Written Testimony of
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on
The Future of Broadband Affordability
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Chairwoman Cantwell, Ranking Member Cruz, Chair Lujan, Ranking Member Thune, and other members of the Subcommittee on Communications, Media, and Broadband, thank you for inviting me to testify in today's hearing, "The Future of Broadband Affordability."

My name is Blair Levin. I am the policy analyst with New Street Research, an equity research firm, a Senior Non-Residential Fellow at the Metropolitan Policy Project of the Brookings Institution. In 2009-2010 I led the team that wrote the United States National Broadband Plan. From 1993-1997 I served as Chief of Staff to FCC Chairman Reed Hundt. I am here speaking on behalf of myself, and my views are not intended to represent the views of any organization with which I am affiliated.

Today, I would like to explain why the ACP should be extended and then, as part of a larger Universal Service Fund reform effort, be maintained with whatever modifications Congress deems wise.

First, the cost of digital exclusion is already large and growing, with Artificial Intelligence (AI) certain to magnify the cost.

In 2010, the National Broadband Plan documented how the cost of digital exclusion was large and growing. In March of 2020, the United States, in an overwhelming bi-partisan manner saw and understood that cost and agreed that the cost was unacceptable. In 2021, Congress found that "Access to affordable, reliable, high-speed broadband is essential to full participation in modern life in the United States;" and that "(t)he persistent 'digital divide' in the United States is a barrier to the economic competitiveness of the United States and equitable distribution of essential public services, including health care and education." It then funded programs to close that divide.

The pandemic has largely ended but the shift to online delivery of essential services and need for connectivity to participate in the economy has not. And it will likely accelerate again. AI will not be as dramatic an evangelist for universal broadband as was COVID. It will not make the case in a single March weekend. Nonetheless, in the last part of this decade, we are going to discover that the cost of digital exclusion will be even greater than it was during COVID, as Artificial Intelligence magnifies those barriers and costs.[1]

In short, we already know the cost of disconnection is unacceptable and the cost will inevitably get much worse.

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[1] As Bill Gates noted in his 2024 letter, "we are 18–24 months away from significant levels of AI use by the general population." https://www.gatesnotes.com/The-Year-Ahead-2024

Second, despite that knowledge, our country is about to take the greatest step backwards any country has ever taken to widen, not close, the digital divide.

You all know the reason. Early this month, the Affordable Connectivity Program (ACP), which provides a monthly subsidy sufficient to purchase broadband for over 23 million households, nearly 60 million people, will run out of funds.

We can't know how many persons will be disconnected as a result.

But we do know 53% rural survey respondents and 47% of all respondents reported having either zero internet connectivity or relying solely on mobile internet service prior to receiving their ACP benefit.[2] Nearly 70% of survey respondents reported they had inconsistent connectivity or zero connectivity at all before ACP.[3] More than three-quarters of respondents say losing their ACP benefit would disrupt their service by making them change their plan or drop internet service entirely.[4]

So, the number of Americans disconnected from a permanent broadband connection if ACP disappears is likely to number in the tens of millions.

Third, the cost of that disconnection will be extraordinarily painful to individuals and families.

A recent study[5] showed that
- 65% of ACP participants fear that losing broadband would result in losing their job or their household's primary source of income;
- 75% fear losing access to health care; and
- 81% of ACP parents worry about their children falling behind in school.

I would hope that we could agree that government should act to alleviate, not exacerbate, such fears.

Fourth, that is not the only cost. Digital disconnection will also impose an immediate cost on our economy, shrinking economic growth.

A 2021 study showed that in areas where discount internet plans were available, there was a positive impact on employment rates and earnings of eligible households. With greater labor force participation and decreased probability of unemployment, low-income households saw a $2,200 annual earning boost from subsidized internet programs. As the study showed increased broadband affordability for low-income people leads to "increased employment rates and earnings of eligible individuals, driven by greater labor force participation and decreased probability of unemployment"—providing further savings to government unemployment insurance programs.[6]

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[2] https://www.fcc.gov/sites/default/files/Measuring-Impact-ACP-Survey-Fact-Sheet.pdf
[3] https://www.fcc.gov/sites/default/files/Measuring-Impact-ACP-Survey-Fact-Sheet.pdf
[4] https://www.fcc.gov/sites/default/files/Measuring-Impact-ACP-Survey-Fact-Sheet.pdf
[5] https://www.bsgco.com/acp-fact-sheet
[6] https://www.aeaweb.org/articles?id=10.1257/pol.20190648

Another study found that "every dollar of ACP subsidy returns nearly two dollars in impacts to those using the program" due to "employment effects that boost household income; and convenience effects, e.g., time saved from shopping online as well as having access to a greater variety (or quality) of goods."[7]

Further, a recent economics working paper estimated that for every dollar spent on the ACP, the nation's GDP increases by $3.89—nearly twice the multiplier of the far larger Broadband Equity Access and Deployment (BEAD) Program, which builds new digital infrastructure in unserved locations.[8]

Thus, it is no surprise that business groups overwhelmingly support the extension. Not only is an ACP extension endorsed by enterprises in the communications market but also by Chambers of Commerce across the country.

Fifth, and too often ignored, the loss of the ACP program will raise the cost of government provided health care services and diminish health care outcomes.

It should not be surprising that as a 2021 medical paper found that "Digital literacies and Internet connectivity have been called the 'super social determinants of health' because they address all other social determinants of health (SDOH). For example, applications for employment, housing, and other assistance programs, each of which influences an individual's health, are increasingly, and sometimes exclusively, accessible online. The costs of equipping a person to use the Internet are substantially lower than treating health conditions and the benefits are persistent and significant, making the efforts to improve digital literacy skills and access valuable tools to reduce disparities."[9]

But it is not just good for the patient; it is also good for the patient's insurance company. As the largest health care insurer, the federal government should want to take advantage of savings such as those seen in a recent study[10] finding the cost savings of using telehealth for patients with cancer ranged from $147 to $186 per visit, or the University of Pennsylvania study[11] showing that telemedicine was 23% less expensive than in-person visits. Similarly, a 2023 study[12] by the Department of Veterans Affairs found that "veterans who utilized a new tele-emergency service were nearly half as likely to visit an emergency department in-person and showed reduced short-term Veteran visits to emergency departments outside of VA."

Another area where telehealth can improve both costs and outcomes is with maternal mortality rates. The United States has alarming trend lines in this arena, with an increase of 60% in maternal mortality between 2019 and 2021.[13] At the behest of Congress, the Federal Communications Commission mapped where maternal mortality is highest—and the maps of

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[7] https://www.benton.org/publications/affordable-connectivity-program-benefits-outweigh-costs

[8] https://arxiv.org/ftp/arxiv/papers/2311/2311.02431.pdf

[9] https://www.nature.com/articles/s41746-021-00413-8

[10] https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2800164

[11] https://www.pennmedicine.org/news/news-releases/2023/june/employee-telemed-visits-25-percent-less-costly-for-health-system

[12] https://www.va.gov/ann-arbor-health-care/stories/new-research-telehealth-emergency-care-leads-to-decreased-emergency-department-visits-hospitalizations-reduced-health/#:~:text=Health%20Care%20Costs-,New%20Research:%20Telehealth%20Emergency%20Care%20Leads%20to%20Decreased%20Emergency%20Department,Hospitalizations%2C%20Reduced%20Health%20Care%20Costs

[13] https://healthcare.rti.org/insights/digital-health-maternal-outcomes

places where new mothers die at the highest rates look a lot like maps of where household internet subscription rates are low.[14]

Of course, there are many factors that influence maternal mortality, but it is worth noting that there are promising ways to address maternal mortality that rely on home broadband for new mothers. In Louisiana, Ochsner Health has had success in using digital tools to monitor at-home blood pressure and other risk factors for pregnant women, resulting in fewer hospital admissions and caesarean section procedures. Such remote maternity online monitoring has reduced unexpected neonatal intensive-care unit admissions by 27%.[15]

The healthcare benefits of using digital tools extend beyond maternal mortality. Telehealth is associated with people maintaining their participation in opioid treatment programs[16] and telehealth can reduce the cost of healthcare service delivery with only marginal increases in in-person visits.[17] Given the amount the United States spends on Medicare and Medicaid, universal, sustainable broadband should be seen as a huge opportunity to improve health outcomes while lowering costs.

In short, the end of ACP is likely to cause increased health care costs and worse health outcomes. Why would we want to do that?

Sixth, the loss of the ACP program will raise the cost of government and diminish its performance in other areas as well

One such area is job training. As noted above, access to broadband leads to "greater labor force participation and decreased probability of unemployment" in part because connections enable access to online job training courses that can be tailored to an individual's background, geography, and ambitions. This reduces the costs of our unemployment system.

A similar story involves job placement. In 2016, the Dallas Fed found that already 60-70% of job opportunities were posted online.[18] By now that number has no doubt increased. So, if we want to reduce the financial costs of our unemployment system, we need everyone online.

Education offers a similar picture. Students without home internet access have lower grades, complete homework less often and are less likely to attend college. They score about three points lower on a 64-point digital skills scale compared to those with home internet. There is also a significant "homework gap" with 64% of students with no home internet often leaving homework unfinished, compared to 17% with home access.[19]

The same story—reduced costs and improved performance—can be found for other social services. ACP creates benefits for social service suppliers. Greater certainty in at-home service

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[14] https://www.fcc.gov/reports-research/maps/connect2health/maternal-health-map.html?bbSel=Broadband+Access&mhSel=Maternal+Deaths&bbThresh=90.25&mhThresh=1&md=2
[15] https://www.ama-assn.org/practice-management/digital/how-digitally-enabled-care-can-improve-postpartum-outcomes
[16] https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2810828
[17] https://www.ajmc.com/view/economics-of-a-health-system-s-direct-to-consumer-telemedicine-for-its-employees
[18] https://www.dallasfed.org/-/media/Documents/cd/pubs/digitaldivide.pdf
[19] https://www.pewtrusts.org/en/research-and-analysis/articles/2020/12/08/what-covid-19-underscores-about-how-broadband-connectivity-affects-educational-attainment

for clients makes it more attractive to invest in solutions in health care and job training. The ACP is helping to create and is now part of an emerging innovation system where the value of investing in social solutions is greater due, in part, to more consistent connectivity for low-income people. The ACP has brought stability to the last mile of service delivery for these new solutions.

Seventh, the loss of the ACP program will particularly hurt rural areas and military families.

As a starting point, nearly half (49%) of rural households qualify for ACP compared with 40% of non-rural households. This gap largely results from more lower income households in rural parts of the country. Some 36% of rural households have annual incomes at or below 200% of the Federal poverty level compared to 28% for households in non-rural areas.[20]

Further, as noted above, more rural than non-rural residents reported having either zero internet connectivity or relying solely on mobile internet service prior to receiving their ACP benefit. [21]

The statistics I cited earlier on the benefits of telehealth are even more important to rural areas, as they are suffering from an epidemic of hospital closures, an epidemic that is likely to get much worse, making telehealth even more essential.[22]

But the biggest problem may be the impact of losing ACP on BEAD and rural broadband deployment. As the consulting group BCG found, ACP reduces the subsidy needed to incentivize providers to build in rural areas by 25% per household, writing "the existence of ACP, which subsidizes subscriber service fees up to $360 per year, reduces the per-household subsidy required to incentive ISP investment by $500, generating benefit for the government and increasing the market attractiveness for new entrants and incumbent providers."[23]

But of course, if ACP goes away, those savings will also go away and to put a fine point on it, it is a mathematical certainty that there will be communities in, for example, Texas that instead of getting fiber will end up with fixed wireless or even satellite.

As to military families, according to a White House study, they make up nearly half of the households that benefit from ACP.[24] The ACP provides veterans a cost-effective way to access Department of Veterans Affairs services, such as telemedicine, job training, and VA benefits.

Eight, every negative consequence that I have mentioned will be made worse, as AI becomes embedded in our economy and society.

I have no doubt that later this decade we will view the implications of AI similarly to how we saw the implications of Covid in how both vividly demonstrate the unacceptability of digital exclusion.

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[20] https://www.benton.org/blog/affordable-connectivity-program-and-rural-america#:~:text=15%25%20of%20all%20rural%20households,have%20enrolled%20in%20the%20benefit

[21] https://www.fcc.gov/sites/default/files/Measuring-Impact-ACP-Survey-Fact-Sheet.pdf

[22] https://www.beckershospitalreview.com/finance/states-with-the-most-rural-hospital-closures.html

[23] https://www.commonsensemedia.org/sites/default/files/research/report/2022-cs-bcg-closing-digital-divide_final-release-3-for-web.pdf

[24] https://www.whitehouse.gov/briefing-room/statements-releases/2024/02/06/fact-sheet-as-affordable-connectivity-program-hits-milestone-of-providing-affordable-high-speed-internet-to-23-million-households-nationwide-biden-harris-administration-calls-on-congress-t/

Whether we are discussing the skill sets needed, the jobs we need to fill, education[25] and health care[26] trends in artificial intelligence will exacerbate the negative consequences of any remaining digital divide. And those consequences in turn will make the United States less competitive as AI defines the new parameters of competition.

But I would urge you to consider not just the downside but also the upside in terms of the problems we can address if we have both universal adoption and artificial intelligence.

For example, our young people remain behind in reading, a deficit that if not corrected, will cost our country billions in years to come due to such things as lost economic productivity[27] and increases in crime.[28] Recent data demonstrates that just 32% of fourth graders read at or above a fourth-grade level.[29]

We can, and we must, fix that. With the tools of technology, particularly AI,[30] we should make sure no future generations fall behind.[31] As Bill Gates noted in his most recent letter, AI can bring personalized tutors to every student. "The AI education tools being piloted today are mind-blowing because they are tailored to each individual learner. Some… are already remarkable, and they'll only get better in the years ahead."[32] We should make sure that no one is denied full use of these "mind-blowing" technologies, particularly those students who need it the most.

Ninth, the administrative cost of shutting down and starting up again is high.

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[25] https://www.govtech.com/education/will-ai-in-schools-widen-the-digital-divide?utm_source=sendgrid&utm_medium=email&utm_campaign=Newsletters

[26] https://a16z.com/how-to-democratize-healthcare-ai-gives-everyone-the-very-best-doctor/

[27] A 2020 study evaluating literacy and numeracy in OECD countries found that many adults with low literacy can find jobs, but that higher literacy and skill levels give workers more opportunities for career and income growth. Cherry, G., & Vignoles, A. (2020). What is the economic value of literacy and numeracy? *IZA World of Labor* 229 https://doi.org/10.15185/izawol.229.v2   Similarly, Research indicates that education quality – measured by test scores in international student surveys – predicts economic growth. https://www.tandfonline.com/doi/full/10.1080/13504851.2023.2168604. For example, the study cited above concludes "test scores appear to be a good measure of both cognitive and non-cognitive skills of importance for growth."

[28] The data is clear that there is "a strong connection between early low literacy skills and our country's exploding incarceration rates." https://www.literacymidsouth.org/news/the-relationship-between-incarceration-and-low-literacy.

[29] In 2022, the percentage of fourth-grade public school students performing at or above the NAEP Proficient level in reading was 32% nationally. https://www.nationsreportcard.gov/reading/states/achievement/?grade=4.

[30] There are numerous AI programs that claim to assist young people improve their reading skills. A small sample includes:
- Khanmigo. The Khan Academy AI tutor.
- Amira. An AI-powered reading tutor that provides personalized help for struggling readers. Amira listens to students read out loud, assesses their reading, and provides feedback and support when they struggle.
- Giffie. An AI-powered reading tutor that helps kids practice by chatting with them, helping them pronounce words, and read sentences.
- Ello. An AI reading coach that supports parents in creating the best learning environment for their child.

[31] Research shows that certain interventions—such as frequent, small group tutoring and extra learning time on school breaks—can produce significant gains. AI provides a tutor equivalent for families that cannot afford tutors, who make up a significant portion of the families with underperforming readers.

[32] https://www.gatesnotes.com/The-Year-Ahead-2024

The federal government spent tens of millions to start up the program, as did the states, community groups and the Internet Service Providers (ISPs.) This includes $66 million in outreach grants to nonprofits, state, and local government, and others to assist in the sign-up process, a process that would have to be repeated if the program were to end and then in the future be brought back.

To shut down will create massive confusion, a loss of trust, and other costs that are hard to pinpoint in terms of exact dollars.

And there are certain elements of the program, such as having a national verifier, that cannot be duplicated easily in a world of voluntary ISP programs.

And we can project that the biggest waste this program could have would be shutting it down now and then restarting in the future. For if there is one thing we should all be certain of it is that we will have to do this in the future, as connectivity becomes even more important for participating in the economy and society.

In summary, losing the ACP will result in slower economic growth, increases in the cost of healthcare, education, job training and placement, and other social services, while decreasing the effectiveness of those services.

Those trends are going to be felt even more in rural areas and in military families. And those trends will be exacerbated as AI becomes embedded in our economy and society.

Let us not take the greatest step backwards any country has ever taken in terms of closing the digital divide.

Let's adopt a clean ACP extension and then work hard to reform the entire Universal Service Program to put it on a sustainable basis.[33] Let's grab the opportunity broadband creates to improve our economy, our society, and our future by making sure, as Congress wrote, that all Americans have the broadband access they need to fully participate in the economy and the society

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[33] In this regard, I am in complete agreement with the 20 House Republicans who wrote to Speaker Johnson last month asking for action on ACP, writing that "We believe that bipartisan solutions are within reach to ensure uninterrupted access to the ACP while concurrently pursuing long-term funding strategies." https://brandonwilliams.house.gov/news/documentsingle.aspx?DocumentID=1787