telehealth is widely used to provide specialized health care access to underserved communities with physician shortages. Sometimes, the term “telemedicine” is used to describe the clinical delivery side of the health care industry, and “telehealth” the broader application of digital tools to medicine in all of its facets. However, given the wider use of the term “telehealth” in the mainstream media, in this report we use the term “telehealth.”

HEALTHCARE AND TELEHEALTH CHALLENGES IN RURAL AMERICA

Health care services are not uniformly available across the United States. To remedy this, communities experiencing shortages of health care services can receive a “medically underserved areas” (MUAs) or “medically underserved populations” (MUPs) designation by the federal Health Resources and Services Administration (HRSA), which helps funnel expertise and financial resources in those directions. Rural counties in Alabama, Georgia and Mississippi are almost all categorized as MUAs due to physician and hospital shortages.

Compared to their urban counterparts, rural communities are much less likely to have access to physician specialties and emergency physicians, which results in more travel time and other logistical obstacles for those needing specialized care. 20 percent of Americans live in rural communities, yet only 11 percent of physicians practice medicine in rural communities.

Rural regions, in addition, face comparatively greater health care challenges from other social determinants of health, including median older ages, lower incomes, increasingly fewer hospitals, trauma centers, and specialty clinics, higher rates of chronic diseases and other leading causes of death, and increased rates of smoking and obesity.

People in rural and medically underserved communities can benefit greatly from telehealth. The Centers for Disease Control and Prevention reports that populations in rural America are older and more likely to suffer from preventable chronic diseases than their urban counterparts. Rural communities have a higher rate of uninsured residents with limited health care access. Additionally, rural residents are more likely to have a sedentary lifestyle, have higher rates of hypertension, cigarette smoking and obesity, which all are risk factors for chronic illnesses such as cancer and heart disease.

The data shows that these ten counties in particular would benefit from interventions like telehealth, which provide low-cost, low-barrier avenues towards better care. This is in part because of the relatively high rate of residents who both make under $25,000 per year and who have no health coverage today (see graph below).

METHODS

This report brings together a wide array of source material to try and imagine what access to universal broadband infrastructure and telehealth could save in healthcare costs in ten counties across Mississippi, Alabama, and Georgia. It uses academic studies, industry reports, and federal agency reports to calculate the costs of some of the most expensive chronic and acute conditions affecting residents, as well as come up with figures to model the potential savings. Specific data were pulled from the following:

The ACS 5-Year Estimates offer a broad summary of social, economic, demographic, and housing data across the country every five years. The CMS National Health Expenditures Projected estimates future health expenditure and trends over the next 10 years. Dignity Health indexes the health needs of each county nationwide. The Kaiser Family Foundation releases emergency department rates by hospital ownership type. UnitedHealth Group released a fact sheet outlining the annual aggregate cost of avoidable hospital emergency department visits to the healthcare system. The Centers for Medicare & Medicaid Services (CMS) releases health-related data to the public and the CMS Office of Minority Health maps Medicare
disparities by population. The County Health Rankings & Roadmaps supported by the Robert Wood Johnson Foundation (RWJF) of the University of Wisconsin Population Health Institute releases data that highlights health disparities between communities and demonstrates how health factors influence community outcomes. The U.S. Department of Labor Minimum Wage page outlines the federal minimum wage. The U.S. Bureau of Labor Statistics Occupational Employment and Wage Statistics page outlines median wages by multiple parameters including county and state, as well as metropolitan and nonmetropolitan area definitions. Bill Siwicki’s 2019 article in Healthcare IT News explains how healthcare organization Cigna’s decision to introduce digital care services in order to reduce emergency department visits. FRED Economic Data releases annual rates of preventable hospital admissions by state and county. The State of Mississippi produced an audit in 2017 assessing the financial health of Mississippi’s independent county-owned rural hospitals. The EPA estimates greenhouse gas emissions per mile. The BTS releases average fuel efficiency of U.S. light duty vehicles.

This report also uses interview and survey data from residents living across these ten counties. Trained community organizers conducted one-on-one interviews over several months in the fall of 2021, pulling together qualitative experiences related to Internet use, cost, and healthcare. Scattered throughout this report are Resident Testimonials reflecting these interviews. At the same time, ILSR conducted a Facebook survey directed at residents of the county study area to ask similar questions and assemble a snapshot of current use, hesitancies, and challenges to general Internet access and telehealth.

A NOTE ON TELEHEALTH USE AND SAVINGS

We sit at something of a turning point in the delivery of health care in this country. No one who has experienced it - from the patient or provider side - doubts the capability of the additional tools, insight, and flexibility offered by the telehealth of today and tomorrow to drive a radical paradigm shift. If we manage that shift thoughtfully and boldly, healthcare a half-century from now will be powerfully predictive, more holistic, and more equitable by many orders of magnitude than it is today.

And yet, as some veteran researchers of healthcare in the United States have shown, much of the explosion of telehealth use during the pandemic seems to be receding (except for telemental health visits).20 Further, they say, some of the savings that we actually see from telehealth today comes from audio-only usage over phone, which is at least in part enabled by the comparatively lower reimbursement rates paid for such visits as compared to in-person appointments, or the fact that audio-only telehealth allows patients to expand the scope of their care statewide and make use of the lower rates offered by some providers because of geography or size.

Finally, some research suggests that telehealth initiatives don’t save money, but either cost the same as in-person care, or even more.21

Finally, researchers also argue that the tools of remote monitoring and instant access to physician care will mean that in the future we will spend more on the system when they are fully implemented, not less.22 A more pressing concern than broadband infrastructure to enable two-way video calling and remote monitoring, they argue, are obstructionist licensing laws and a lack of parity for reimbursement.

We acknowledge these existing challenges and likely realities, and agree that there is much to be learned, and proceed with a handful of things firmly in mind. First, we (along with many of the aforementioned experts) recognize that studies of telehealth utilization - which represented less than one percent of all health care delivery prior to the pandemic - have so far captured only the earliest adopters and a scale a fraction of the size it will be in another generation. Second, we are joined by many in believing that higher-touch, more individualized care will make for healthier populations and lead to less expensive healthcare for the chronic and acute conditions of today and in the long run. Third, scattered throughout this report are the outcomes of a wide array of clinic-
and hospital-led telehealth programs which are documenting significant savings today and over the last few years. As they have demonstrated, the avoided costs from telehealth programs depend heavily on a host of factors, from how the intervention is structured, to the target population and the stage of care at which their costs are being imputed, to the type of health plan, etc. Fourth and finally, broadband advocates have for years written and talked about all of the ways that Internet access is a super social determinant of health.

For example, enabling universal access to telehealth over robust broadband infrastructure will amplify the savings that come from better access to education, information, economic opportunities, and community connections. It also offers the potential to fundamentally reimagine health care delivery in the United States, replacing the current fee-for-service schema with one that maximizes real wellness outcomes. It is not a utopian dream to imagine that, when a trip to the emergency department can be avoided for the cost of having a nurse log into remote health monitoring devices to check his or her pulse and blood pressure, the cost of improving long-term, comprehensive wellness will dramatically change. But none of it can take place until we have universally accessible, robust, affordable infrastructure over which to deliver those services. Here we model the potential return on investment from telehealth interventions, but whether it’s telehealth, economic development, or education, one thing is certain: the comparative capital cost of broadband deployments is small, by comparison.