Ms. Marlene H. Dortch

Secretary

Federal Communications Commission

445 12th Street, SW

Washington, District of Columbia 20554

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

Dear Ms. Dortch:

On behalf of the American Heart Association (AHA), including the American Stroke Association (ASA) and over 30 million volunteers and supporters, we appreciate the opportunity to submit our comments in response to the Federal Communications Commission’s Notice of Inquiry regarding the proposed Connected Care Pilot Program to address the growing need for broadband connectivity that has the potential to extend healthcare access in underserved areas.

The Commission will play an integral role in closing the “digital divide,” and the AHA is committed to assisting in this effort. As the Commission has noted, more than 320 million people in the United States could require health care services at any time. About 20% of the US population—more than 50 million people—live in rural areas, but only 9% of the nation's physicians practice in rural communities.[[1]](#footnote-1) Telehealth and remote patient monitoring technologies provide the ability to save countless American lives while lowering healthcare costs. As such, the crucial role of the healthcare sector requires that improvements be made to America’s critical infrastructure to support the use of these technologies. This includes supporting the deployment of reliable and robust broadband infrastructure and taking measures to give providers the ability to use telehealth and remote patient monitoring technologies throughout the continuum of care. A strong and growing body of evidence identifies telehealth and remote patient monitoring as cornerstones of advanced healthcare systems, particularly with respect to cardiovascular disease in rural parts of the country.[[2]](#footnote-2),[[3]](#footnote-3)

Eliminating broadband “dead zones” is normally not a priority when it comes to improving health outcomes, reducing inequities, and lowering health-related costs. But it is a necessary obstacle to negotiate for procuring, implementing, and using a broad swathe of telehealth and remote patient monitoring technologies that can extend quality healthcare in areas where brick-and-mortar healthcare facilities are few and far between. And in many places, broadband remains too expensive, unreliable, or simply not available at the speeds required to enable innovations in care. This “connectivity gap” remains an important obstacle to achieving better care in rural areas.

***Improving Health Outcomes Through Broadband Access****.*

The demand for telehealth is skyrocketing. The total addressable market for non-emergency telehealth visits in the United States is estimated at 400+ million, approximately one-third of the 1.25 billion annual [U.S. ambulatory care visits](https://www.fool.com/investing/2017/06/21/how-teladoc-hopes-to-tackle-a-29-billion-prize.aspx).[[4]](#footnote-4) In 2016, there were an estimated [1.25 million telehealth consultations](http://hub.americantelemed.org/ata2016new/about/aboutata2016).[[5]](#footnote-5) Over the next decade, the aging American population is expected to place [increased demands](https://www.theatlantic.com/health/archive/2016/02/nursing-shortage/459741/) on the U.S. healthcare system.[[6]](#footnote-6)

This demand has extended to Millennials. 60% of millennials support the use of telehealth to [replace in-office visits.](http://medcitynews.com/2015/02/salesforce-survey-millennials-want-telehealth-mobile-apps/)[[7]](#footnote-7)  A 2015 survey, found that just [43% of millennials](http://www.beckershospitalreview.com/hospital-physician-relationships/more-than-50-of-millennials-weigh-convenience-cost-against-traditional-primary-care.html) were likely to visit a primary care physician for non-emergency treatment, as opposed to seeking a more convenient option.[[8]](#footnote-8)

In 2016, the OECD estimates the U.S. spent [17.2% of GDP on healthcare costs](http://stats.oecd.org/Index.aspx?DataSetCode=SHA), the highest of any nation.[[9]](#footnote-9) The U.S. Center for Medicare and Medicaid Services (CMS) estimates that, with an aging population, total U.S. healthcare spending will [increase by 5.8% per year](https://www.cms.gov/Newsroom/MediaReleaseDatabase/Press-releases/2017-Press-releases-items/2017-02-15-2.html) between 2018 and 2025, and constitute 19.9% of U.S. GDP in 2025.[[10]](#footnote-10)

According to a [government survey](http://www.fiercehealthcare.com/practices/many-americans-don-t-have-a-primary-care-doctor), 28% of men and 17% of women do not have a primary care physician.[[11]](#footnote-11) Among millennials,[28 percent](http://www.medialogic.com/health-care-marketing/blog/telemedicine-millennials-key-others-health/) do not have a primary care physician, and [another 40%](http://www.medialogic.com/health-care-marketing/blog/telemedicine-millennials-key-others-health/) do not have a relationship with their doctor.[[12]](#footnote-12) [A recent survey](https://www.forbes.com/sites/kateashford/2017/01/30/videodoctor/#1e8b8b7210ce) found that 23% of people have delayed seeing a doctor because it takes too long, while an additional 13% have delayed a doctor visit because they are too busy.[[13]](#footnote-13) A recent study concluded that the average doctor visit took 121 minutes; 37 minutes of travel time, 64 minutes of waiting time, and just[20 minutes](http://news.harvard.edu/gazette/story/2015/10/paying-for-health-care-with-time/) of face-to-face time with physicians.[[14]](#footnote-14) By 2025, U.S. shortages of primary care physicians will increase significantly.[[15]](#footnote-15)

This shortage is even more evident in rural areas. While approximately 15% of the U.S. population lives in rural areas, [only 10% of the nation’s physicians](http://www.frs.org/images/AnticipatingEconomicReturnsOfRuralTelehealth.pdf) practice in rural areas.[[16]](#footnote-16) There are an estimated[40 specialists for every 10,000 Americans](http://www.frs.org/images/AnticipatingEconomicReturnsOfRuralTelehealth.pdf) living in rural areas, as compared to 134 per every 10,000 urban residents[.](http://www.frs.org/images/AnticipatingEconomicReturnsOfRuralTelehealth.pdf)[[17]](#footnote-17)

***What types of benefits can consumers derive through increased access to these broadband-enabled telehealth applications?***

Telehealth technologies can empower patients to better manage their health and participate in their health care.[[18]](#footnote-18),[[19]](#footnote-19) When used by clinicians, they can provide a more holistic view of a patient’s health over time, increase visibility into a patient’s adherence to a treatment, and enable timely intervention before a costly care episode. Clinicians can strengthen their relationships with, and improve the experience of, their patients by using the data sent to them to develop a personalized care plan and to engage in joint decision-making to foster better outcomes.2

Broadband is facilitating the development of a number of cutting-edge approaches to healthcare, many of which are expected to lead to vast individual and national cost savings and to an increase in the availability of quality health solutions. Moreover, broadband-enabled telemedicine services are shifting the healthcare paradigm by, among other things, enabling in-home care and real-time patient monitoring and focusing on disease prevention by enhancing personal wellbeing.

For patients, getting remote access to health care providers offers major advantages over traditional methods of delivery. At the top of this list is making certain types of care more accessible for those who struggle to get to distant medical facilities or hospitals. For example, videoconferencing can be used to connect patients with providers over the Internet.

In addition, these services and applications have the potential to:

* Reduce geographical inequities in access to quality healthcare
* Reduce costly readmissions
* Cut direct and indirect healthcare costs
* Enable the widespread use of EHRs
* Facilitate more timely and precise diagnoses and treatments of cardiovascular disease and produce better outcomes.[[20]](#footnote-20),[[21]](#footnote-21)
* Empower individuals to more carefully and effectively manage personal and family health decisions.[[22]](#footnote-22)

**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?**

Health disparities are differences that exist among specific population groups in access to quality healthcare that can be measured by inequities in incidence and mortality rates, disease burden, and other adverse health conditions.[[23]](#footnote-23) While the term disparities is often used or interpreted to reflect differences between geography or racial or ethnic groups, disparities can exist across many other dimensions as well, such as gender, sexual orientation, age, disability status, and socioeconomic status.[[24]](#footnote-24)

Broadband-enabled applications facilitate communication between cardiovascular patients and their providers, enable family members and close friends to be better caregivers, and allow individuals to treated remotely. Meanwhile, clinicians who use electronic health records, electronic prescribing, and clinical decision support tools do a better job of keeping their patients healthy and safe. But the benefits of these technologies may disproportionately accrue to patients and providers with both the physical access to telehealth technologies and the resources and skills needed to use them. Health disparities also impact many people who already have meaningful access to technology. This creates opportunities for narrowing health disparities through the use of telehealth technologies.

**Additionally, should the pilot program focus on particular health conditions, areas of medicine, or health crises?**

The potential for telehealth to reduce the burden of cardiovascular has led to a burgeoning volume of research aimed at evaluating its clinical and economic effectiveness. Therefore, the AHA recommends that the program prioritize the following diseases:

*Stroke*

Risk factors for stroke are more prevalent, and specialized stroke treatment options less available, in rural and remote areas than urban areas of the United States.[[25]](#footnote-25) IV tissue plasminogen activator (tPA) is an effective treatment for ischemic stroke but must be given in the first 3–4.5 hours after symptom onset.[[26]](#footnote-26) Only 2%–4% of ischemic stroke patients receive this treatment, with the lowest percentage in rural areas.[[27]](#footnote-27) Part of the low treatment rate is due to the late presentation of symptomatic patients beyond the treatment window.[[28]](#footnote-28) In rural areas, the problem is compounded by a general lack of stroke specialists with experience using tPA.[[29]](#footnote-29)

Telestroke can enable rural hospitals to deliver tPA onsite instead of transferring the patients to specialized stroke centers.[[30]](#footnote-30) The newfound ability to deliver onsite stroke thrombolysis may motivate many hospitals to implement a drip and keep organized systems of stroke care. Active telestroke networks have achieved a 60% to 70% patient retention at local hospitals, with significant cost savings and improved financial viability of these rural health services.[[31]](#footnote-31)

*Hypertension*

Hypertension is a major risk factor for CVD. The age-adjusted prevalence of hypertension in US adults is nearly 35%, which equates to approximately 85 million.[[32]](#footnote-32) By 2035, projections show that over 42% of US adults will be hypertensive, an additional 27 million from current projections.[[33]](#footnote-33) Cost projections for hypertension are similarly daunting, with 2015 figures tallying nearly $70 billion and those for 2035 soaring to over $150 billion.[[34]](#footnote-34) Remote patient monitoring technologies may serve as a vital conduit for improving hypertension control and reducing the economic burden that stems from the costly hospital stays that result from acute events related to hypertension.

Research has shown remote patient monitoring can reduce systolic blood pressure (SBP) and diastolic blood pressure (DBP) significantly compared to usual care and self-monitoring alone.[[35]](#footnote-35) When compared directly to usual care, remote patient monitoring on the average reduced SBP and DBP.[[36]](#footnote-36) Additional studies have shown that remote patient monitoring’s positive impact on SBP can increase if the intervention is long-term, and if the intervention includes multiple behavior change techniques.[[37]](#footnote-37)

*Atrial Fibrillation*

An estimated 2.7 to 6.1 million in the United States have been diagnosed with atrial fibrillation (AF).[[38]](#footnote-38) With the aging of the US population, this number is expected to increase to 7.1 million by 2035.[[39]](#footnote-39) AF is associated with a reduced quality of life and an increased number of adverse outcomes such as stroke, heart failure, increased number of hospitalizations, and mortality.[[40]](#footnote-40) Therefore, an early diagnosis of this arrhythmia is crucial in order to adopt the most appropriate treatment strategy.

Remote patient monitoring for atrial fibrillation has been shown to improve patient follow-up and outcomes by enabling accurate and early detection, quantification, and notification.[[41]](#footnote-41) It also may reduce risk of stroke and rates of ED visits for arrhythmia and generate accurate readings of ventricular rates.[[42]](#footnote-42),[[43]](#footnote-43) Finally, remote patient monitoring potentially reduces the time between arrhythmia detection and provider evaluation compared to in-office monitoring.[[44]](#footnote-44),[[45]](#footnote-45)

***What are the costs and benefits of the shift towards ubiquitous connected care?***

With soaring cardiovascular disease rates and physician shortages, individuals are demanding omnipresent, patient-centered healthcare services in lieu of classical, brick-and-mortar facilities.[[46]](#footnote-46) An ubiquitous healthcare system provides instant healthcare at a fraction of the cost regardless of the patient’s healthcare status or geographical location.[[47]](#footnote-47) In addition, it enables service providers to effectively store and disseminate patient information to relevant care team members, remotely monitor the patient’s biological data in real-time, and provide feedback.[[48]](#footnote-48)

However, these technologies present some ethical questions, ranging from the small scale individual questions of trust and efficacy to the societal issues of health and longevity gaps related to economic status. Therefore, ubiquitous healthcare presents problems in combining cyber ethics with established medical ethics. These issues include confidentiality, privacy, liability and responsibility, and informed consent. In addition, medicine is a controlled profession whose practice is restricted by government-appointed authorities in the developed world, whereas computer software and hardware development is notoriously lacking in such aspects.

***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? 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?***

Telehealth technologies must fit into people’s daily routines and offer tangible value for their time and money. The time people devote to health care exacts a price, particularly on low-income people, who may have less flexible time than higher-income Americans. Some parents have to choose between earning money and taking time off from work to have their children vaccinated. Sick, frail people may have to travel to several different doctors’ offices and juggle instructions from different providers.

The AHA recommends that the program considers the myriad of demands on consumers’ time and resources and aim to make care as accessible and impactful as possible. It also must engage a diverse set of patients and consumers, including those with chronic conditions and those who face language barriers, low health literacy, limited digital acumen, or other problems in accessing care. If such groups are not engaged, it will not be possible for the program to make substantial gains in improving health care quality or controlling costs.

***Application Process and Types of Pilot Projects to Be Supported***

In addition to the bullets of application information suggested by the FCC, the AHA recommends that applicants include an itemized budget for how they plan to disperse funds and what each item will cost. We also recommend that applicants be required to detail how they will recruit the patient population for their project, the relevant disclaimers for using human subjects, their suggested mechanisms for procuring patient consent, and any conflicts of interest or relationships of interest applicants may have.

In terms of the criteria used for selecting successful applicants, the AHA recommends that the program prioritizes diseases and geographical areas that assume the most burden regarding cost and incidence and mortality rate. For example, rural areas are located in all 50 states, yet cardiovascular disease has disproportionately high incidence and mortality rates in the Deep South. Secondly, the AHA recommends that the program priortizes technologies that are the most cost-effective, practical, and user-friendly for diverse populations in terms of education, health and digital literacy, and diagnoses. In short, the AHA recommends that need and impact should be the two most prioritized variables.

***Eligible Health Care Providers***

The AHA recommends that the program also consider patient-advocacy organizations as potential co-applicants. While the AHA is not a healthcare provider, we have thousands of providers amongst our volunteer base who actively contribute to our mission as researchers and advocates. The AHA has also developed treatment guidelines and care plans that are used extensively by specialists and primary care providers alike. More specifically, the AHA recommends that the program allows patient-advocacy organizations to cpartner with provider organizations and broadband providers as applicants to ensure our care plans reach rural populations that disproportionately suffer from cardiovascular disease via telehealth and remote patient monitoring technologies.

***Should the pilot program fund routers and servers at the clinic or hospital to assist with the additional telehealth needs?***

One of the primary barriers to telehealth and remote patient monitoring implementation and use is the lack of infrastructure. Telehealth and remote patient monitoring have the potential of introducing a new form of disparity in access to care by replacing geographic isolation with digital isolation. Communities and patients who are not technologically engaged, who live on the other side of the “digital divide,” and who have limited capital to invest in telehealth infrastructure (at the community or patient level) may face challenges to access care as telehealth and remote patient offerings are increasingly used to reduce cost and increase access. As such, the AHA recommends that the program fund any necessary technological infrastructure to assist applicants in implementing their proposed initiative.

***Should the pilot program fund equipment used to provide connected care services, such as remote patient monitoring equipment?***

The Center for Medicare and Medicaid Services has recently extended reimbursement to remote patient monitoring services. Remote patient monitoring can empower patients to better manage their health and participate in their health care.[[49]](#footnote-49) When used by clinicians, remote patient monitoring can provide a more holistic view of a patient’s health over time, increase visibility into a patient’s adherence to a treatment, and enable timely intervention before a costly care episode. Clinicians can strengthen their relationships with, and improve the experience of, their patients by using the data sent to them via remote patient monitoring to develop a personalized care plan and to engage in joint decision-making to foster better outcomes.[[50]](#footnote-50)

Additionally, mobile devices have the potential to provide preemptive, proactive care to patients who are geographically isolated or removed from access to their healthcare providers. In-hospital providers increasingly provide care directly from their mobile devices, increasing efficiency and decreasing their reliance on a limited number of desktop devices.[[51]](#footnote-51)

The future of healthcare delivery will likely involve increased reliance on mobile computing or communication platforms ranging from handheld smartphones through small form factor tablets that can support a variety of operating systems and healthcare applications. Standalone applications as well as those that mobilize traditional medical instruments such as stethoscopes, otoscopes or cameras and diagnostic equipment such as portable ultrasound or electrocardiogram machines will transform our consumption of medical information and enable better point of care decision-making.

***Protecting Patient Information***

Traditionally, the medical information shared between provider and patient has remained within the confines of a healthcare facility. Telehealth and remote patient monitoring potentially change the paradigm by gathering electronic data into a data repository that is remote from the health facility, yet readily accessed and shared with various health care providers involved in a patient's care or can be used for research or educational purposes. With accessibility, however, come challenges to maintaining the privacy of patient health information and potential issues related to liability and reimbursement for telehealth and remote patient monitoring services.

HIPAA places the burden of securing a patient’s health information squarely on physicians and healthcare organizations. Most importantly, loss of patient control over confidential and sensitive health information threatens the confidential communication between doctors and patients. Confidentiality ensures that patients seek out care, and that they are open and honest with their providers.  Ultimately impacting all stakeholders in the healthcare ecosystem, patients who fear a loss of control over their private medical information may lose faith in their provider--and in the health care system itself.

As such, the AHA recommends that successful applicants be required to educate their patients on what data are collected, how it will be used, and what other users and entities will have legitimate access to these data. Applicants should also be required to use only technologies that contain patient controlled privacy settings to determine who has access to data.

***Conclusion***

The AHA is encouraged by the FCC’s desire to create better access to healthcare for the underserved by expanding broadband in rural areas. We are excited by the endless potential of the Connected Care program to create better health outcomes for those who ordinarily don’t have access to primary or specialty care. As such, the AHA encourages the FCC to ensure that the program prioritizes diseases that currently have the most negative and far-reaching impacts on rural residents in terms of incidence and mortality rates and overall costs. The AHA also encourages the Commission to provide due oversight over the program and ensure that it creates a model for healthcare innovation and expansion that showcases to policymakers the potential value of telehealth and remote patient monitoring technologies to reduce health inequities and create better outcomes.

The AHA thanks the FCC in advance for its time and consideration of our views. We look forward to working with its staff throughout this process.

A.Colby Tiner

Policy Advisor

Center for Health Technology and Innovation

American Heart Association

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