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**BEFORE THE SUBCOMMITTEE ON COMMUNICATIONS AND TECHNOLOGY
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COMMITTEE ON ENERGY AND COMMERCE**

“OVERSIGHT OF THE FEDERAL COMMUNICATIONS COMMISSION”

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Chairman Blackburn, Ranking Member Doyle, and distinguished Members of the Subcommittee, thank you for the invitation to testify this afternoon. It is a privilege to appear before you again.

I have had the honor of working with you and your staffs as a Commissioner for nearly a year. It has been a tremendously rewarding and productive time. I am proud of the work the agency has accomplished. And I want to commend the Subcommittee on its own notable achievements—from identifying additional spectrum for consumer use in the RAY BAUM’S Act and enhancing public safety through the SANDy Act to encouraging broadband deployment in unserved areas, including through the Precision Agriculture and Connectivity Act.

Over the past year, I have focused on the work the FCC can do to bring more broadband to more Americans. This has meant working with my colleagues at the Commission on the regulatory reforms needed to maintain the United States’ leadership in wireless as we transition to next-generation 5G technologies. This has meant working to remove barriers to the deployment of the wireline and wireless networks needed to support this transition. And this has meant spending time outside of D.C. to see firsthand how our policies impact communities across the country.

Over the past 11 months, I have had the chance to visit 17 states—from Massachusetts to California, from the Gulf Coast of Louisiana to the Great Plains of South Dakota. I have benefited from the diverse views and perspectives shared at these events, whether at a town hall in Chelsea, Michigan, a roundtable in Stanton, Nebraska, or on a tour of a manufacturing facility in Sioux City, Iowa. I have met with local officials about our common goal of promoting broadband deployment. I have sat at the kitchen table of a family that wanted better, faster, and more affordable broadband. And I have spent time with the construction crews that do the hard, often gritty work needed to bring more broadband to more Americans.

These experiences have stuck with me. In Arcadia, Indiana (pop. 1,653), Congresswoman Susan Brooks introduced me to two Hoosiers, Mark and Scott. They are brothers, and they run a small fixed wireless provider called On-Ramp Indiana. They are a one-stop shop dedicated to bringing broadband to the rural communities of central Indiana. As their story makes clear, it sometimes takes the modern-day version of duct tape and bailing wire to get the job done in these hard-to-serve communities. Mark and Scott set up a series of small antennas and radios that ultimately create 30 miles of line-of-sight links from Arcadia all the way to Indianapolis, where the data can be offloaded to a fiber network. Mark and Scott used what was available to them. As they drove from Indy through farm towns and open fields, they looked for any tall structure they could climb to attach the next link in their wireless chain. Barns and grain elevators are among their favorite structures because they’re often the tallest perch in town.

Mark and Scott's hard work helped bring broadband to Beck's Hybrids, a family-run farming operation in Arcadia that dates back to 1901. 78-year-old Sonny Beck said that broadband is essential to his operation. It allows him to combine gigabytes of data—from connected tractors and drones to online soil histories and DNA files on crops—and then analyze all of this information in the cloud where algorithms help Beck's and other farmers make precision adjustments to seeding and real-time modifications in soil treatments.

From little Arcadia to big city Philadelphia, broadband is giving families a chance to change their lives. Just a few weeks ago in Philly, I had the privilege of meeting someone who used her mobile broadband connection—and a whole bunch of grit and determination—to bring her family out of poverty and into a new life. Her name is Tommi. She's the mom to five kids, and there's no doubt that many people have had an easier path in life. Tommi grew up in public housing. She dropped out of high school after having her first child. For the next 16 years, she made calls for a debt collection agency, which she described as a "dead end job." Tommi knew that she could do more with her life. So she enrolled in Philadelphia's Orleans Technical College. It was "four years of peanut butter and jelly sandwiches—often made for me by my kids," she said.

Tommi earned a perfect 4.0 GPA. She got a job at the Public Housing Authority, and she just bought her first home. Now she's starting a master's program in mental health so that she can give back to her community. None of this, Tommi told me, would have been possible without a mobile broadband connection. "Broadband is the backbone of a community—for finding a job, for education," she said. A mobile hotspot that she shared with her neighbors let her finish her homework, which she had to complete online. A mobile connection enabled her to apply for jobs and for admission to school. And a mobile connection enabled Tommi to stay in touch with her kids when they spent time with her family.

Tommi is an inspiration. But in a lot of ways, Tommi's story is not unique. At the school in Philadelphia's Sharswood neighborhood where we met, I spoke with kids that are in much the same position Tommi was in just a few years ago. Today, the Public Housing Authority is partnering with a wireless carrier to give each student at that school a tablet and a mobile connection. The Public Housing Authority did this because digital literacy is no longer optional for the next generation.

This is why the work of this Subcommittee and the FCC is so important. As legislators and regulators, we can help ensure that every community—from Arcadia to Philadelphia—has a fair shot at the opportunity that broadband can enable. This is particularly important as we make the transition to next-generation networks, which can unleash a new cycle of innovation and entrepreneurship in the country. We do not want to see any community get left behind.

Indeed, one year ago, I talked about the challenge we faced in extending American leadership in wireless as we move from 4G to 5G networks. I testified about the need for the FCC to focus on two things: freeing up more spectrum and removing barriers to infrastructure deployment. The Commission has made substantial progress on both fronts.

On the spectrum side, the Commission has taken a number of concrete steps in the past few months alone. In February, we paved the way for opening up spectrum above 95 GHz. In March, we sought comment on designating the 4.9 GHz band for flexible use. In April, we made progress towards bringing over 1.5 GHz of millimeter wave spectrum to auction. In May, we started a proceeding to put spectrum in the 2.5 GHz band to even more productive use. In June, we finalized rules for the 24 GHz

band and sought comment on opening up the 26 GHz and 42 GHz bands for flexible use. Last month, Chairman Pai announced that we're moving forward with the auction of spectrum in the 37 GHz, 39 GHz, and 47 GHz. And at our July meeting, the Commission voted unanimously to begin the process of clearing up to 500 MHz of mid-band spectrum for 5G.

On the wireless infrastructure side, I appreciate that Chairman Pai asked me to lead the FCC's efforts. And we have already made significant progress in ensuring that our regulatory structures are 5G Ready.

As you know, 5G networks are going to look very different than the 3G and 4G deployments of the past. While hundred-foot towers accounted for the lion's share of prior deployments, up to 80% of new cell sites will be small cells with antennas no larger than a backpack plus associated equipment. But a year ago, our regulatory structures were threatening to hold us back—to limit 5G deployments to only the most profitable to serve areas. The problem was that our regulations assumed that every new cell site was a hundred-foot tower. So in the intervening months, we have worked with stakeholders to update and modernize our approach—to ensure the United States wins the race to 5G.

In March, for instance, we adopted an order that exempts small cells from certain federal historical and environmental review procedures that were designed for those large, hundred-foot towers. This decision extended the same regulatory treatment to small cells that the Commission has always applied to the deployment of other types of infrastructure, including Wi-Fi routers and consumer signal boosters. This one step is expected to cut about 30% of the total cost of deploying small cells. In fact, an Accenture study determined that our action could save \$1.56 billion, which could be used to deploy 55,000 new cell sites and create more than 17,000 jobs.

This reform alone could flip the business case for thousands of communities, particularly in rural and disadvantaged parts of the country. Almost no matter what we do, 5G and next-gen networks will be deployed in New York and San Francisco. But there are thousands of other communities that might lose out if we do not modernize our approach to broadband infrastructure. So the FCC is continuing to work with all stakeholders as we move to further update our approach to infrastructure deployment.

We know that broadband deployment can create jobs, but it can also save lives. I have seen it in places like Beatty, Nevada, where a rural health care clinic is staying open because a new broadband connection allows patients to visit virtually with a doctor located in a much larger town. I have seen it in Lennox, South Dakota, where a skilled nursing facility is using a broadband connection to provide quality care to patients in their own community, rather than transferring them to a larger facility located miles away. For years, the FCC has been playing a key role in supporting the deployment of broadband to these facilities through our Rural Health Care Program.

But there's a new trend in telehealth—a trend towards connected care everywhere. The delivery of high-tech, high-quality health care is no longer limited to the confines of connected, brick-and-mortar facilities. With remote patient monitoring and mobile health applications that can be accessed on a smartphone or tablet, we now have the technology to deliver high-quality care directly to patients, regardless of where they are located—places like the Mississippi Delta.

The Delta is ground zero for the country's diabetes epidemic. It sees diabetes at rates that are about twice the national average. Ruleville, Mississippi (pop. 3,234) is no exception to this trend. In

addition to having one of the highest rates of diabetes in the state, more than half of all children in this area live in poverty. That only adds to the challenge of finding and accessing affordable health care. But the Delta is also a place where remote patient monitoring technology is already making a difference.

And it's where I met Ms. Annie, a patient of the North Sunflower Medical Center. Ms. Annie noticed the first signs of her diabetes when she woke up one day with blurred vision. After seeing little progress in managing her diabetes with traditional care options, Ms. Annie signed up for a remote patient monitoring pilot program. She walked me through the iPad & blue-tooth enabled blood glucose monitors that patients use in their homes to track and control their own care on a daily basis. The tablet chimes every morning as a reminder. Ms. Annie then pricks her finger and her A1C level is displayed on screen. Based on that, the app suggests appropriate actions—from a particular food or exercise, to watching a relevant video. If she forgets to enter her numbers that day, she'll get a phone call from a nurse. With this technology, Ms. Annie's A1C levels have gone down and she says she's never felt better.

A few weeks earlier, at the University of Virginia's Children's Hospital, Dr. Karen Rheuban talked about the role that these new telehealth technologies are playing in saving lives. A connected tablet helps parents whose babies have heart problems. An app called Locus Health tracks a baby's weight, heart rate, and oxygen levels and sends the data to the hospital. The data provide early warning signs that can head off problems that might result in ICU stays and invasive procedures.

Finding ways to use remote patient monitoring technologies to manage chronic diseases, which account for over 85% of direct health care spending, is a challenge that merits our attention.

The relatively limited trials to date are showing significant cost savings:

- A remote patient monitoring program run by the Veterans Health Administration costs \$1,600 per patient—an 88% savings from VHA's home-based primary services.
- Another telehealth project found that every \$1 spent on remote monitoring resulted in a \$3.30 return in savings.
- The Mississippi Delta trial resulted in nearly \$700,000 in annual savings due to reductions in hospital readmissions alone, which, assuming just 20% of Mississippi's diabetic population enrolled in this program, Medicaid savings in the state would be \$189 million per year.

And these connected care technologies are improving health outcomes:

- A study of 20 remote patient monitoring trials found a 20% reduction in mortality and a 15% reduction in hospitalizations related to heart failure.
- The Veterans Health Administration's remote patient monitoring program resulted in a 25% reduction in days of inpatient care and a 19% reduction in hospital admission.
- Another remote patient monitoring initiative showed a 46% reduction in ER visits, a 53% reduction in hospital admissions, and a 25% shorter length of in-patient stay.

Given the significant cost savings and improved patient outcomes associated with connected care, we should align public policy in support of this movement in telehealth. At the FCC, we can play a constructive role by helping to support the connectivity and deployments needed to ensure that all communities get a fair shot at benefiting from new telehealth technologies.

So I am glad that Chairman Pai asked me to lead the FCC's new telehealth initiative, which we will consider at our August meeting. The Connected Care Pilot Program would aim provide up to \$100 million for connected care benefiting low-income patients, including those eligible for Medicaid and veterans. It would support a limited number of projects over a two- or three-year period with controls in place to measure and verify the benefits, costs, and savings associated with connected care. It could take the results we've already seen in the limited trials to date and help replicate those results in communities across the country.

From chronic disease management to pediatric cardiology, from PTSD to opioid dependency, this pilot has the potential to make a real difference for low-income individuals that currently lack access to quality health-care. I look forward to working with my colleagues at the FCC, federal and state partners that are active on these issues, Members of this Subcommittee, and all stakeholders as we seek comment on establishing the Connected Care Pilot Program.

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It has been an honor over the last year to work on connecting more Americans to opportunity and to each other. Chairman Blackburn, Ranking Member Doyle, and Members of the Subcommittee, thank you again for holding this hearing and for the invitation to testify. I welcome your questions.