

**FACT SHEET\***

**Promoting Telehealth for Low-Income Consumers**  
Notice of Inquiry – WC Docket No. 18-213

**Background:** The FCC’s top priority is to increase digital opportunities for all Americans, and nowhere is that imperative more critical than in the area of health care. Broadband-enabled telehealth services are assuming an increasingly important role in providing care, and advances in telehealth technologies are now enabling patients to receive “connected care everywhere.” Whether it’s through remote patient monitoring technologies or mobile health applications that can be accessed on smartphones, tablets, or other connected devices, patients are seeing improved health outcomes and significant cost savings through high-tech care that can be delivered directly to them regardless of where they’re physically located.

It is critical that all Americans have access to these connected care services. However, many low-income consumers, particularly those living in rural areas, lack access to affordable or adequate broadband and might not have the opportunity to benefit from these telehealth services. In this *Notice of Inquiry*, the FCC would therefore explore launching an experimental “Connected Care Pilot Program” to support the delivery of connected care services to low-income Americans.

**What the Notice of Inquiry Would Do:**

- Seek comment on creating a Universal Service Fund pilot program to promote the use of broadband-enabled telehealth services among low-income families and veterans, with a focus on services delivered directly to patients beyond the doors of brick-and-mortar health care facilities.
- Seek comment on the goals of, and statutory authority for, the pilot program.
- Seek comment on the design of the pilot program, including: (1) the program budget; (2) the application process and types of telehealth pilot projects that should be funded; (3) eligibility criteria for participating health care providers, broadband service providers, and low-income consumers; (4) the broadband services and other communications services and equipment that should be supported; (5) the amount of support and how it should be disbursed; and (6) the duration of the program.
- Seek comment on how to measure the effectiveness of pilot projects in achieving the goals of the program.

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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of
Promoting Telehealth for Low-Income Consumers
WC Docket. No. 18-213

NOTICE OF INQUIRY\*

Adopted: []

Released: []

Comment Date: [30 days after release date]
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By the Commission:

I. INTRODUCTION

1. The Commission's top priority is to increase digital opportunity for all Americans, and nowhere is this imperative more critical than in the area of health care. High-quality health care has become increasingly reliant on the widespread availability of high-speed connectivity, and broadband-enabled telehealth services are assuming an increasingly vital role in providing care. Indeed, advances in technology mean that the delivery of high-tech services to patients are no longer limited to the confines of connected, brick-and-mortar health care facilities. Rather, there is a movement in telehealth towards connected care everywhere. Whether through remote patient monitoring technologies or mobile health applications that can be accessed on smartphones, tablets, or other connected devices, patients are seeing improved outcomes and significant cost savings through high-tech care that can be delivered directly to them regardless of where they are physically located. Cutting-edge connected care services have been used to respond to a wide breadth of health challenges, including:

- diabetes management,1
• opioid dependency,2

\* This document has been circulated for tentative consideration by the Commission at its August 2018 open meeting. The issues referenced in this document and the Commission's ultimate resolution of those issues remain under consideration and subject to change. This document does not constitute any official action by the Commission. However, the Chairman has determined that, in the interest of promoting the public's ability to understand the nature and scope of issues under consideration, the public interest would be served by making this document publicly available. The FCC's ex parte rules apply and presentations are subject to "permit-but-disclose" ex parte rules. See, e.g., 47 C.F.R. §§ 1.1206, 1.1200(a). Participants in this proceeding should familiarize themselves with the Commission's ex parte rules, including the general prohibition on presentations (written and oral) on matters listed on the Sunshine Agenda, which is typically released a week prior to the Commission's meeting. See 47 CFR §§ 1.1200(a), 1.1203.

1 See, e.g., American Telemedicine Association (ATA) Connect2Health Comments, GN Docket No. 16-46, at 3 (filed May 24, 2017) (ATA Connect2Health Comments); Timothy Xu et al., Telemedicine in the Management of Type 1 Diabetes, Preventing Chronic Disease 2018 (Jan. 25, 2018), https://www.cdc.gov/pcd/issues/2018/17\_0168.htm.

- pediatric heart disease,<sup>3</sup>
- stroke treatment,<sup>4</sup>
- mental health treatment,<sup>5</sup>
- high-risk pregnancies,<sup>6</sup> and
- cancer treatment.<sup>7</sup>

It is critical that all Americans have access to these connected care services—whether enabled by existing broadband technologies or next-generation technologies, such as 5G. However, many low-income Americans, particularly those living in rural areas, lack access to affordable or adequate broadband and thus might not have the same opportunity to benefit from these and other advanced telehealth services.

2. Today, we therefore launch an inquiry into how the Commission can help advance and support the movement in telehealth towards connected care everywhere and improve access to the life-saving broadband-enabled telehealth services it makes possible. Specifically, we seek comment on creating an experimental “Connected Care Pilot Program” to support the delivery of these telehealth services to low-income Americans, with a focus on the delivery of such services to patients beyond the doors of brick-and-mortar health care facilities. Today’s inquiry reflects our continued commitment to supporting broadband connectivity for those facing barriers to high-quality health care and maximizing the benefits of telehealth for all Americans through enhanced digital access. It builds on the Commission’s existing initiatives, which have focused on promoting broadband connectivity within and between health care facilities across the country.

## II. BACKGROUND

3. The U.S. health care industry has become increasingly reliant on broadband networks in the last two decades. Connectivity within and between health care facilities has enabled a wide range of telehealth uses, from remote radiology to remote surgery, particularly for rural patients that might

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<sup>2</sup> See, e.g., Dr. Erica Liebelt et al., *Telehealth as Means to Diagnose and Treat Opioid Abuse*, Healthcare Information and Management Systems Society (Dec. 20, 2017), <http://www.himss.org/news/telehealth-means-diagnose-and-treat-opioid-abuse>.

<sup>3</sup> See, e.g., Gary M. Satou et al., *Telemedicine in Pediatric Cardiology: A Scientific Statement from the American Heart Association*, *Circulation* 2017 (Mar. 14, 2017), <http://circ.ahajournals.org/content/135/11/e648>.

<sup>4</sup> See, e.g., ATA Connect2Health Comments at 4; see also *Stroke Telemedicine (Telestroke)*, Mayo Clinic (last visited May 30, 2018), <https://www.mayoclinic.org/tests-procedures/stroke-telemedicine/about/pac-20395081>.

<sup>5</sup> See, e.g., Healthcare Information and Management Systems Society Connect2Health Comments, GN Docket No. 16-46, at 8-15 (filed July 21, 2017); see also U.S. Department of Veterans Affairs, *VA Launches Telehealth Program for Rural Vets with PTSD* (Mar. 6, 2018), <https://www.va.gov/opa/pressrel/pressrelease.cfm?id=4018>; American Psychiatric Association, *Telepsychiatry*, <https://www.psychiatry.org/psychiatrists/practice/telepsychiatry> (last visited May 30, 2018); Letter from Senator Cory Gardner to FCC Commissioner Brendan Carr (July 9, 2018) (noting high suicide rates in Colorado and observing that telepsychiatry has the potential to alleviate challenges caused by lack of access to mental health care professionals).

<sup>6</sup> See, e.g., Betsy McKay, *Telemedicine Helps Pregnant Women at Risk*, *Wall Street Journal* (Sept. 12, 2017), <https://www.wsj.com/articles/telemedicine-helps-pregnant-women-at-risk-1505268610>; see also Erin Clark, MD, University of Utah, *Personalized Prenatal Care for Low-Risk Pregnancies Using Telemedicine* (last updated Nov. 6, 2017), <https://clinicaltrials.gov/ct2/show/NCT01970436>.

<sup>7</sup> See, e.g., *New Telemedicine Program Brings Top-Notch Cancer Care to More Marylanders*, <https://www.umms.org/umgcc/cancer-services/cancer-care/radiation-oncology/therapies-technology/new-telemedicine-program-brings-top-notch-cancer-care-to-more-marylanders> (last visited July 6, 2018).

otherwise lack access to primary care physicians and specialists located hundreds or thousands of miles away. The Commission has taken an active role in promoting health care connectivity through the Rural Health Care Program, which provides eligible health care providers with discounted telecommunications and broadband Internet access services,<sup>8</sup> and has supported the deployment of broadband to create networks of connected health care facilities.<sup>9</sup> The Commission has also been at the forefront of the intersection between connectivity and health, establishing the multidisciplinary Connect2Health Task Force to identify barriers to broadband-enabled health care solutions,<sup>10</sup> and developing an interactive mapping platform that overlays health status indicators with broadband availability across the country.<sup>11</sup>

4. While the Commission has worked hard to identify and support the broadband needs of health care facilities, health care trends are rapidly changing. The current “hub-and-spoke”<sup>12</sup> model of supporting broadband connectivity at and between brick-and-mortar health care facilities is not the only effective means of promoting access to health care. Moreover, when patients leave the doors of these facilities, their access to high-tech health care can go away entirely. However, with the rise of interconnected monitoring devices, broadband-enabled video-conferencing, and cloud computing, patients and providers have begun to realize the benefits of technologies that keep patients seamlessly connected to health care *beyond* the facility.<sup>13</sup> By providing care directly to patients in their homes and remotely tracking vital signs and symptoms to detect problems before they arise, the new connected health care model is fundamentally changing how patients access treatment.<sup>14</sup> There is now a continuum of care options available that range from services provided inside connected facilities to direct-to-patient and remote telehealth options.

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<sup>8</sup> 47 CFR §§ 54.602(a), 54.602(b), 54.609(a), 54.634(a)-(b).

<sup>9</sup> See FCC, Rural Health Care Pilot Program, <https://www.fcc.gov/general/rural-health-care-pilot-program> (last visited July 5, 2018).

<sup>10</sup> See FCC, FCC Initiatives, Connect2HealthFCC, <https://www.fcc.gov/about-fcc/fcc-initiatives/connect2healthfcc> (last visited June 18, 2018); *FCC Seeks Comment and Data on Actions to Accelerate Adoption and Accessibility of Broadband-enabled Health Care Solutions and Advanced Technologies*, Public Notice, GN Docket No. 16-46, 32 FCC Rcd 3660 (2017); FCC, FCC Initiatives, Connect2HealthFCC, *Beyond the Beltway Series*, <https://www.fcc.gov/health/beyond-beltway-series> (last visited June 18, 2018).

<sup>11</sup> FCC, Mapping Broadband Health in America, <https://www.fcc.gov/health/maps> (last visited July 5, 2018). The available maps include: Rural Broadband and Physician Shortages; Broadband and Diabetes in Rural America; Broadband Gaps in America; and Broadband Access and Obesity.

<sup>12</sup> See James K. Elrod and John L. Fortenberry, Jr., *The Hub-and-Spoke Organization Design Revisited: A Lifeline for Rural Hospitals*, BMC Health Services Research 17 (Dec. 2017), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5751794/>.

<sup>13</sup> See, e.g., Darrell M. West, *How 5G Technology Enables the Health Internet of Things*, Center for Technology Innovation at Brookings (July 2016), [https://www.brookings.edu/wp-content/uploads/2016/07/5G-Health-Internet-of-Things\\_West.pdf](https://www.brookings.edu/wp-content/uploads/2016/07/5G-Health-Internet-of-Things_West.pdf); Karen Schuller Rheuban & Elizabeth A. Krupinski, *Understanding Telehealth* ch. 11 (2018); see also Letter from Senator Todd Young to FCC Commissioner Brendan Carr (July 10, 2018) (noting “the value of moving from doctor-to-doctor telemedicine interactions to doctor-to-patient interactions and the promise that holds”).

<sup>14</sup> See, e.g., Karen Schuller Rheuban & Elizabeth A. Krupinski, *Understanding Telehealth* ch. 11 (2018); Greg Slabodkin, “CMS proposes reimbursing home health agencies for remote patient monitoring,” Health Data Management (July 3, 2018), <https://www.healthdatamanagement.com/news/cms-proposes-reimbursing-home-health-agencies-for-remote-patient-monitoring> (statement of CMS Administrator Seema Verma) (“We are proposing to modernize Medicare to promote innovation and improve home health by increasing access to remote patient monitoring. This will allow patients to share more live-time data with their providers and caregivers, which will lead to more tailored care and increased positive health outcomes.”).

5. Indeed, studies show that remote patient monitoring—a major component of direct-to-the-patient connected care—has the potential to significantly improve health outcomes.<sup>15</sup> For example, the University of Mississippi Medical Center (UMMC) partnered with a mobile broadband provider to remotely monitor diabetes patients in rural Mississippi via tablet computers.<sup>16</sup> During the pilot, doctors and other health practitioners treated patients remotely at home using video streaming and other forms of two-way live communications.<sup>17</sup> The pilot resulted in, among other benefits, a marked decrease in blood glucose levels, early recognition of diabetes-related eye disease, and no diabetes-related hospitalizations or emergency room visits among the patients.<sup>18</sup> Similarly, the Veterans Health Administration (VHA) conducted a three-year remote patient monitoring program involving more than 43,000 veterans with conditions including hypertension, congestive heart failure, chronic obstructive pulmonary disease, depression, and PTSD. The program resulted in a 25 percent reduction in days of inpatient care and a 19 percent reduction in hospital admissions.<sup>19</sup>

6. Mobile health applications also have the potential to improve health outcomes, and device manufacturers and app developers are responding to the shift towards providing connected health care at the patient's location. These offerings can address a broad range of health conditions and include pocket-sized blood glucose meters that send real-time alerts to the patient's family members and health care

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<sup>15</sup> See, e.g., Varma N. Ricci RP, *Impact of remote monitoring on clinical outcomes*, 26 J. of Cardiovascular Electrophysiology 1388-1395 (2015) (explaining that a 2015 remote patient monitoring study of nearly 270,000 patients with implanted rhythm devices, including pacemakers, demonstrated significantly improved survivability, with patients not participating in remote patient monitoring dying at twice the rate of those patients having at least 75% compliance); Sandra Mierdel, Kirk Owen. *Telehomecare reduces ER Use and Hospitalizations at William Osler Health System*. *Stud Health Technol Inform* 2015;209:102-108 (finding that a remote patient monitoring initiative in Ontario, Canada showed a 46% reduction in emergency department visits, 53% reduction in hospital admissions, and 25% shorter lengths of stay among the 466 patients enrolled); Polisena J. et al. *Home Telemonitoring for Congestive Heart Failure: a Systematic Review and Meta-Analysis*; J. Telemed Telecare 2010; 16(2):68-76 (describing a 2015 study of 20 remote patient monitoring trials involving more than 3,800 patients which found that remote patient monitoring was associated with a 20 percent reduction in all-cause mortality and a 15 percent reduction in heart failure-related hospitalizations).

<sup>16</sup> See, e.g. Mississippi Telehealth, *Remote Monitoring Pays Dividends for Diabetics*, Med City News (Sept. 13, 2016), <https://medcitynews.com/2016/09/mississippi-telehealth-remote-monitoring/>; Testimony of Michael P. Adcock, FACHE, Executive Director, Center for Telehealth University of Mississippi Medical Center, Before the U.S. Senate Committee on Commerce, Science, and Transportation, Subcommittee on Communications, Technology, Innovation and the Internet, at 1-2 (Nov. 7, 2017), <https://prodnet.www.neca.org/publicationsdocs/wwpdf/110717adcock.pdf>; Letter from Senator Roger Wicker to Commissioner Brendan Carr, Federal Communications Commission (July 5, 2018) (noting that the UMMC pilot program enabled “rural patients to take preventative steps and avoid hospital stays, reducing costs and greatly improving patient outcomes”).

<sup>17</sup> UMMC Delta Diabetes Project Improves Use of Telehealth, Clarion Ledger (Oct. 6, 2016), <https://www.clarionledger.com/story/news/2016/10/08/delta-project-improves-use-telehealth-university-of-mississippi-medical-center/91670816/>.

<sup>18</sup> Testimony of Michael P. Adcock, FACHE, Executive Director, Center for Telehealth University of Mississippi Medical Center, Before the U.S. Senate Committee on Commerce, Science, and Transportation, Subcommittee on Communications, Technology, Innovation and the Internet, at 2 (Nov. 7, 2017), <https://prodnet.www.neca.org/publicationsdocs/wwpdf/110717adcock.pdf>.

<sup>19</sup> Rheuban & Krupinski, *supra* note 13 at 145.

provider;<sup>20</sup> devices to facilitate home-based virtual examinations;<sup>21</sup> and home training consoles that provide ongoing rehabilitation and therapy to patients with brain injuries.<sup>22</sup>

7. Beyond better health outcomes, telehealth technologies also offer the promise of significantly reducing health care costs. The United States spends over \$3 trillion on health care every year<sup>23</sup>—a greater percentage of gross domestic product than any other nation in the Organization for Economic Co-operation and Development.<sup>24</sup> Telehealth technologies are expected to create significant savings for chronic disease management, which accounts for over 85 percent of direct health care spending in the country.<sup>25</sup> Analysts further estimate that widespread use of remote patient technology and virtual doctor visits could save the American health care system \$305 billion annually.<sup>26</sup>

8. These cost savings have been borne out on a project level.<sup>27</sup> For example, net of costs, the UMMC remote patient monitoring pilot resulted in nearly \$700,000 in annual savings due to reductions in hospital readmissions alone. Assuming just 20 percent of Mississippi’s diabetic population were to enroll in this type of remote patient monitoring program, Medicaid savings for the state would be approximately \$189 million per year. The VHA remote patient monitoring program similarly produced substantial savings: the annual cost of the program was \$1,600 per patient compared to more than \$13,000 per patient for VHA’s home-based primary services.<sup>28</sup>

9. For low-income Americans facing obstacles to obtaining health care—especially those living in rural areas<sup>29</sup> and veterans<sup>30</sup>—the potential of telehealth services to improve access to affordable health

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<sup>20</sup> See Philips Medical Systems, 510(k) Summary (Aug. 31, 2007), [https://www.accessdata.fda.gov/cdrh\\_docs/pdf7/K071564.pdf](https://www.accessdata.fda.gov/cdrh_docs/pdf7/K071564.pdf); see also Dario Health, Dario Blood Glucose Monitoring System, <http://www.dariohealth.com/solutions/my-dario/> (last visited July 6, 2018).

<sup>21</sup> TytoCare, TytoHome, <https://www.tytocare.com/tytohome/> (last visited July 5, 2018) (describing the TytoHome device “for examining the ears, throat, heart, lungs, abdomen, skin and capturing heart rate and temperature data”).

<sup>22</sup> See Trevor Clawson, The Therapy Gap-Startup Offers Hope for Brain Impaired Patients, *Forbes* (Aug. 31, 2017), <https://www.forbes.com/sites/trevorclawson/2017/08/31/the-therapy-gap-startup-offers-hope-for-brain-impaired-patients/#16a1aacd4a5c>.

<sup>23</sup> Centers for Medicare and Medicaid Services, NHE Fact Sheet (Apr. 17, 2018), <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html>.

<sup>24</sup> Rick Schadelbauer, Anticipating Economic Returns of Rural Telehealth, NTCA-The Rural Broadband Association at 1 (Mar. 2017), [https://www.ntca.org/sites/default/files/documents/2017-12/SRC\\_whitepaper\\_anticipatingeconomicreturns.pdf](https://www.ntca.org/sites/default/files/documents/2017-12/SRC_whitepaper_anticipatingeconomicreturns.pdf).

<sup>25</sup> Rheuban & Krupinski, *supra* note 13, at 134.

<sup>26</sup> See Goldman Sachs, Internet of Things, Vol. 5, The Digital Revolution Comes to US Healthcare, at 12-13 (2015), [https://www.wur.nl/upload\\_mm/0/f/3/8fe8684c-2a84-4965-9dce-550584aae48c\\_Internet%20of%20Things%205%20-%20Digital%20Revolution%20Comes%20to%20US%20Healthcare.pdf](https://www.wur.nl/upload_mm/0/f/3/8fe8684c-2a84-4965-9dce-550584aae48c_Internet%20of%20Things%205%20-%20Digital%20Revolution%20Comes%20to%20US%20Healthcare.pdf).

<sup>27</sup> See, e.g., Rheuban & Krupinski, *supra* note 13, at 147 (explaining that a remote patient monitoring program conducted by Geisinger Health Plan found that for every \$1 spent to implement the program there was approximately \$3.30 return on this investment in terms of cost savings accrued to the provider).

<sup>28</sup> Rheuban & Krupinski, *supra* note 13, at 145.

<sup>29</sup> See AHA Connect2Health Comments at 4-5; Schmitz, David F. Written Testimony on Behalf of the National Rural Health Association Before the United States House Subcommittee on Health and Technology at 1 (2017), [https://smallbusiness.house.gov/uploadedfiles/7-20-17\\_schmitz\\_testimony.pdf](https://smallbusiness.house.gov/uploadedfiles/7-20-17_schmitz_testimony.pdf); Center of Health Law and Policy Innovation, The Promise of Telehealth: Strategies to Increase Access to Quality Healthcare in Rural America at 3 (Mar. 2016), [https://www.chlpi.org/wp-content/uploads/2013/12/Telehealth-and-CHWs\\_March-2018.pdf](https://www.chlpi.org/wp-content/uploads/2013/12/Telehealth-and-CHWs_March-2018.pdf); Letter from Senator John Thune to FCC Commissioner Brendan Carr (July 10, 2018) (noting the need for more “telehealth deployments, particularly in rural and tribal parts of the country that might otherwise lack the same access to

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care is particularly significant. In addition to the rising health care costs affecting many Americans,<sup>31</sup> rural residents face endemic hospital closures<sup>32</sup> and doctor shortages,<sup>33</sup> and are often forced to spend extensive amounts of time and money to travel to access essential health care.<sup>34</sup> Low-income rural areas have also been hit especially hard by the opioid crisis, due to a lack of access to addiction treatment.<sup>35</sup> Likewise, veterans living in rural areas are among the largest population of Americans who struggle to receive accessible and affordable health care.<sup>36</sup>

10. Connected care services have the potential to produce measurable improvements in health outcomes and cost savings for low-income Americans, but without access to affordable high-speed broadband service, they cannot take advantage of this new and growing trend in telehealth. While the Commission has played, and will continue to play, an important role in supporting the broadband needs of health care facilities, we believe that we can do more to support the broadband needs of low-income patients to ensure that they can realize the benefits of connected care everywhere.

### III. DISCUSSION

11. We believe that universal service support can play a vital role in improving access to cutting-edge digital health resources and bridging the health care divide for low-income patients in particular. This Notice of Inquiry is thus the first step in developing a Universal Service Fund (USF) pilot program to explore how to promote the use of broadband-enabled telehealth services and applications by low-income families and low-income veterans, with a focus on such services and applications delivered directly to patients outside of brick-and-mortar health care facilities. We seek comment on instituting such a pilot program with the aim of providing affordable broadband for these connected care services to low-income patients and thereby improving health outcomes and reducing health care costs.

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healthcare as those living in other areas of the country”); Letter from Senator Deb Fischer to FCC Commissioner Brendan Carr (July 10, 2018) (“Nebraskans, particularly seniors and veterans, living far from populous cities must overcome not only the digital divide, but also the patient doctor divide.”).

<sup>30</sup> See Rand Health Quarterly, Balancing Demand and Supply for Veterans (2016), [https://www.rand.org/pubs/research\\_reports/RR1165z4.html](https://www.rand.org/pubs/research_reports/RR1165z4.html); see also Eric Wicklund, Telehealth Can Work for Veterans Dealing with Depression at 3 (2016), <https://mhealthintelligence.com/news/telehealth-can-work-for-veterans-dealing-with-depression>.

<sup>31</sup> See, e.g., National Conference of State Legislatures, Health Insurance: Premiums and Increases (June 8, 2018), <http://www.ncsl.org/research/health/health-insurance-premiums.aspx>; Centers for Medicare and Medicaid Services, NHE Fact Sheet (April 17, 2018), <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html>.

<sup>32</sup> AHA Connect2Health Comments at 10; Center of Health Law and Policy Innovation, The Promise of Telehealth: Strategies to Increase Access to Quality Healthcare in Rural America at 3 (Mar. 2016), [https://www.chlpi.org/wp-content/uploads/2013/12/Telehealth-and-CHWs\\_March-2018.pdf](https://www.chlpi.org/wp-content/uploads/2013/12/Telehealth-and-CHWs_March-2018.pdf).

<sup>33</sup> AHA Connect2Health Comments at 4-5; Schmitz, David F. Written Testimony on Behalf of the National Rural Health Association at 1 (2017). Analysts project a shortfall of between approximately 42,000 and 121,000 physicians in the U.S. by 2030. See Association of American Medical Colleges, Research Shows Shortage of More Than 100,000 Doctors by 2030 (Mar. 14, 2017), <https://news.aamc.org/medical-education/article/new-aamc-research-reaffirms-looming-physician-shor/>.

<sup>34</sup> See Center of Health Law and Policy Innovation, *supra* note 29 at ii.

<sup>35</sup> See, e.g., U.S. Department of Agriculture, Opioid Misuse in Rural America, <https://www.usda.gov/topics/opioids> (last visited July 11, 2018).

<sup>36</sup> Rand Health Quarterly Balancing Demand and Supply for Veterans, *supra* note 30; see also Wicklund, *supra* note 30.

12. Creating such a pilot program is in keeping with the Commission's tradition of conducting pilots to explore the benefits of using USF support to enhance access to broadband service. In 2006, the Commission established a pilot program under the Rural Health Care support mechanism "to examine how the rural health care . . . funding mechanism can be used to enhance public and non-profit health care providers' access to advanced telecommunications and information services."<sup>37</sup> Health care providers selected to participate in that pilot program received funding to construct dedicated broadband networks that connected health care providers in a state or region.<sup>38</sup> Similarly, in 2012, the Commission established a pilot program within the Lifeline support mechanism "to gather data on whether and how the Lifeline program can be structured to promote the adoption and retention of broadband services by low-income households,"<sup>39</sup> providing qualifying low-income consumers up to 12 months of discounted broadband services.<sup>40</sup>

13. Consistent with the Commission's history of establishing pilot projects through the universal service support mechanisms, and as discussed in more detail below, we seek comment on conducting a pilot program with a limited number of health care providers to explore the use of USF support to promote the use of connected care services among low-income households and low-income veterans. We would expect to set aside up to \$100 million in total funding for this pilot program and each telehealth pilot project could receive up to \$5 million in funding to support broadband connectivity to low-income patients and increased capabilities for the health care provider. In the sections that follow, we discuss and seek comment on (1) the goals of the pilot program; (2) the structure of the program; and (3) how to measure the effectiveness of the program.

14. We also seek comment on our legal authority to establish a Connected Care pilot program. We seek comment in particular on whether creating the pilot program is consistent with the Commission's authority under the universal service provisions of the Communications Act. In enacting section 254, Congress identified a series of principles governing the Commission's duty to advance universal service, several of which appear to be consistent with the pilot program. These include the principles that: (1) "[q]uality services should be available at just, reasonable, and affordable rates"; (2) "[a]ccess to advanced telecommunications and information services should be provided in all regions of the nation"; (3) "[c]onsumers in all regions of the Nation including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including . . . advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas"; and (4) "health care providers . . . should have access to advanced telecommunications services as described in subsection (h) of this section."<sup>41</sup> Further, under section 254(h)(2), the Commission is authorized to establish competitively neutral rules "to enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunications and information services for all . . . health care providers . . ."<sup>42</sup> In defining the services supported by the universal service support mechanisms, Congress emphasized the "evolving" nature of telecommunications and exhorted the Commission to "tak[e] into account advances in

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<sup>37</sup> *Rural Health Care Support Mechanism*, Order, 21 FCC Rcd 11111, para. 1 (2006).

<sup>38</sup> *Rural Health Care Support Mechanism*, 21 FCC Rcd 11112, para. 3.

<sup>39</sup> *Lifeline and Link Up Reform and Modernization et al.*, Report and Order and Further Notice of Proposed Rulemaking, 27 FCC Rcd 6656, 6795, para. 323 (2012).

<sup>40</sup> *Lifeline and Link Up Reform and Modernization et al.*, Report and Order and Further Notice of Proposed Rulemaking, 27 FCC Rcd 6656, 6801, para. 340 (2012).

<sup>41</sup> 47 U.S.C. § 254(b)(1), (2), (3), (6).

<sup>42</sup> 47 U.S.C. § 254(h)(2)(A). The Commission cited to this section as its legal authority to establish the 2006 Rural Health Care Pilot Program. *Rural Health Care Support Mechanism*, Order, 21 FCC Rcd 11111, 1114, 1115-16, paras.1, 10-11, 14-15.

telecommunications and information technologies and services.”<sup>43</sup> Congress further gave the Commission authority to “designate additional services” eligible for support for health care providers.<sup>44</sup>

15. In light of the Commission’s discretion in implementing universal service policies,<sup>45</sup> and Congress’ directive to take into account technological innovations in advancing universal service, we believe that the Commission is authorized under section 254 to establish a discrete, time-limited pilot program focused on exploring how USF support can be used to promote low-income Americans’ access to broadband-enabled telehealth services and applications.<sup>46</sup> We seek comment on this analysis. Are there additional provisions in the Act that support our authority to establish this pilot program? How should we structure the pilot program in light of our statutory authority?

#### **A. Goals of the Pilot Program**

16. Before launching any pilot program, we believe it is imperative to define our goals and objectives. We seek comment on the specific goals discussed below and any others that commenters believe we should consider.

17. *Improving Health Outcomes Through Broadband Access.* We first seek comment on the goal of using broadband to increase access to telehealth services and thereby improve health outcomes among participating low-income patients. How can the USF best support this goal? The Commission’s existing work on telehealth has produced maps that show the correlation between low-income communities, poor health outcomes, and lack of broadband access.<sup>47</sup> We thus view the Connected Care Pilot Program as a way to help address this identified issue.

18. We also seek comment on the role of broadband in improving health outcomes generally. To that end, we ask that commenters provide data regarding the current state of the remote telehealth and connected care market, specifically data on the types of telehealth services that use broadband connections, the bandwidth required for such services, and any relevant market trends. Have certain types of remote telehealth services been shown to produce better health outcomes than others? What types of benefits can consumers derive through increased access to these broadband-enabled telehealth applications? What are the costs associated with increased use of these telehealth services?

19. We further seek comment on how the pilot program can improve health outcomes by focusing on particular demographics or geographical areas. Are there particular populations or demographic groups that are more likely to benefit from increased access to and use of broadband-enabled telehealth services? Do low-income households in certain areas of the country or certain segments of the population experience greater challenges in accessing high-quality health care and achieving good health care outcomes than other groups?

20. Additionally, should the pilot program focus on particular health conditions, areas of medicine, or health crises? We seek comment on these and any other issues commenters believe are relevant in determining how to most effectively allocate the pilot program’s resources.

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<sup>43</sup> 47 U.S.C. § 254(c)(1).

<sup>44</sup> 47 U.S.C. § 254(c)(3). The Commission has determined that “additional services” are not restricted to telecommunications services and that subsection (h) may support Internet access. *See Texas Office of Public Utility Counsel v. FCC*, 183 F.3d 393, 441-43 (5th Cir. 1999).

<sup>45</sup> *See Texas Office of Public Utility Counsel v. FCC*, *id.* at 411.

<sup>46</sup> The Commission previously relied on its authority under section 254(c)(1) and the universal service principles in section 254(b) to establish the “discrete, time-limited” 2012 Lifeline broadband pilot program to determine whether the Lifeline program could be used to increase broadband adoption among low-income consumers. *2012 Lifeline Order*, [FCC 12-11], paras. 328-330.

<sup>47</sup> FCC, Mapping Broadband Health in America, <https://www.fcc.gov/health/maps> (last visited July 5, 2018).

21. *Supporting the Trend Towards Connected Care Everywhere.* As discussed above, there is a movement in telehealth beyond connectivity within and between physical health care centers and towards a connected care everywhere model. This trend has shown promising results for patients, communities, and the health care system. We therefore seek comment on using the pilot program to support the current movement towards direct-to-consumer health care, and ensure that low-income Americans can realize the benefits of this trend. What are the costs and benefits of the shift towards ubiquitous connected care?

22. *Reducing Health Care Costs for Patients, Facilities, and the Health Care System.* We seek comment on using the pilot program to help reduce the rising health care costs faced by consumers and health care facilities.<sup>48</sup> How can the pilot program improve health care affordability for low-income Americans and counteract the burdens of increasing out-of-pocket expenses, including transportation costs for rural and remote patients?<sup>49</sup> How can the pilot program reduce health care expenditures for participating health care providers and their qualifying patients? Can support for telehealth services for low-income patients create savings for Medicaid, and in turn, lessen burdens for taxpayers? To the extent that remote patient monitoring and connected care technologies more generally continue to reduce the overall costs of healthcare in the country, what steps can be taken to incentivize payors in the healthcare system to more fully support the long-term deployment and use of these technologies?

23. *Determining How Universal Service Funding Can Positively Impact Existing Telehealth Initiatives.* We seek to ensure that the pilot program enhances existing telehealth initiatives by the Commission and other federal agencies and we seek comment on this goal. As discussed above, the Commission has assisted with the expansion of health care connectivity in rural and underserved areas through other initiatives such as the Rural Health Care Program and the Connect2Health Task Force. How can the Connected Care Pilot Program act in concert with these existing initiatives? How can we structure the program to avoid duplication of other Commission initiatives and to ensure we test new and novel concepts focused on telehealth delivery and applications?

24. Other federal agencies have also established programs to support telehealth. For example, the Veterans Administration's Home Telehealth program collects information about symptoms and vital signs from the patient's home.<sup>50</sup> The Department of Health and Human Services (HHS) also has various initiatives to promote telehealth, including initiatives focused on providing telehealth services for rural, veterans, and Tribal populations.<sup>51</sup> We seek comment on methods to use or leverage these and other government-run telehealth programs. Which programs have been the most successful at improving health care outcomes? Are there aspects of other programs we should seek to emulate in the pilot program? We also seek comment on how the pilot program can complement existing telehealth initiatives by these

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<sup>48</sup> See Centers for Medicare and Medicaid Services, *supra* note 23.

<sup>49</sup> Centers for Medicare and Medicaid Services, NHE Fact Sheet (Apr.17, 2018), <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html>.

<sup>50</sup> U.S. Department of Veterans Affairs, Home Telehealth Services, <https://www.telehealth.va.gov/ccht/index.asp> (last visited June 7, 2018).

<sup>51</sup> HHS has a number of grant programs focused on telehealth, including the Telehealth Network Grant Program, Telehealth Resource Center Grant Program, Evidence-Based Tele-Emergency Network Grant Program, Rural Veterans Health Access Program, Licensure Portability Grant Program, and the Rural Child Poverty Telehealth Network Grant Program. See Department of Health and Human Services, Rural Health Funding Opportunities, <https://www.hrsa.gov/ruralhealth/programopportunities/fundingopportunities/default.aspx> (last visited June 19, 2018). The Indian Health Service has also launched telehealth programs. See, e.g., Indian Health Service, Indian Health Service launches telehealth program to expand health care access for Native veterans, Dean M. Seyler, Director Portland Area Indian Health Service, Indian Health Service Launches Telehealth Program to Expand Health Care Access for Native Veterans, (Nov. 10, 2016), <https://www.ihs.gov/newsroom/ihs-blog/november2016/indian-health-service-launches-telehealth-program-to-expand-health-care-access-for-native-veterans/>.

federal agencies. How can we avoid duplicating existing programs? Should the Commission coordinate with HHS or other federal agencies in administering and developing the pilot program?

25. *Increasing Broadband Deployment in Unserved and Underserved Areas.* Over the past year and-a-half, the Commission has taken numerous steps to accelerate the deployment of broadband services, remove regulatory barriers to infrastructure deployment, and promote competition in the broadband market.<sup>52</sup> The *2018 Broadband Deployment Report* shows that as of year-end 2016, there have been significant improvements in access to broadband across urban, rural, and Tribal areas.<sup>53</sup> However, broadband deployment in rural and Tribal areas continues to lag behind other parts of the country, and certain non-rural areas are unserved or underserved.<sup>54</sup> We remain committed to promoting further deployment progress and closing this digital divide. We thus seek comment on using the pilot program to promote broadband deployment to unserved and underserved areas.

26. *Increasing Adoption of Broadband Among Low-Income Households.* The Commission's *2018 Broadband Deployment Report* shows year-to-year increases in broadband adoption rates across the country, including in rural areas and on Tribal lands.<sup>55</sup> Adoption rates remain lower among low-income, rural, and Tribal populations, however, compared to other segments of the population.<sup>56</sup> We therefore seek comment on whether another goal of our pilot program should be increasing adoption of broadband in low-income households by making broadband service more affordable.

27. To the extent the pilot program would additionally increase adoption of broadband service among non-adopters, we believe program participants could also gain from the many other benefits of broadband subscription, and that these benefits should be accounted for in evaluating the pilot program. We seek comment on this view. The *2012 Lifeline Order* noted that one of the benefits of increasing the availability of broadband for low-income Americans is that of the network effects of widespread subscribership.<sup>57</sup> How could this pilot program help to bridge the digital divide? What externalities might the pilot program produce for the economy and society?

## **B. Structure of the Program**

28. We seek comment on designing the Connected Care Pilot Program to fund a limited number of projects that would promote the use of broadband-enabled telehealth services to low-income consumers, including low-income veterans, with a focus on such services delivered to patients beyond the doors of brick-and-mortar health care facilities. More specifically, we could permit up to 20 health care providers that serve primarily low-income populations to partner with at least one facilities-based broadband service provider and apply for a maximum of \$5 million in universal service funding for supported services that would be used to deliver these connected care services to eligible low-income patients. We seek comment on this structure generally and on a number of specifics regarding how to design the pilot program, including (1) the size of the program budget; (2) the application process and the types of broadband-enabled telehealth projects that should be selected; (3) eligibility criteria for participating health care providers, broadband service providers, and low-income consumers; (4) the

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<sup>52</sup> *2018 Broadband Deployment Report*, 33 FCC Rcd at 1661-62, para. 5.

<sup>53</sup> *2018 Broadband Deployment Report*, 33 FCC Rcd at 1681-91, paras. 50-61.

<sup>54</sup> *See id.*

<sup>55</sup> *See Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 33 FCC Rcd 1660, 1698-1702, paras. 72-78 (2018) (*2018 Broadband Deployment Report*).

<sup>56</sup> *Id.*

<sup>57</sup> *Lifeline and Link Up Reform and Modernization*, 27 FCC Rcd 6656, 6665-67, paras. 16-18 (2012) (*2012 Lifeline Order*).

broadband services and other communications services and equipment that should be supported; (5) the number of projects that should be selected, the amount of support, and how it should be disbursed; and (6) the duration of the pilot program. We also seek comment below on any federal, state, or local regulatory barriers to telemedicine that we should consider, on how to ensure that pilot program funds are used responsibly, and on how to ensure that patient information is protected. Finally, we seek comment on how lessons learned from past Commission pilot programs should inform the structure of this pilot program.

### **1. Budget**

29. We seek comment on the budget for this program. Subject to the careful identification of appropriate pilot projects, we seek comment on directing USAC to set aside \$100 million in funding for the pilot program. Is a \$100 million budget adequate to conduct robust analysis of the effectiveness of directing universal service support to promoting the use of connected care services by low-income patients?

30. What other factors should we consider when establishing the budget for this pilot program? In particular, while any increase in USF expenditures must be paid for through contributions from ratepayers, we recognize at the same time that overall spending in the Lifeline program has declined recently.<sup>58</sup> In light of this, what impact would a \$100 million budget have on the USF contribution factor and would any additional costs borne by ratepayers be outweighed by the potential benefits of the pilot program? Further, we note that the pilot program would target benefits to low-income consumers.

### **2. Application Process and Types of Pilot Projects to Be Supported**

31. We seek comment on the application process for participants in the pilot program. We expect that an eligible health care provider would need to submit information such as: (1) a description of its proposed pilot project, including how the project will enable care to be delivered directly to patients beyond the walls of physical health care centers; (2) a description of the low-income population that would benefit from the project; (3) a description of how the health care provider will evaluate the results of its proposed pilot project (e.g., improved health outcomes, cost savings, etc.); (4) the name of the broadband service provider(s) with which they would partner; and (5) the supported services that partner would provide. What additional types of information should applicants be required to submit and how much detail should they be required to supply regarding their proposed pilot projects and the supported services for which they are seeking funding? We seek comment on these and any other issues that commenters believe we should consider in developing an application process for the pilot program.

32. We also seek comment on the criteria for selecting the types of connected care pilot projects that should be supported through the pilot program. Should we select pilot projects based on whether they address a specific health issue or demographic? For example, should proposed projects focus on opioid addiction, diabetes, stroke, or post-traumatic stress disorder? Are there specific patient groups among low-income Americans that proposed projects should serve, such as veterans, residents of Tribal lands, expectant mothers, the elderly, or disabled Americans?

33. Should we give priority to certain projects over others, and if so, on what basis? For example, should we prioritize applications in which the partnering broadband service provider is willing to contribute the end-user equipment or other components needed to ensure a successful project? Or should we prioritize projects proposing new facilities-based deployments or upgrades to existing facilities, or ensure that at least one pilot project involving new or upgraded deployment is included in the pilot program? Would prioritizing or requiring a facilities-based component promote broadband

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<sup>58</sup> Between 2012 and 2016, Lifeline disbursements decreased by almost \$616 million or roughly 29 percent. See *Federal-State Joint Board on Universal Service*, 2017 Universal Service Monitoring Report, at 24, Table 2.2 (2017) (rel. Apr. 13, 2018), <https://www.fcc.gov/general/federal-state-joint-board-monitoring-reports>.

deployment in unserved and underserved areas? How should we weight the importance of deployment in selecting pilot projects? To the extent that we prioritize projects with a deployment element, how should we prevent overbuilding of other USF recipients and beneficiaries of broadband deployment assistance financing from the Rural Utilities Service?<sup>59</sup>

### 3. Eligible Health Care Providers

34. We seek comment on how to determine which health care providers should be permitted to participate in the pilot program. As a threshold criterion for eligibility, we seek comment on limiting the pilot program to health care providers that predominantly serve low-income patients, such as clinics or hospitals serving patients eligible for Medicaid or veterans receiving cost-free medical care based on income. We seek comment on this standard and appropriate proxies for identifying clinics or hospitals serving these specific low-income patient populations. For example, should we limit participation to health care providers serving a certain percentage of Medicaid-eligible patients, and if so, what should that percentage be? Are there other or additional proxies we should use? Alternatively, should we allow a health care provider to participate in the pilot program—regardless of how many low-income patients it serves—so long as it limits participation in its pilot project to low-income patients?

35. Should we consider location as a factor in selecting participating clinics and hospitals? If so, should the pilot program prioritize participating clinics and hospitals in rural areas? Or should it seek geographic diversity by including clinics in both urban and rural locations? How should “rural” and “urban” be defined for purposes of the pilot program? Should the pilot program include at least one partnership involving clinics or hospitals located on Tribal lands?

36. We seek comment on any additional criteria that participating clinics or hospitals should be required to meet and how we should define that criteria. For example, should we limit the pilot program to clinics and hospitals with established telehealth programs, and if so, how should we define that criterion? Or should we consider factors such as the average income, population density, and/or broadband adoption rate in the area where the clinic or hospital is located? If so, what would be the appropriate geographic level (e.g., municipality, county, etc.) for determining average income, average population density, and/or average broadband adoption rate?

### 4. Partnering with Facilities-Based Eligible Telecommunications Carriers

37. We seek comment on the eligibility criteria for broadband service providers to participate in the pilot program. Specifically, we seek comment on requiring broadband service providers participating in the pilot program to be facilities-based eligible telecommunications carriers (ETCs) designated pursuant to section 214 of the Act<sup>60</sup> in order to participate. We believe that this approach would be consistent with the Lifeline program, which also targets benefits toward low-income consumers and limits service provider participation to ETCs.<sup>61</sup> Further, we believe that participants should be facilities-based ETCs given that one of the goals of the pilot is to increase broadband deployment in unserved and underserved areas. We seek comment on these views. Should we instead permit participation in the pilot program by facilities-based broadband service providers that are not ETCs, and if so, why? Are there other criteria we should consider in determining which broadband service providers should be eligible to participate?

38. We also seek comment on requiring eligible health care providers to partner with at least one facilities-based ETC on their proposed telehealth pilot projects before submitting their applications for

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<sup>59</sup> See Lennard G. Kruger, Broadband Loan and Grant Programs in the USDA’s Rural Utilities Service, Congressional Research Service Report at 9, 18 (Apr. 20, 2018), <https://fas.org/sgp/crs/misc/RL33816.pdf>.

<sup>60</sup> 47 U.S.C. § 214(e).

<sup>61</sup> 47 CFR § 54.201(a)(1).

funding. We believe that facilities-based ETCs sharing their expertise on the types of broadband offerings needed for the clinic or hospital's proposed pilot project could result in more robust proposals for funding and more efficient use of pilot program resources. We seek comment on this view and on any potential alternatives to this requirement. Additionally, we seek comment on any implementation issues with respect to this requirement. For example, would eligible health care providers need to contract with a partnering broadband service provider before submitting their applications for funding?

## 5. Eligible Low-Income Subscribers

39. We seek comment on requiring participating health care providers to use the pilot program benefits exclusively for low-income patients. Specifically, we seek comment on limiting the participating health care providers' use of the pilot program funding to Medicaid-eligible patients, as well as veterans who qualify based on income for cost-free health care benefits through the Department of Veterans Affairs (VA).<sup>62</sup> We believe that focusing on Medicaid patients and veterans who qualify for cost-free health care through the VA based on income would ensure that pilot program funds are appropriately targeted to low-income individuals, while also relieving participating hospitals and clinics of the burdens that would otherwise be associated with determining whether individual patients receiving broadband services funded by the pilot program qualify as low-income. We seek comment on this view and on any alternative requirements.

40. Are there additional eligibility criteria that will ensure that program funding is allocated to patients most in need of support to access telehealth services? For example, should we limit participation to qualifying low-income Americans who do not subscribe to broadband service, or only remain intermittently subscribed? Should the pilot program exclude participants who already have broadband or would purchase it in the absence of a subsidy?<sup>63</sup> Alternatively, should the pilot program's benefits flow to low-income households that have already adopted broadband service but need support for higher speed connectivity to access bandwidth-intensive telehealth services?<sup>64</sup> Which of these approaches would best promote the goals of the pilot program?

41. We also seek comment on how the pilot program should fund and report on consumers who meet our subscriber eligibility criteria when enrolling in the pilot but subsequently become ineligible for Medicaid or cost-free VA health care benefits or no longer use the participating clinic or hospital's services. How would the Commission know whether a qualifying low-income patient is continuing to use the broadband service for telehealth services or applications? Should the pilot program permit participating health care providers to sign up additional low-income subscribers at any point during the pilot program, or should enrollment of low-income subscribers be cut off at some specific point after the launch of the pilot program?

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<sup>62</sup> Department of Veterans Affairs, Enhanced Eligibility, <https://www.va.gov/healthbenefits/apply/veterans.asp> (last visited June 24, 2018) (stating "[p]revious years' household income is below VA's National Income or Geographical-Adjusted Thresholds" is one criteria for veterans to qualify for qualifying for no-cost health care through the VA); Department of Veterans Affairs, Annual Income Limits—Health Benefits, <http://nationalincomelimits.vaftl.us/LegacyVAThresholds/Index?FiscalYear=2018> (last visited June 24, 2018).

<sup>63</sup> See, e.g., John W. Mayo et al., *Toward a More Efficient and Effective Lifeline Program*, Georgetown Center for Business and Public Policy Economic Policy Vignette 2015-8-31, at 4 (Aug. 2015), <https://cbpp.georgetown.edu/sites/cbpp.georgetown.edu/files/Mayo-Wallsten-Ukhaneva-toward-more-efficient-lifeline-program.pdf>.

<sup>64</sup> See The U.S. Chamber of Commerce, *The Impact of Broadband on Telemedicine* at 20 (2009), <https://telehealth.org/sites/default/files/BroadbandandTelemedicine.pdf>.

## 6. Supported Services

42. *Broadband Service.* We anticipate that the pilot program would provide funding for: (1) broadband connectivity that eligible low-income patients of participating clinics and hospitals would use to receive connected care services (as well as for other uses); and (2) broadband connectivity that the participating clinic or hospital needs to conduct its proposed connected care pilot project. We seek comment on the modalities of broadband service that the pilot program should support. We believe the pilot program should support both fixed and mobile broadband service and we seek comment on this view. We also believe that each participating hospital and clinic, working in partnership with facilities-based ETCs, would determine the modality of service received by the qualifying patients of the participating clinics and hospitals. We seek comment on this view.

43. In the pilot program, we expect participating ETCs to work with the participating clinics or hospitals to ensure the supported broadband is sufficient for the health care uses for which it is intended. Many traditional broadband-enabled telehealth services require high bandwidths and low latency,<sup>65</sup> but this may not be the case for newer, connected care services. Should the Commission adopt minimum service standards for the pilot program? Should those minimum service standards include minimum service speeds? Should the Commission consider service and device needs for synchronous applications (such as live video-conferencing to the patient's home) and asynchronous services (such as store-and-forward data transmittals), or both?

44. Should the pilot program require specific service reliability commitments, to prevent patients of the participating clinics and hospitals from losing access to necessary health care services during the pilot program? If so, what would be an appropriate service reliability commitment? How could we ensure that partnering broadband service providers are meeting their service reliability commitments? Should the pilot program include a mechanism for participating health care providers to report concerns about the broadband service provided through the program, and what should that mechanism be? Should the pilot program also include a mechanism for qualifying patients of participating clinics and hospitals to report broadband service concerns?

45. Further, we seek comment on whether the pilot program should fund connectivity for emergency medical service facilities, such as ambulances. Such facilities are currently ineligible for support in the Rural Health Care Program.<sup>66</sup> However, EMS-based telehealth may help triage patients more quickly and effectively and lead to cost savings for local governments.<sup>67</sup>

46. *Equipment.* We next ask whether the pilot program should support equipment necessary for the effective use of the broadband service, and to what extent such support is permitted under our Section 254 authority. Should the pilot program fund routers and servers at the clinic or hospital to assist with the additional telehealth needs? We note that the Healthcare Connect Fund (HCF) provides support for “network equipment necessary to make a broadband service functional in conjunction with providing support for the broadband service” and for consortium applicants, the HCF also provides support for “equipment necessary to manage, control, or maintain a broadband service or a dedicated healthcare

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<sup>65</sup> *Id.*

<sup>66</sup> See Universal Service Administrative Co., Rural Healthcare, <https://www.usac.org/rhcp/participants/eligibility.aspx> (last visited July 10, 2018).

<sup>67</sup> See, e.g., Neil Versel, Houston EMS gets to ‘mobile integrated healthcare’ with telemedicine triage, MedCityNews (Feb. 22, 2017), <https://medcitynews.com/2017/02/houston-ems-telemedicine-triage/> (noting a seven percent reduction in the number of people transported to an emergency department after an EMS dispatch, as well as annual cost savings for the city of Houston of \$928,000, based on emergency department visits avoided).

broadband network.”<sup>68</sup> Should the Connected Care pilot program provide similar support? Why or why not?

47. We also seek comment on providing pilot program support for end-user devices. Should the pilot program fund equipment used to provide connected care services, such as remote patient monitoring equipment? What about tablets or smartphones that could be used for the telehealth applications but would also enable access to many other non-telehealth applications? The Lifeline program, which is targeted toward low-income consumers, does not support consumer equipment or devices.<sup>69</sup> Similarly, the HCF does not provide funding for equipment that is not directly associated with making broadband services functional (such as computers, end-user wireless devices, smartphones, tablets, and video/audio/web conferencing equipment or services).<sup>70</sup> Should we allow funding of end-user equipment or devices during this pilot program, and if so, what would be the statutory authority?

48. *Applications.* Should the pilot program fund mobile health applications selected by the participating health care providers for use by their participating patients? While the Lifeline and Rural Health Care programs fund supported services for the respective programs, they do not fund applications that run over supported services.<sup>71</sup> Would the funding of telehealth applications for purposes of this pilot program be consistent with our statutory authority under section 254?

## 7. Number of Pilot Projects Selected, Support Amount, and Disbursement

49. We seek comment on allowing each participating partnership to apply for a set amount of funding through the pilot program. To this end, how many projects should we select for participation in the pilot program and what should be the total funding cap on each selected project, assuming a total program budget of \$100 million? We seek comment in particular on selecting a limited number of projects, such as a maximum of 20 projects. Would this number allow us to adequately explore the use of USF funding to promote connected care services among low-income households and low-income veterans? We also seek comment on whether funding should be established at a set monthly amount per low-income household, similar to the funding method used in the Lifeline program. Alternatively, should we disburse funding in greater amounts than a monthly per-household amount to better incent the development of robust connected care pilot projects? What should be the funding cap on selected projects? Would \$5 million be an appropriate cap? We seek comment on whether that amount would sufficiently cover the cost of relevant projects. For example, researchers have found that the average cost of remote patient monitoring (including equipment, servicing, and monitoring) ranges from approximately \$275 to \$8,000 per patient per year, with those costs falling.<sup>72</sup> Based on these estimates, a remote patient monitoring pilot project with 100 patient participants would cost no more than \$2.4 million over three years. Or should we allow funding to be disbursed in even larger amounts, such as a maximum of \$20 million per project, to better incent deployment or meaningful upgrades to facilities used to provide the needed broadband service?

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<sup>68</sup> *Rural Health Care Mechanism*, Report and Order, 27 FCC Rcd 16678, 16751, para. 157 (2012); FCC, Healthcare Connect Fund, Frequently Asked Questions, No. 25-What Types of Equipment are Eligible in Healthcare Connect, <https://www.fcc.gov/general/healthcare-connect-fund-frequently-asked-questions#Q25> (last visited June 24, 2018).

<sup>69</sup> See, e.g., *Lifeline and Link Up Reform and Modernization*, Third Report and Order, Further Report and Order, and Order on Reconsideration, 31 FCC Rcd 3962, 4005, para. 125 (declining to depart from the Commission’s longstanding decision not to provide Lifeline support for customer equipment).

<sup>70</sup> *Rural Health Care Mechanism*, Report and Order, 27 FCC Rcd at 16754-55, para. 167 (2012); FCC, Healthcare Connect Fund, Frequently Asked Questions, No. 25-What Types of Equipment are Eligible in Healthcare Connect, <https://www.fcc.gov/general/healthcare-connect-fund-frequently-asked-questions#Q25> (last visited June 24, 2018).

<sup>71</sup> See 47 CFR §§ 54.400(n), 54.403(a)(1), (3), 54.639(a).

<sup>72</sup> Rheuban & Krupinski, *supra* note 13 at 141.

50. We also seek comment on the most effective and efficient method for distributing pilot program funding and our statutory authority for doing so. Should we consider existing USF programs as models? In the Lifeline program, for example, qualifying consumers receive discounts on supported services with the USF funding going directly to the eligible telecommunications carriers based on reimbursement claims for service provided to qualifying Lifeline subscribers.<sup>73</sup> In the Rural Health Care program, qualifying health care providers receive discounts on eligible services and the reimbursement goes to the service provider.<sup>74</sup> In the E-rate program, eligible schools and libraries receive discounts for eligible services,<sup>75</sup> and may choose to either be reimbursed directly by USAC for services paid in full to the service provider, or receive discounted services from the service provider with the service provider receiving the reimbursement.<sup>76</sup> What disbursement model would best suit the goals of the pilot program? Should funds be disbursed directly to the participating health care providers or to the participating broadband service providers? Or should the discounts flow directly to the qualifying patients of participating clinics or hospitals? Does our statutory authority permit us to provide funding to clinics or hospitals? What are the costs and benefits to these various approaches?

## 8. Duration

51. We seek comment on the duration of the pilot program and whether we should adopt a two- or three-year funding period. Would such a timeframe be sufficient to obtain meaningful data and promote long term adoption of broadband-enabled telehealth services? Is two or three years of funding long enough to observe metrics to evaluate the pilot program's performance? Should we consider a longer funding period, particularly given our objective to encourage network deployment and the amount of time such deployment can take? We expect to include a time period before the pilot program commences to allow for the formation and organization of partnerships and a period for enrollment. Similarly, we expect the program to be followed by an evaluation period. We seek comment on this approach. Would providing a six-month ramp-up period and a six-month wind-down period be sufficient?

## 9. Compliance with Federal, State, and Local Laws

52. We seek comment on any federal, state, or local regulatory barriers to telemedicine that we should consider in designing the pilot program. For example, state medical licensing boards generally restrict cross-state practice and often prevent telehealth providers from treating patients across state lines.<sup>77</sup> To what extent would such restrictions preclude pilot projects involving an interstate telehealth component? We also seek comment on whether intrastate restrictions on telehealth services may limit certain types of pilot projects. For instance, certain states limit or prohibit Medicaid reimbursement for telemedicine services and others prohibit drug prescriptions in the absence of an in-person exam.<sup>78</sup> Are there additional state law issues that we should consider in developing the pilot program and how should we address them? How should we ensure that participating health care providers comply with applicable federal, state, and local laws? For example, should we require them to certify such compliance?

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<sup>73</sup> 47 U.S.C. § 214(e), 47 CFR §§ 54.403(a)(1), 54.407(a)

<sup>74</sup> 47 CFR § 54.602.

<sup>75</sup> 47 CFR §§ 54.501-54.505.

<sup>76</sup> Universal Service Administrative Co., Step 5 Invoicing, <https://www.usac.org/sl/service-providers/step05/default.aspx> (last visited June 25, 2018).

<sup>77</sup> See Shirley V. Svorny, *Liberating Telemedicine: Options to Eliminate the State Licensing Roadblock*, Cato Institute Policy Analysis No. 826, at 6 (Nov. 2017), <https://object.cato.org/sites/cato.org/files/pubs/pdf/pa-826.pdf>.

<sup>78</sup> *Id.* at 5.

## 10. Ensuring the Effective, Fiscally Responsible Use of Pilot Program Funds

53. We are mindful of the need to ensure that pilot program funds are spent wisely and appropriately. How can the Commission ensure that pilot program funding is only used for its intended purposes? Should participating clinics and hospitals and/or ETCs be required to report certain data to this end? For example, should we require participating health care providers and/or ETCs to report aggregated data on whether participating patients are using the supported broadband service to access telehealth applications and services during the pilot program? Do we have the authority to impose such reporting obligations on participating health care providers if they do not receive universal service support directly? Should participating health care providers and/or ETCs be subject to audits at the midpoint or end of the pilot program to ensure the pilot program funds are only being used for their intended purposes?

54. How can the Commission ensure that only eligible low-income patients received the pilot program's benefits? For example, should we require participating health care providers and/or ETCs to certify throughout the pilot program that they are providing supported services to qualified, participating patients? What other measures should the Commission take to maintain control over billing, collection, and disbursement of pilot program funds and to protect against waste, fraud, and abuse?

## 11. Protecting Patient Information

55. Patient health information is among the most sensitive type of data. We therefore seek comment on how the Commission would obtain data on health outcomes while safeguarding patient information, and complying with medical information privacy laws. For example, rules issued under the authority of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) regulate the use and disclosure of "protected health information" by covered entities.<sup>79</sup> How can health care providers gather comprehensive and informative data on patients participating in pilot projects while remaining HIPAA-compliant? Should the Commission adopt requirements to protect sensitive information or limit use of information collected during the pilot program? Are there measures for de-identifying or aggregating patient information that participating health care providers should use? Should patients participating in the program be required to authorize disclosure of their protected health information?

56. How can we ensure that participating health care providers and their partner broadband providers comply with cybersecurity best practices<sup>80</sup> and minimize data breach risks? Are there levels of cybersecurity that participating clinics and hospitals and their partner ETCs should have in place to be eligible for the pilot program?

## 12. Lessons Learned from Past Pilot Programs

57. We seek comment on specific takeaways from the 2006 Rural Health Care Pilot Program and the 2012 Lifeline Pilot Program that should inform how we structure this pilot program. In the wake of those programs, staff from the Wireline Competition Bureau released reports regarding key lessons learned.<sup>81</sup> Are there particular lessons that are relevant here? Are there aspects of the design of those pilot programs, such as the size, amount, or types of projects funded, eligibility criteria, application process, support amount, disbursement process, or reporting requirements, that we should incorporate or avoid here?

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<sup>79</sup> 45 CFR §§ 164.102-534 (HHS "Privacy Rule").

<sup>80</sup> In the case of electronic protected health information, these best practices would include the security measures required in the HHS "Security Rule." 45 CFR §§ 164.302-318.

<sup>81</sup> See generally, *Wireline Competition Bureau Evaluation of Rural Health Care Pilot Program Staff Report*, 27 FCC Rcd 9387 (2012); *Wireline Competition Bureau Low-Income Broadband Pilot Program Staff Report*, 30 FCC Rcd 4960 (2015).

### C. Measuring Effectiveness of the Program

58. Past Commission pilot programs were designed to collect detailed data and enable statistically sound analysis of the viability of new funding initiatives to improve access to broadband services. Similarly, here, we expect that the Connected Care pilot program would measure the program's effectiveness in improving health outcomes for low-income consumers through increased access to broadband-enabled telehealth services as well as in reaching the other program goals discussed above. We seek comment on this expectation and on how best to measure and track the program's progress and success.

59. We seek comment specifically on the metrics discussed below and on methodologies for gathering reliable and comprehensive data. Were the data-gathering methods employed in past Commission pilot programs successful in obtaining informative data? Why or why not? Further, how can we obtain sufficient information to evaluate the performance of the pilot program while minimizing burdens on participating clinics and hospitals and their partner ETCs?

60. Which pilot program participants (i.e., health care providers and/or ETCs) should be responsible for reporting particular data to the Commission as a condition of participating in the program? Should the entity that is a direct recipient of USF funds through the pilot program ultimately be responsible for the required reporting? How often should required reports be submitted and in what format?

61. *Measuring Patient Health Outcomes and Behavior.* Since the fundamental goal of the pilot program is to improve health outcomes among low-income Americans through the use of expanded access to telehealth services, we seek to measure the effectiveness of the pilot program in promoting better health among qualifying patients. We seek comment on which metrics should be used to measure improvements in the health of qualifying patients. Possible metrics might include: reductions in emergency room or urgent care visits in a particular geographic area or among a certain class of patients; decreases in hospital admissions or re-admissions for a certain group; condition-specific outcomes such as reductions in premature births or acute incidents among sufferers of a chronic illness; and patient satisfaction as to health status. Higher level metrics include mortality rates among patients targeted by the program and measurements on quality-of-life. We seek comment on these and other health outcome metrics.

62. We also seek comment on evaluating patient behavior in response to the pilot projects, including effects on patient use of telehealth resources. How should such behavioral effects be measured? Examples might include compliance with medication instructions; compliance with self-monitoring instructions, such as checking glucose levels at recommended intervals; and attendance records for appointments, both remote and in-person. Participating health care providers could also track changes in their own behavior in response to patients' access to telehealth services, such as reductions in appointment wait times. We seek comment on these and any other relevant behavioral metrics.

63. For metrics on patient health outcomes and behavior, should we require the presence of control groups to compare pilot program beneficiaries to non-beneficiaries? Should the Commission partner with organizations or agencies with health care expertise to identify relevant metrics and/or appropriately analyze the reported data to ensure that the results are meaningful?

64. *Measuring Health Care Savings.* We seek comment on measuring the savings to patients, providers, and the health care system as a result of the pilot program. In a report on the 2012 Rural Health Care Pilot Program, the Wireline Competition Bureau summarized the cost savings that participating health care providers reported as a result of the pilot program funding.<sup>82</sup> For example, the

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<sup>82</sup> *Wireline Competition Bureau Evaluation of Rural Health Care Pilot Program Staff Report*, 27 FCC Rcd 9387, 9389, 9431-33, Executive Summary and paras. 72-73, (2012).

Palmetto State Providers Network in South Carolina reported savings of \$18 million in Medicaid costs over 18 months as a result of its tele-psychiatry program, which used a network built with up to \$8.3 million in funding from the Rural Healthcare Pilot Program.<sup>83</sup> We believe that a similar evaluation of the impact of the Connected Care pilot program on health care costs would be useful to measuring its success. We seek comment on this view and on specific metrics that could be used to assess the cost savings resulting from the pilot program. For example, should we collect data on participating health care providers' savings from fewer and/or shorter hospital stays, reductions in emergency hospital transports, or reductions in costs associated with traveling to patients? Additionally, should we measure health care-related savings for participating low-income patients as a result of the pilot projects, and if so, how? For example, should we collect data on participating patients cost savings from decreases in patient costs for hospitalizations or hospital transports, or savings in time and expenses associated with patient travel to doctors' offices?

65. *Measuring Enhancement to Existing Telehealth Initiatives.* We seek comment on tracking the pilot program's success in enhancing existing telehealth initiatives. How should we measure the pilot program's progress in complementing the Commission's Rural Health Care program and other telehealth initiatives? Are there efficient methods to measure the pilot program's impact on other federal telehealth programs or any state initiatives? How can we verify that the pilot program is not duplicating other government programs?

66. *Measuring Broadband Deployment.* We seek comment on measuring the pilot program's effects in promoting deployment of broadband in unserved and underserved areas. How would we quantify the program's performance in spurring broadband deployment in areas where pilot projects are located?

67. *Measuring Broadband Adoption.* We seek comment on measuring broadband adoption rates among low-income patients of clinics and hospitals participating in the pilot program. How would we quantify the program's success in convincing non-adopters to adopt broadband? Should we narrowly focus on adoption, or rather on the benefits adoption brings, such as improved scholastic performance of children of subsidized adopters, changes in employment status, or earnings, or even just a higher quality of life due to access to entertainment over broadband? Should the pilot program ask whether qualifying patients of the participating clinics and hospitals are using broadband for non-health purposes?

#### IV. PROCEDURAL MATTERS

68. *Ex Parte Presentations.*—The proceeding this Notice of Inquiry initiates shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission's *ex parte* rules.<sup>84</sup> Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. Memoranda must contain a summary of the substance of the *ex parte* presentation and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the

<sup>83</sup> *Wireline Competition Bureau Evaluation of Rural Health Care Pilot Program Staff Report*, 27 FCC Rcd 9387, 9389 (2012).

<sup>84</sup> 47 CFR §§ 1.1200 *et seq.*

memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with Section 1.1206(b) of the Rules.<sup>85</sup> In proceedings governed by Section 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable.pdf).<sup>86</sup> Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

69. *Comment Filing Procedures.*—Pursuant to Sections 1.415 and 1.419 of the Commission's rules,<sup>87</sup> interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS).<sup>88</sup>

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://apps.fcc.gov/ecfs/>

- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

- Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12<sup>th</sup> St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.

- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.

- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12<sup>th</sup> Street, SW, Washington DC 20554.

70. People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to [fcc504@fcc.gov](mailto:fcc504@fcc.gov) or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

71. Availability of Documents. Comments and reply comments will be publicly available online via ECFS.<sup>89</sup> These documents will also be available for public inspection during regular business hours in the FCC Reference Information Center, which is located in Room CY-A257 at FCC Headquarters, 445 12<sup>th</sup> Street, SW, Washington, DC 20554. The Reference Information Center is open to the public Monday

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<sup>85</sup> 47 CFR § 1.1206(b).

<sup>86</sup> 47 CFR § 1.49(f).

<sup>87</sup> See 47 CFR §§ 1.415, 1419.

<sup>88</sup> See Federal Communications Commission, Electronic Filing of Documents in Rulemaking Proceedings, 63 Fed. Reg. 24121 (May 1, 1998). Consistent with current practice, if we adopt the Section 73.215 proposal, we intend to rely on licensing records available in CDBS to determine the amount of time a "sub-maximum" station has been operating below class maximums.

<sup>89</sup> Documents will generally be available electronically in ASCII, Microsoft Word, and/or Adobe Acrobat.

through Thursday from 8:00 a.m. to 4:30 p.m. and Friday from 8:00 a.m. to 11:30 a.m.

72. Additional Information. For additional information on this proceeding, contact [Rashann.Duvall@fcc.gov](mailto:Rashann.Duvall@fcc.gov), (202) 418-1438, or [Arielle.Roth@fcc.gov](mailto:Arielle.Roth@fcc.gov), (202) 418-2859.

**V. ORDERING CLAUSES**

73. Accordingly, IT IS ORDERED, pursuant to the authority contained in Sections 1, 4(i), 4(j), 254 and 403 of the Communications Act of 1934, as amended, 47 U.S.C §§ 151, 154(i), 154(j), 254 and 403, that this Notice of Inquiry IS ADOPTED.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary