

REIMAGINING LIFELINE: Universal Service, Affordability, and Connectivity

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Broadband Delivers Opportunities
and Strengthens Communities

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Executive Summary

Prior to the pandemic, the Federal Communications Commission’s Lifeline program supported mainly wireless communication services for low-income households; its \$9.25/month subsidy resulting in service plans that restricted voice and data usage. To address Americans’ online connectivity needs during the pandemic, Congress directed the FCC to launch the Emergency Broadband Benefit (EBB) program—a historic expansion of financial support for universal service.

The Affordable Connectivity Program represents an inflection point for Lifeline and universal service.

With the passage of the Infrastructure Investment and Jobs Act, EBB has transitioned to a longer-term Affordable Connectivity Program, a \$30-per-month service subsidy for qualifying households. The Affordable Connectivity Program’s \$30-per-month subsidy offers the opportunity to take a fresh look at policies to promote online access for low-income people in the United States.

The Affordable Connectivity Program is a marked change in mindset about universal service, the principle that all Americans should have affordable access to essential communications services. Lifeline has experienced budget austerity and operational challenges for over a decade, which may hinder the success of the Affordable Connectivity Program. Burdensome enrollment processes and minimum service standards have, in recent years, served to discourage Lifeline enrollment—an impulse driven in part by a flawed program-funding mechanism. The Affordable Connectivity Program represents a departure from Lifeline’s funding mechanism with the goal to maximize enrollment of eligible households—a different emphasis than in the recent past.

This report:

- examines data about the tools typical American households have for accessing the internet and how affordable they are, and
- explores the administrative journey of Lifeline, which is all the more significant because the Universal Service Administrative Company, which administers the Lifeline program, will also administer the Affordable Connectivity Program.

Based on this research, this report finds that:

In the United States, the new connectivity norm is both wireline and wireless, with the devices needed to make use of these broadband services.

- For households whose annual incomes are \$50,000 or more, 75 percent have both a wireless data plan and a wireline broadband subscription. For low-income households (those whose incomes are below \$25,000 annually), just 36 percent have a wireless data plan and a home wireline broadband subscription. Put differently, 60 percent of U.S. households (i.e., those whose annual incomes exceed \$50,000) are highly likely to have both access tools. [Section 254](#) of the Telecommunications Act states that services “are supported by Federal universal service support mechanisms” if they “have, through the operation of market choices by

consumers, been subscribed to by a substantial majority of residential customers.” For most U.S. households, subscriptions to a cellular data plan and a wireline broadband subscription are the norm.

- There are also stark differences in computer ownership across income categories. Just 58.7 percent of low-income households have either a desktop, laptop, or tablet computer, compared with 92.9 percent of households whose incomes are greater than \$50,000 annually.

Low-income households are spending too much on connectivity.

- The government’s Consumer Expenditure (CE) surveys find that low-income households pay 3 percent or more of their gross monthly income on wireless telephone service. Although spending varies by income category, this comes to about \$45 per month. Survey data shows that, when asked to identify a monthly cost figure for internet that would suit their monthly budgets, low-income consumers’ perspectives on affordability of service vary. Some 40 percent of households with annual incomes of \$50,000 or less stated that a free internet service plan would align with their needs. Another 22 percent cited a figure in the \$25-per-month range.
- Survey data also shows that half of low-income households with service are “subscription vulnerable,” i.e., their broadband bills are a strain on their budgets and they are subject to service interruption in hard economic times. For both disconnected and connected low-income households, the Affordable Connectivity Program’s \$30 subsidy would make internet service more affordable.

Lifeline has survived “managed decline.”

- When talking with Lifeline service providers and people in the public-interest community, the phrase “death by a thousand cuts” emerges repeatedly to describe the federal government’s posture toward the program’s administration. Implementation of the National Verifier unfolded slowly, which made it difficult to enroll qualified beneficiaries. The National Verifier, by linking disparate government databases that contain benefit information on individuals, was designed to make it easy to determine whether applicants qualified for Lifeline.
- Some Lifeline carriers have expressed to the FCC that audit requirements are burdensome and inhibit service provision. Although improving accountability is reasonable, some program changes seem aimed at suppressing provision of Lifeline benefits.
- Raising minimum service standards—such as conditioning reimbursement on uneconomical levels of data service—can limit Lifeline service offerings for consumers.

The new Affordable Connectivity Program, coupled with Lifeline, has the potential to deliver more equitable connectivity solutions to low-income households.

This report recommends that:

- The standard for universal service support in the United States should be a fixed broadband subscription and a cellular data plan that meets connectivity needs outside the home.
- The Affordable Connectivity Program should foster home wireline broadband connectivity. An increase in the Lifeline subsidy to \$20 per month can position that program to better address wireless mobile needs for eligible low-income households.
- Operationally, policymakers should take steps to facilitate Affordable Connectivity Program enrollment, which includes ensuring that the National Verifier links to all appropriate databases to improve the enrollment process for beneficiaries. In addition, funding is critical for outreach in communities with high proportions of eligible households.

Introduction

Rarely is the term “universal service” invoked without strategic intent. In its original usage, “one policy, one system, universal service” sought to justify monopoly in the telephone industry. Eventually, the concept represented a social compact by which regulated monopolies would keep service available and affordable to households. As early as 1904, Alexander Graham Bell forecast a day when “the poorest man cannot afford to be without a telephone” at a time when monthly telephone service in New York City cost about half the average worker’s income.¹

The goal of universal service is to ensure that essential communications services are available and affordable for all.

Today, “universal service” is malleable in policy discussions, used to support investments in rural networks as well as subsidies to help low-income households pay for service and to connect schools, libraries, and rural health care facilities. Equity remains a bedrock principle: the notion that society should take steps to ensure that all (or nearly all) citizens can use communications networks. However, whereas it was once fairly easy to identify the goal—widespread adoption of telephone service—today the situation is not as clear. Should, for instance, “universal service” include internet access? If so, at what level of service? If internet access is part of universal service, should there be support for computing devices to access digital networks?

In the United States today, nearly all households have telephone service. But inequalities become clear when looking at internet access by income. At the upper end of income distribution, it is the norm to have multiple pathways to accessing the internet. The 2019 American Community Survey shows that three-quarters (75 percent) of households whose annual incomes exceed \$50,000 have both a wireline broadband subscription and a cellular data plan.² For low-income Americans, the story is very different. Just over one-third (36 percent) of households whose incomes are \$25,000 per year or less have both wireline and cellular data plan subscriptions. For households whose annual incomes are between \$25,000 and \$50,000, 52 percent have both wireline and cellular data plan subscriptions.

These gaps have social and economic consequences. Many key applications are designed with the sophisticated user in mind, on the assumption that these early adopters represent revenue opportunities and can provide valuable feedback on early releases. Early versions rapidly become “designed in” for everyone. Telehealth sessions, relying as they do on two-way video, work better on fast wireline connections with no effective data cap. Messages on mobile devices offer effective follow-up communications on health care issues. Both are necessary for navigating the health care system. Yesterday’s massively open online courses (MOOCs) that distribute educational content to home computers become today’s “Zoom schools” for K-12 learning that rely on students having access to large screens for learning. School officials often assume that text messages are the best means to deliver notifications to parents—which, of course, requires the parents to have a mobile device. Participating in a child’s remote learning works best when the household has multiple modes of connectivity.

For these reasons, this report defines equity as what the norm is for most middle- or upper-middle-income households—that is, having both a wireline broadband subscription and a cellular data plan. The government program to aid low-income households with connectivity—the Lifeline program—has at best slowly adapted to citizens’ evolving needs.

The Role of Lifeline

The Federal Communications Commission's Lifeline program offers discount telephone service and for generations has been the foothold for communications connectivity for low-income Americans. Since its inception in 1985, Americans unable to afford telephone service have been able to turn to Lifeline for financial relief on their phone bills. The Telecommunications Act of 1996 enshrined into statute the idea that the program



would evolve with changes in technology and the market. The law, in effect, was a negotiated bargain between the public and private sectors: In exchange for light-touch regulation and a reliance on competition, whose benefits would include more choice and innovation in service offerings for consumers, industry and government would work to widely disseminate the benefits of a vibrant telecommunications market, both geographically and demographically.

Access to affordable, reliable, high-speed broadband is essential to full participation in modern life in the United States, but the Lifeline program does not meet people's fixed and mobile connectivity needs.

Over time, this compact has frayed. Two forces have strained its fabric:

- **Funding:** The well-documented and unsustainable math of financing universal service programs through a levy on a service (interstate, long-distance telecommunications) that has been steadily declining in revenues.
- **Oversubscription:** The period in the mid-2000s when program participation ballooned in the face of some companies and consumers signing up for multiple wireless service plans, when only one Lifeline benefit per household was allowed.

Over the past decade, these dynamics have meant that most of the energy devoted to the Lifeline program went into improving its administrative apparatus and limiting participation. As a result, the animating question for federal policymakers thinking about universal service was: *What can be done to limit Lifeline expenditures in the face of sharp increases in participation (perhaps not all of it justifiable) and an unsustainable funding mechanism?*

The pandemic has ushered in a new era. The urgency of closing connectivity gaps in the United States inspired the Emergency Broadband Benefit program, which was created with bipartisan support. This, in turn, has changed how policymakers are framing universal service. Through the EBB, Congress sought to benefit not just poor Americans but also those who lost service due to the pandemic's economic slump

and whose incomes may not put them at or near the poverty level. EBB's successor program, the Affordable Connectivity Program, sets its eligibility criteria at 200 percent of the federal poverty level, which is about \$52,000 for a family of four.

All this has changed the animating question for federal policymakers thinking about universal service: *How can government funds ease the financial burdens of connectivity for low- and lower-middle-income households?*

The EBB and Affordable Connectivity Program represent an inflection point for Lifeline and universal service. A decade of an austerity mindset in Lifeline has given way to more abundant funding whose aim is to make broadband affordable to a wider range of people in the United States than ever before.

Realizing this vision means addressing two questions:

- What do we know about what is affordable for today's Lifeline customers?
- Can the market for low-cost connectivity meet expanding needs?

Universal Service and Lifeline

The telephone industry's market structure for years served the goal of affordable service for all Americans, no matter where they lived. AT&T's monopoly and "rate averaging" across geography kept local service prices low enough to encourage subscribership throughout the country, including rural areas that were more expensive to serve. With local and long-distance service provided by the same company, high long-distance rates could aid in keeping rates affordable in urban areas.³

With the breakup of AT&T in 1984, geographic rate averaging and shifting rate burdens from long distance to local service was no longer possible. Into the breach for low-income consumers stepped the Lifeline program, created in 1984 under President Ronald Reagan to ensure telephone affordability. The [Telecommunications Act of 1996](#) added a new dimension to Lifeline: Universal service was defined as "an evolving level of telecommunications services that the [Federal Communications] Commission shall establish periodically" taking into account which services:

- are essential to education, public health, or public safety;
- have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers;
- are being deployed in public telecommunications networks by telecommunications carriers; and
- are consistent with the public interest, convenience, and necessity.

The other, perhaps obvious, feature of universal service is that the private sector has always been the means by which it is delivered—but with constraints. In the era of monopoly, regulation made sure local telephone prices were affordable. That was essentially a negotiated solution between government and industry. After the AT&T breakup and the passage of the Telecommunications Act of 1996, a fee on all interstate revenues has funded the Universal Service Fund—which provides subsidies through programs for harder-to-serve rural consumers (called high-cost funds), low-income ones (Lifeline), schools and libraries (E-rate), and rural health care organizations (Rural Health Care Program)—with the assumption that innovation and competition would offset whatever burdens the fee might impose.

A. The wireless disruption

Wireless telephone service set off changes in the Lifeline market as the 2000s dawned. By 2003, 3 percent of all households had cut the landline cord, a figure that jumped to 12 percent by the end of 2006. Low-income Americans were about twice as likely to do this. This upended the Lifeline market—first on the supply side and then among consumers. During President George W. Bush's first term, the FCC allowed Lifeline subsidies to be used for wireless telephone service. This change, entirely consistent with the evolving nature of universal service, invited new service providers into the Lifeline market. Wireless carriers offered Lifeline-eligible service, and consumers flocked to them in no small part because the carriers could offer service (and cell phones) at no cost to program

participants. Participation in Lifeline **increased** from 6 million customers in 2008 to 18 million in 2012.

The growth in Lifeline had significant problems. Some carriers aggressively marketed service in anticipation of compensation from the federal government. Some **consumers not eligible** for service nonetheless subscribed to Lifeline plans, abrogating the one-person-per-household rule for Lifeline subscriptions. As the Government Accountability Office (GAO) estimated in 2017, it was not possible to confirm that **36 percent of Lifeline** beneficiaries were eligible for the benefit, and possibly \$1.2 billion in expenditures went to people who were either dead or clearly ineligible.

B. The funding mechanism

Growth of the Lifeline market also coincided with challenges to the funding mechanism. Since its creation, the Universal Service Fund's revenues have come from a levy on interstate telecommunication's revenues. As early as 2003, elected officials expressed alarm at the growth in the demands placed on the Universal Service Fund—from \$1 billion in 1996 to \$6.3 billion in 2003—in conjunction with a drop in interstate telecommunications revenues (from \$20 billion a quarter in 1996 to \$17 billion in 2003).⁴ To meet rising demands, the contribution rate had to increase (on a declining base of revenues). The contribution rate on interstate services rose from 3.9 percent in 1998 to 9.2 percent in 2003, prompting Senator Conrad Burns (R-MT) to state that the Universal Service Fund faced "**grave and immediate danger.**" At the same time, in conveying the benefits of universal telephone connectivity, Senator Byron Dorgan (D-ND) said that the "fact that there is a telephone in Regent, North Dakota, my little hometown, makes Donald Trump's telephone more valuable."

Today the contribution factor is **25.2 percent on \$9.2 billion** in projected interstate revenues for the first quarter of 2022. In 2019, the Universal Service Fund had an **\$8 billion budget**, with \$5 billion going to the high-cost funds, \$2 billion to E-rate, \$981 million to Lifeline, and \$250 million to the Rural Health Care Program.

The growing demands on the Universal Service Fund and a shrinking contribution base for the Universal Service Fund created strong incentives to shrink the size of the Lifeline program. The initial efforts focused on reducing the number of households who had been subscribing to Lifeline who were not in fact eligible for the benefit.

Lifeline in the 2010s: Reform and Reconsideration

In 2012, the FCC released a [Lifeline Reform order](#) that sought to both modernize the program to include broadband and “constrain the growth of the program in order to reduce the burden on all who contribute to the Universal Service Fund.” The 2012 order codified the “one subscriber per household” rule and improved processes for verifying consumer eligibility while increasing protections against carriers being reimbursed multiple times for the same customer. As the FCC’s order said, the goal of the reforms was “to ensure that qualifying low-income consumers can access the voice and broadband networks of this nation to fulfill Congress’ goal of providing universal service, and the Commission’s goal of modernizing the program, while safeguarding it from waste, fraud, and abuse and constraining the growth of the [Universal Service] Fund to make it more efficient and effective to better serve consumers.” With these reforms, [spending](#) on Lifeline fell by 23 percent from 2012 to 2014.

Subsequently, the FCC took additional steps aimed at making Lifeline more “broadband friendly” for consumers while improving customer verification and encouraging new service providers to participate in the Lifeline market. The FCC’s [2016 Lifeline and Link Up Reform and Modernization order](#) set minimum service standards for supported voice and broadband services, established a third-party verification system for customers, and tried (unsuccessfully) to make it easier for firms to qualify as eligible telecommunications carriers (ETCs), a regulatory status needed in order to be eligible to receive support from the Universal Service Fund.

As these programmatic and marketplace changes unfolded, the Lifeline program received sustained and skeptical attention among some in the policy research community that essentially argued for a reconsideration of the program’s underlying rationale. The basic thrust of the critiques fell into two categories:

- 1) Those signing up for Lifeline would have [phone service even if they did not](#) have the cost relief from the Lifeline program.
- 2) Those Lifeline subscribers who would not have telephone service absent Lifeline are very [expensive to serve](#), raising concerns about the efficiency of the program.

For some [policy analysts](#) studying the program, it was no longer important to worry about affordability for all consumers who met eligibility criteria—just the subset who would not have telephone service but for the Lifeline program. At least one [analysis](#) called that proposition into question, noting that taking away the Lifeline benefit from households that may manage to keep service means that such households might forgo other household necessities. Yet the line of argument that many Lifeline customers would find a way to procure service held sway in some quarters.

The 2016 Lifeline and Link Up Reform and Modernization order adopted this view on Lifeline. In the order, the FCC stated that it does “not interpret and implement the concept of ‘affordability’ under sections 254(b)(1) and 254(i) by looking narrowly at whether and when a customer would

not purchase a service at all but for discounts made possible, directly or indirectly, by universal service support.” Even though affordability is a “central touchstone” of Lifeline, the program’s resources should focus on “supporting those services that are otherwise unaffordable to consumers, but for the Lifeline discount.” Caught between consumer need and ever rising contribution factors for supporting the program’s budget, the FCC responded to the reality of limits on the program’s funding base.

One move was to establish a budgetary cap for Lifeline. Proposed by FCC Chairman Tom Wheeler, the initial cap was set at \$2.25 billion annually (indexed to inflation). Under the Wheeler reforms, the FCC was to be notified if expenditures reached 90 percent of the budget cap. Unsurprisingly, this led to arguments over the size of the budget cap, with Ajit Pai, when he became FCC chair, [proposing](#) (but not specifying) a lower budget.

All of this built the foundation to further shrink the program, using several features of the program as leverage to make it harder for the Lifeline market to function.

A. Minimum service standards

The Wheeler FCC first instituted minimum service standards to set a benchmark for services that would be eligible for Lifeline’s \$9.25-per-month subsidy. These included 500 minutes for mobile voice (now 1,000 minutes), a wireline speed standard that, in 2016, was set at 10 megabits per second (Mbps) download and 1 Mbps upload for broadband, and a phased-in mobile broadband data allotment that started at 500 megabits per month in 2016 and increased to 2 gigabits per month in 2018. The 2016 order also decreased the amount of support for voice-only over time to \$5.25 per month by December 1, 2018, and nothing after December 1, 2021 (which did not go into effect).

The very idea of minimum service standards is an administrative balancing act. Such standards should establish a benchmark that provides beneficiaries voice and data services that meet modern communications needs (and that are consistent with how Congress defined universal service). At

the same time, the standards cannot be too generous. If they are, the cost of providing services that meet such standards may discourage companies from participating in the Lifeline marketplace. Minimum service standards have an inherent potential for frustration. No (or low) standards may mean bad service for beneficiaries. Standards that are too high may wind up reducing the availability of service (given existing subsidy levels) or result in plans that are too expensive for participating households to afford. The standard that is “just right” is both subjective and evolving—and thus ripe for game-playing by policymakers.



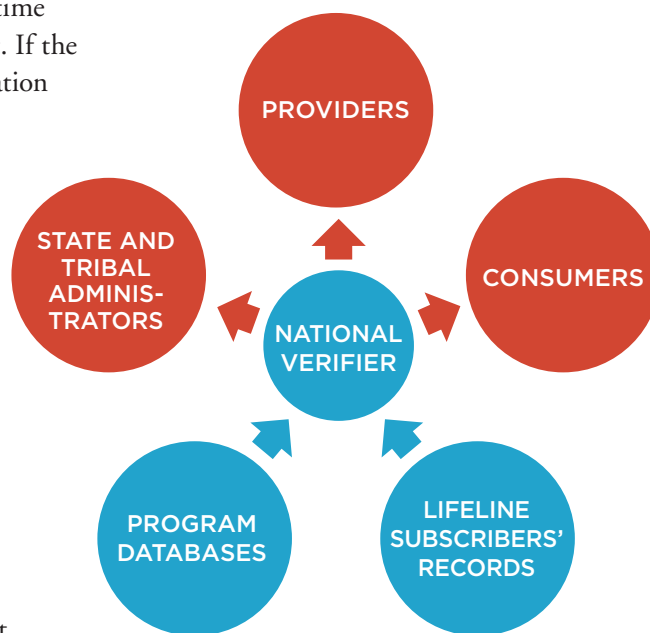
Republican FCC commissioners, namely Ajit Pai, saw this and immediately seized on minimum service standards, which would have the effect of limiting participation in the Lifeline market. The technique was to [raise standards](#) while keeping the subsidy the same. They proposed limiting Lifeline’s \$9.25-per-month subsidy to services that met the FCC’s threshold speed for broadband: 25 Mbps, a service combination either impossible for the market to provide or requiring a significant (and likely unaffordable) co-pay from Lifeline-eligible households.

Subsequent [FCC action](#) called for an increase in the minimum service standard for data that also had the potential to discourage provider participation in Lifeline. FCC Chairman Pai, in 2020, issued an order requiring Lifeline’s mobile carriers to provide 4.5 GB of data per month, up from the 3 GB standard prior to that. With, according to [industry sources](#), 4.5 GB plans priced at between \$25 and \$40 per month, a co-pay would be necessary for Lifeline customers for such plans (assuming no change in the \$9.25-per-month subsidy). Given that [78 percent of Lifeline](#) customers say they cannot afford any co-pay more than \$10 per month and [68 percent could not afford](#) any co-payments for Lifeline service, the proposal threatened participation in the program.

B. Verification of eligibility

Verification of household eligibility for Lifeline has developed into a barrier to program participation. The Lifeline National Eligibility Verifier (National Verifier) for Lifeline eligibility was an outgrowth of the FCC’s 2016 Lifeline and Link Up Reform and Modernization order. The National Verifier’s goal was simple: Reduce the potential for fraud by developing a database that could determine in real time whether an applicant was eligible for the benefit or not. If the database were linked to state databases whose participation confirms Lifeline eligibility (such as the Supplemental Nutrition Assistance Program or Medicaid), a Lifeline provider could determine on the spot if an applicant should receive the Lifeline benefit.

As a practical matter, the rollout of the verifier helped [stymie enrollment](#), not facilitate it. The National Verifier initially launched in a handful of states and, importantly, did not have access to all the databases that would help determine eligibility. This resulted in applicants being rejected when they were perhaps eligible. Those determined to be ineligible then had to get appropriate documentation and return to an enrollment site a second time. This is not a trivial burden for Lifeline’s target population; it can and does act to reduce subscribership. In Mississippi and Wyoming, where the verifier system rolled out in 2018, Lifeline participation dropped by [one-third](#). The focus on accountability, in this context, served as a barrier to participation.



Today, the verifier is widely available, but it still does not have access to a wide-enough scope of databases to make it [truly useful](#) for facilitating enrollment in Lifeline or the Affordable Connectivity Program. Fewer than [half of all states](#) list the Supplemental Nutrition Assistance Program on their list of automated data sources to determine eligibility. There have also been issues in [matching data](#) from service providers to the data found in government databases; many potential beneficiaries have been rejected because their street address is not exactly the same in internet service provider and government databases. When an applicant does not qualify using the verifier and has to undergo manual review of their application, [two-thirds](#) do not complete their application.

C. Limiting participation in the market and raising supplier costs

On the supply side, FCC Chairman Pai sought to either reduce the number of companies offering Lifeline-supported services or raise their cost of doing business. One of Pai's first actions was to rescind the approvals for nine companies to be broadband Lifeline service providers. Pai also

The growing demands for Lifeline services and a shrinking contribution base for the Universal Service Fund created strong incentives to shrink the size of the Lifeline market.

sought to require that all Lifeline companies be facilities-based carriers, which would have removed from the market wireless carriers that did not own wired or wireless infrastructure. Because **70 percent of Lifeline** customers have service from resellers, the action would have vastly reduced participation in the program. It is also worth noting that this took place at a time when many facilities-based carriers were ending their participation in Lifeline. The proposal to rescind the approvals for nine companies was widely **criticized** and never implemented, but the message was clear that the Pai FCC had little interest in making the provision of Lifeline service economically viable for companies.

The FCC also, according to interviews with Lifeline companies, imposed burdensome auditing requirements on Lifeline providers. The requirement that the Universal Service Administrative Company (USAC) ensure that carriers submit audits is an outgrowth of the 2012 Lifeline reform order and, on its face, is not objectionable. (**USAC** is a nonprofit that the FCC has designated to administer the Universal Service Fund). Yet there is a clear sense in the industry that the audits might be onerous, as reflected in a 2019 petition by broadband providers for a one-time waiver in the biennial audit requirement—a petition that the FCC **denied**.

Between rising minimum service standards and increasing audit compliance costs, Lifeline providers have had to curtail investments in marketing. In places with generous Lifeline support, such as tribal areas, companies have the resources to open retail stores or engage in face-to-face marketing at community events to appeal to qualified customers. Purely online marketing—to which some carriers have had to retreat—is far from ideal for a customer base that is not internet savvy, if connected at all.

The upshot of these attacks on the program's legitimacy has been to make Lifeline a **kludgy** program. And although program reforms were unquestionably needed, efforts to eliminate all possible sources of inefficiency turned a focus on accountability into a barrier to having access to the benefit. Imposing high administrative burdens as a covert attack on programs is not an uncommon phenomenon.⁵ By the end of the 2010s, it had extended to Lifeline.

The Lifeline Market Today

The preceding decade saw the Lifeline program undergo needed reform as well as well-documented efforts to control its budget. Concerns over levels of Lifeline enrollment and accompanying reforms changed the Lifeline market. Potential beneficiaries had a choice of fewer service plans that might meet their needs, e.g., plans whose monthly cost was low enough to be covered by most or all of the \$9.25-per-month subsidy. The number of [Lifeline subscribers fell](#) from 18 million in 2012 to under 12 million in 2016. The ensuing four years saw further decreases in Lifeline participation, driven by administration changes that resulted in making signing up for the benefit more [burdensome](#) for potential beneficiaries. By 2021, [6.5 million households](#) subscribed to the Lifeline program. Given a pool of 33.2 million households that qualify for the benefit, that is a participation rate of just 20 percent.

In this context, the [2021 FCC Lifeline Marketplace](#) report essentially asked the following question: Are minimum service standards and the current \$9.25 benefit level suppressing Lifeline enrollment or not? The decline over time in Lifeline participation – outside of states that supplement the \$9.25 subsidy with their own funds – indicates that the federal \$9.25 level may inhibit enrollment. The FCC also found little concern with respect to the impact of minimum service standards, although it rightly points out the need for better data to fully answer the question. The Lifeline Marketplace report found that 93 percent of Lifeline customers used less than 3 GB of data per month (below the 4.5 GB minimum service standard) and 85 percent use fewer than 500 minutes of voice per month. These figures diverge from findings from a 2021 National Lifeline Association (NaLA) survey of Lifeline customers. That [survey](#) finds that 75 percent of users say they need 1,000 minutes or more per month for voice. And 55 percent of Lifeline users in the NaLA survey say they need more than 10 GB of data per month, with 44 percent saying they need more than 20 GB. This gap – between data thresholds on people’s plans and their actual use – may be due to how the presence of limits influences behavior. Those of us with unlimited cell phone minutes think nothing of how much we use. However, knowing that there is a cap causes many low-income individuals to economize on use – meaning their monthly usage of minutes or data may be quite low.

As to whether service innovation (and subsequent price decreases) had helped on cost of service, the FCC noted a 14 percent decline in mobile service prices between 2016 and 2021. How much that helped Lifeline service provision is unclear, as is whether consolidation in the wireless industry (i.e., the merger of T-Mobile and Sprint) will limit future price effects.

Another way to think about the role of wireless innovation (and its downward pressure on prices) and Lifeline is to compare funds available to support universal service and changes in wireless prices. Capping or reducing Lifeline expenditures might make sense in the presence of the falling cost of providing service. Cheaper wireless plans require less public support.

The data shows that, while wireless service fell in price from 2011 to 2021, the revenue on [interstate telecommunications services](#) fell at a greater rate. Interstate telecommunications revenues declined by 41.6 percent over this time interval, while wireless prices fell 20.2 percent.

Table 1: Interstate Telecommunications Revenue and Wireless Prices

	Interstate telecommunications revenues (in billions) inflation adjusted	Wireless telephone services in U.S. city average, all urban consumers (benchmark price is 100 in 1997)
2011	\$ 16.67	\$ 60.57
2012	16.27	59.92
2013	16.19	59.36
2014	15.92	58.14
2015	15.29	55.61
2016	14.74	55.85
2017	13.68	53.44
2018	12.57	47.97
2019	12.07	46.47
2020	11.00	46.40
2021	9.73	48.31

Although the price effects of innovation in wireless helped consumers in the past decade, revenues available to support the Universal Service Fund programs, including Lifeline, declined at twice the rate. Besides underscoring the flaw in using long-distance revenues to fund USF programs, the industry trends also demonstrate the limits of relying on innovation as a principal mechanism to support social goals. Note further the small declines in wireless service since 2018 and the uptick in 2021.

The preceding suggests looking at a set of questions about Lifeline that the FCC’s Lifeline marketplace report does not fully explore. Specifically:

- What can Lifeline participants afford?
- What digital tools has the Lifeline-eligible population adopted?
- How does Lifeline enrollment compare with other benefit programs?

A. Perspectives on affordability of service

Low-income Americans pay a significant portion of their income for telephone service.

Lifeline households by definition are low-income. Using 2019 American Community Survey data to estimate the number of Lifeline-eligible households, the median income for Lifeline-eligible households for 2019 was \$19,500. For households in deep poverty (that is, those whose incomes are 50 percent of the federal poverty level), that figure was just \$2,400.

Surveys of Lifeline subscribers underscore the tight financial circumstances of these households. As noted earlier, 78 percent of Lifeline subscribers say they cannot afford a Lifeline co-pay of \$10 per month. Voice calling is the most important part of Lifeline service for 23 percent of subscribers, but two-thirds (68 percent) say voice, text, and data are all equally important to them.

Other surveys also illuminate the affordability issue for low-income Americans. A [2021 national survey](#) of low- and lower-middle-income households asked these households what they pay for service and to identify monthly service fees that would be too expensive for their budgets. That survey found a range of perspectives on affordability:

- 40 percent of households whose incomes were below \$50,000 annually said they could not afford any monthly fee;
- 22 percent reported that \$25 per month would be a comfortable figure for their household budgets; and
- 38 percent said that figures that align roughly with lower-cost market rates (between \$55 and \$70 per month) would be affordable for them.

According to [BroadbandNow](#), entry-level broadband plans start in the range of \$40 to \$50 per month. Carriers such as Verizon, Comcast, Spectrum, and AT&T have promotional rates that start at \$40 or \$50 per month; Cox starts at \$30. After a year, Cox's plan increases by \$15 to \$45 per month and AT&T's rate increases \$20. This means that low-income households, to be comfortable paying for monthly service, would require a subsidy that is far greater than Lifeline's current \$9.25. For many, \$30 might suffice in that it would put a \$50 monthly plan within reach (with the household covering the remaining \$20). Other households might need to use a \$30 subsidy in conjunction with a discounted offer in order to have service without making outlays themselves. This suggests that these consumers will greatly benefit from being able to combine their Affordable Connectivity Program and Lifeline benefits for the same service.

The other point to note is that low-income Americans pay a significant portion of their income for telephone service. The FCC Lifeline Marketplace report notes that the Commission would consider affordability in the context of "the extent to which voice and broadband service expenditures exceed two percent of low-income consumers' disposable household income." Analysis of the Census Bureau's Consumer Expenditure Survey (CES) shows that households whose annual incomes are below \$15,000 pay about \$500 per year for telephone service—or 3.3 percent of their income. Households in the \$15,000-to-\$30,000 income range pay \$660 per year for telephone service, or 2.2 percent of their income (using the upper range as the denominator). For households in deep poverty (whose median incomes are only \$2,400 annually), phone service might be as much as 15 percent of

their gross incomes (assuming such households pay less than \$500 per year). For all Lifeline-eligible households, assuming a cell phone bill annually of \$550 (or about \$45 per month), service is close to 3 percent of gross income.

The FCC views 2 percent of income as the threshold of affordability for phone service. The analysis of CES data, then, indicates that poor Americans are spending beyond the threshold of affordability for phone service. And this analysis is only for phone service. A broadband bill, even if reduced with a \$30-per-month Affordable Connectivity Program subsidy, could put spending on connectivity for many low-income households above 4 percent of monthly gross income.

All of this is to say that many poor households are likely to purchase phone and internet service at the expense of other items.

B. The Lifeline-eligible population and adoption of digital tools

Analysis of American Community Survey (ACS) data for 2019 shows that just more than half of Lifeline-eligible households have a wireline high-speed internet connection at home, nearly two-thirds have a cellular data plan, and nearly all have telephone service. The analysis herein builds on two ACS questions, one that specifically asks about whether a household subscribes to cable, digital subscriber line, or fiber-optic service. The other asks about whether a household has a mobile data plan for a computer or cell phone. The ACS does not have a question that would capture fixed wireless service, which is a growing market segment. The wireline/wireless dichotomy here is not intended to reflect technology bias but rather draw a focus to service attributes of wireless and wireline. Wireline services typically have higher speeds and data caps than mobile broadband. If fixed wireless service plans are similar to wireline ones—in reliability and with sufficiently fast speeds and comparably generous data allotments—they may have functionality that is similar to wireline plans (e.g., that permit largely unconstrained video streaming for educational applications).

Table 2, which contains the author's analysis of 2019 American Community Survey data, shows technology adoption figures for Lifeline-eligible and other households at specified income thresholds.

Table 2: Adoption of Digital Tools by Income & Lifeline-eligibility Status (2019)

	Lifeline-eligible Households	Household incomes less than \$25,000 per year	Household incomes \$25,000 to \$50,000 per year	Household incomes greater than \$50,000 per year
COMMUNICATION SERVICES				
Cellular data plans <i>and</i> wireline broadband	45.1%	36.3%	52.2%	75.1%
Cellular data plans	64.4%	55.5%	70.9%	87.4%
Wireline broadband	53.9%	49.8%	62.4%	81.3%
Telephone service at home	97.8%	96.3%	98.7%	99.4%
COMPUTING DEVICES				
Desktop or laptop computer	58.2%	54.9%	68.3%	88.8%
Tablet computer	44.9%	41.2%	49.4%	73.8%
Smartphone	77.4%	76.5%	81.6%	93.6%
<i>Either</i> desktop/laptop <i>or</i> tablet	66.9%	58.7%	76.3%	92.9%
Number of households	31,666,046	22,976,861	25,612,689	74,169,512

There are stark differences in technology adoption among the lowest-income Americans and the majority (60 percent) of American households whose annual incomes are more than \$50,000 (according to 2019 ACS data). Most of these households (75.1 percent) have both a wireline broadband subscription and a cellular data plan. That is more than twice the rate (36.3 percent) for low-income households. At upper-income levels—the 15 percent of homes whose annual incomes exceed \$150,000—85.1 percent had both wireline and cellular data subscriptions. Combining the two lowest income categories shows that 44.7 percent of U.S. households whose incomes are \$50,000 or less have cellular data plans and wireline broadband—far below the 75.1% figure for those whose incomes are above that threshold.

The differences are not as sharp for Lifeline-eligible households, although the number of Lifeline-eligible households undoubtedly grew in 2020. The U.S. Department of Agriculture reports that 4.3 million more households used SNAP benefits in 2020 (much of this spurred by the pandemic). This means 36 million households (at least) were eligible for Lifeline by the end of 2020.

Nearly all (97.8 percent) Lifeline-eligible households have telephone service. If USAC figures are reliable, about one-fifth of eligible homes participate in the Lifeline program (although that may be lower with expanded usage of SNAP in 2020). Since Lifeline participants still overwhelmingly chose to apply the subsidy to mobile telephone service, few of the 54 percent of Lifeline households with wireline broadband likely have this service subsidized by Lifeline. As a result, only about 17 million of the 31.7 million households who qualify for Lifeline have wireline broadband service.

The other point to take away from the table is the differences in device ownership in households. Just 58.7 percent of low-income households have either a desktop or laptop computer or a tablet computer. Since desktop and laptop computers are unquestionably important for doing schoolwork and telehealth, it is worth noting that only 54.9 percent of low-income households have at least one in the home. Lifeline-eligible households fare a bit better, but the differences in comparison to households whose incomes exceed \$50,000 are clear. Some 92.9 percent of those households have either a desktop, laptop, or tablet computer. This “device gap” is the reason for the proposed [Connected Device Grant Program](#), which would help community groups distribute free or discounted desktops, laptops, or tablets to low-income households.

C. Lifeline and other benefit programs

Not only has Lifeline participation fallen in recent years, but participation rates in Lifeline compare poorly with other programs. A Bureau of Labor Statistics [analysis](#) of 2014 data found that 84.1 percent of eligible families received Medicaid and that 51.6 percent of eligible families received Supplemental Nutrition Assistance Program (SNAP) benefits. The [Center on Budget and Policy Priorities](#), in comparing the number of people using SNAP with those at 130 percent of the poverty line (or less), indicates that SNAP participation rates rise in times of economic stress, increasing to as much as 70 percent. At the same time, Lifeline’s participation rate exceeds those for housing assistance (21.8 percent) and Supplemental Security Income (9.9 percent).

This data points to a need for outreach to eligible households so that they are aware of the benefits of Lifeline and the Affordable Connectivity Program.

Building a New Universal Service Market

The climate for government support to promote connectivity has changed fundamentally with the creation of the Emergency Broadband Benefit and its successor, the Affordable Connectivity Program. [November 2021 data](#) on EBB enrollment (at a time when 7.1 million households had enrolled) offers a glimpse into how the market for low-income connectivity might evolve.

- Most (52 percent) Emergency Broadband Benefit enrollees are verified for eligibility because they are already Lifeline beneficiaries. This is below the 60 percent figure USAC reported at the end of July when enrollment was 4.1 million for EBB. This suggests that EBB's enrollment growth in recent months has been less dependent on Lifeline consumers than was the case initially. Over half participate in SNAP or Medicaid.
- Mobile broadband is obviously the most popular service type, with 67.9 percent of EBB enrollees choosing this. Given that over half of EBB participants are also Lifeline participants, and more than 90 percent of Lifeline participants choose mobile service, this is not surprising. It seems likely, with a disproportionate number of enrollees in the 25-to-49 age range, that many EBB customers are upgrading their data plans with the additional benefit.
- The figure (31.6 percent) for fixed broadband (i.e., cable, DSL, or fiber) suggests that this service type could establish a foothold in the new universal service market. After a few months in the market, fixed providers have gotten nearly one-third of EBB customers. The data does not tell us who they are, but one can imagine households with children or those with a high demand for working at home or for telehealth services choosing this option (having heretofore relied on smartphones alone for internet connectivity).

Today, the market for digital connectivity gives everyone in the United States the option to purchase voice and data services that are available on-the-go (wirelessly) and at home (usually a wireline service). Most choose to purchase both kinds of service. For most consumers, one complements the other.

Lifeline-eligible households participate in this same market, but the outcome for them differs from what has become the norm in the United States. Only a minority of Lifeline-eligible households have both types of service. When a consumer chooses just one, it is usually wireless and it is because they cannot afford both wireless and wireline service.

A low-income household without sufficient connectivity—say, a home where a parent needs the mobile device for everyday activities but cannot afford another subscription so that their child can access educational materials—can turn to two government programs. One is the Affordable Connectivity Program, whose \$30-per month-subsidy matches or exceeds the monthly service price for many discount plans in the market. The other, Lifeline, has a \$9.25 subsidy that has been applied to mainly wireless services that often have significant limits on voice and data.

Both programs to support low-income connectivity should have sufficient government subsidies to serve the full needs of customers. The Affordable Connectivity Program's level is appropriate to the task, but Lifeline's is not. There are other challenges in making this market function well:

- Different types of companies serve wireless and wireline customers, and not all companies participate in the low-income connectivity market.
- The novelty of the Affordable Connectivity Program means that many eligible households do not yet know about it.
- Enrolling in Lifeline is not easy for some consumers, while enrolling in the Affordable Connectivity Program is a work in progress.

To ensure that the market for universal connectivity is well functioning, policymakers should:

- **Establish a “connectivity baseline” for Lifeline:** Having both wireline and wireless data is the norm for a majority of Americans. That is the goal on which policymakers should set their sights. Policymakers should also consider service speeds for plans offered in connection with the Affordable Connectivity Program. Low-income households should not have internet speeds that do not support applications necessary for working from home, distance education, or telehealth.
- **Increase the Lifeline subsidy:** This report recommends increasing Lifeline's \$9.25 subsidy level to at least \$20 per month. That level gives providers a better chance to serve qualified low-income households at wireless service levels adequate for contemporary usage.
- **Prioritize outreach and communications:** Survey data shows that as of July 2021, just [23 percent of lower-income](#) Americans were aware of the Emergency Broadband Benefit program, underscoring the need for outreach. The FCC's order implementing the Affordable Connectivity Program does provide [\\$100 million](#) in funding over five years for outreach. Although carriers will inevitably conduct some of this outreach, research shows that low-income consumers are more likely to trust public libraries than internet service providers for information on programs such as EBB. Funding community anchor institutions for program outreach would therefore make sense. Schools, for example, could help educate families enrolled in free and reduced-price school lunch and the school breakfast programs about the Affordable Connectivity Program.
- **Ensure that enrollment is straightforward:** Whereas the Lifeline market has been hampered by challenging enrollment processes and sometimes limited marketing, a new Affordable Connectivity Program/Lifeline market must be simple for both participating consumers and carriers. The FCC's Affordable Connectivity Program order provides resources for focus groups of potential program beneficiaries, and these provide an opportunity to explore in depth any pitfalls in program enrollment processes. The FCC has also launched a pilot program for Affordable Connectivity Program to allow trusted third parties to have access to the National Verifier as a means to encourage enrollment. The FCC should extend this pilot to Lifeline services (i.e., trusted third parties could use the verifier to enroll people in Lifeline plans).

- **Provide a reliable funding stream:** The current contribution method for the Universal Service Fund is strained. By law, there must be specific, predictable, and sufficient federal and state mechanisms to preserve and advance universal service, including Lifeline. The Infrastructure Investment and Jobs Act requires the FCC to initiate a proceeding evaluating the bill’s implications on universal service goals and report to Congress. The law specifies that the FCC’s findings should not diminish universal service goals and could ask Congress to expand them. Funding these goals must be part of the FCC’s report to Congress.

It will also be important to rigorously assess the impact of subsidized connectivity on users. As the name indicates, the goal of the Affordable Connectivity Program is to make broadband more affordable for low-income households, which can manifest itself in two ways. First, the \$30 subsidy should result in new households getting online—that is, those who did not previously have (or had not recently had) internet service at home. Second, the subsidy should ease the burden of broadband costs to households that are “subscription vulnerable.” These are households that, according to a recent [survey of Philadelphia](#) households, find it difficult to afford service and maintain it through difficult economic times. The subscription vulnerable are as many as one-third of all households in Philadelphia. Investigating these two possible impacts (and others) should be built into the Affordable Connectivity Program.

A New Era for Universal Service

The coronavirus pandemic has underscored the critical importance of affordable, high-speed broadband for individuals, families, and communities to be able to work, learn, and connect remotely while supporting social distancing.

Think of that working single mother trying to make ends meet while furthering her education, loading everyone in the family car and camping out in a fast-food restaurant's parking lot so they can all get online to complete their academic obligations. Or the newly unemployed workers without home broadband who miss out on job postings that are only listed online. Or seniors and veterans who need to visit doctors online but have lower-tiered mobile plans with data caps and voice minute limits.

The Affordable Connectivity Program is an unprecedented opportunity to ensure everyone can afford robust internet access and is a sea change for universal service in this country. Teamed with a reformed Lifeline program, focused on wireless connectivity, the Affordable Connectivity Program could deliver for low-income consumers the continuum of connectivity that most people in the United States enjoy.

That's because implicit in the design of the Affordable Connectivity Program is the following supposition: Access to affordable, reliable, high-speed broadband is essential to full participation in modern life in the United States, but the Lifeline program does not meet people's fixed and mobile connectivity needs.

The problem is one of service affordability, which is an artifact of [market concentration](#) that puts service out of reach for some households. Dating to 1996, the idea was that a simple contribution from industry revenues, not too far afield in design from cost-shifting from the era of monopoly, could fund connectivity for those in need. Ongoing innovation in the sector would create enough downward pressure on prices to sustain the system. Yet innovation, while robust, had an unintended effect. The revenue base for funding universal service fell at a much faster rate than the decline in wireless service prices. The health crisis opened the door to examining the market structure for the provision of home broadband service.

The Affordable Connectivity Program aims to ameliorate the cost pressure of connectivity on a wider range of households. The new program has that potential, especially if it is combined with the Lifeline subsidy. However, the new funding bounty for universal service must include not only funds for outreach but also a rigorous and ongoing assessment of each program's efficacy. This puts a focus on program execution in the near term—that is, developing a connectivity program that is well administered, with beneficiaries having the information they need to sign up, an enrollment process that is not a hurdle to participation, and appropriate data metrics to understand benefits relative to costs. This, in turn, can lay the groundwork for a long-term approach to meeting the universal service policy goals Congress has articulated.

Policymakers should never lose sight of the goal of universal service: to ensure that essential communications services are available and affordable for all. Expanding broadband usage can

enhance U.S. economic growth and build stronger democratic institutions. Expanding broadband usage can improve lives, opens windows on the world, connect people to people, and connect people to services.

Broadband's fundamental value doesn't simply come from connecting computers to networks; it comes from connecting people to opportunity, and society to new solutions—because at the end of the day, people are the most critical half of the last-mile equation.

Endnotes

- 1 Ithiel de Sola Pool, *Forecasting the Telephone: A Retrospective Technology Assessment of the Telephone*. Norwood, NJ: Ablex Publishing, 1983. P. 22.
- 2 That income threshold is well below the U.S. [median income for 2019](#) of \$69,560.
- 3 Peter Temin, *The Fall of the Bell System: A Study in Prices and Politics*. New York: Cambridge University Press, 1987, p. 53-54.
- 4 Not all (or even most) of this growth was due to Lifeline, and in fact, Lifeline's spending growth occurred most sharply from 2000 to 2010, when [expenditures](#) for it grew from \$667 million to \$1.3 billion.
- 5 Pamela Herd and Donald P. Moynihan, *Administrative Burden: Policymaking by other means*. New York: Russell Sage Foundation, 2018.



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