

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

In the Matter of

Protecting and Promoting the Open Internet

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GN Docket No. 14-28

Reply Comments of the California Telehealth Network

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Table of Contents

I. The Commission Must Promote Broadband Healthcare Policy and Delivery of Telehealth Services in Any Rules It Adopts to Preserve the Open Internet.....1

II. Creating a Common Understanding of the Telehealth “Use Case” and Goals Related to Telehealth as It Has Evolved Since 2010 Is Critical to the Commission’s Consideration of Policy and Rules Relating to the Open Internet.....5

A. The Common Understanding of “Telehealth” Includes the Need for Broadband Uses Enabled by ISP Networks.....6

B. Specific Broadband Telehealth Uses Require Reliable and Secure Transmissions Enabled by ISPs.....7

C. The Commission Needs to Consider How Its Rules Governing ISP Management of Telehealth Promotes Care Coordination Under the ACA.....9

D. The Commission Should Strive to Enable Health Care Edge Providers and End Users Efforts to Achieve the “Triple Aim” to Optimize Performance of the Health Care System.....10

III. The “Open Internet” for Telehealth Depends on All Americans Having Access to Advanced Telecommunications Capacity in a Reasonable and Timely Fashion.....11

IV. The Commission Must Consider Whether ISPs Must Give Priority to Telehealth Transmissions in Crafting Its Rules.....14

V. The Commission Must Consider Policies and Rules to Promote the Open Internet for Telehealth to Avoid an Arbitrary Process and to Lead to Rules that Align Telecommunications and Healthcare Policies.....17

VI. Conclusion.....19

I. The Commission Must Promote Broadband Healthcare Policy and Delivery of Telehealth Services in Any Rules It Adopts to Preserve the Open Internet

Imagine a world in which a palliative or senior care patient can be treated in the comfort of her own home supported by her family because wireless home healthcare monitoring devices are sending her vital signs to a health care cloud, which uses algorithms to evaluate whether her medications are working, or whether she needs to be seen by her doctor, or whether an ambulance needs to be sent to her home so that she can be taken to the emergency room for treatment.

Imagine a world in which a farmer who is having a stroke can be taken to a rural clinic, which has only one non-specialist doctor, and be seen immediately by a neurologist hundreds of miles away over a secure video conference who can in real time evaluate the farmer's symptoms and determine the correct treatment protocol that should be used by the rural doctor.

Imagine a world in which returning war veterans with post-traumatic stress syndrome can sign into group therapy video-chat sessions wherever they are, whenever they want, and on whatever device they choose.

Today's broadband networks already facilitate these types of diagnosis and care. Networks owned by Internet Service Providers ("ISPs") and the applications riding on those networks are disrupting traditional healthcare delivery through the expansion of telehealth. In the context of preserving the open Internet, the Commission must ensure that its rules create proper incentives to invest and deploy broadband, health IT ("HIT") equipment, and software for telehealth riding over broadband. Telehealth communications can reduce the cost of healthcare and give all Americans access to the best quality care. But, the Commission's rules must ensure that ISPs give priority to telehealth transmissions to avoid potentially catastrophic consequences for patients that could result to patients from latency or service interruption.

The California Telehealth Network ("CTN") provides HIT solutions to improve the integration and delivery of healthcare services across a wide variety of practices. CTN emphasizes improving delivery to medically-underserved communities, including safety net clinics as well as critical access and rural hospitals.¹ Without the broadband facilities and telehealth services provided by CTN, thousands of patients would not have access to any specialty diagnosis or care, let alone other telehealth services. Thus, CTN, the clinics and doctors it serves and the patients receiving telehealth services as a result of CTN are all stakeholders in the Internet ecosystem for telehealth and have an interest in how the Commission defines the open Internet for telehealth in this Notice of Proposed Rulemaking ("NPRM").

CTN received a \$22.1 million grant from the Commission's Rural Health Care Pilot Program to provide broadband to non-profit hospitals and clinics in rural and medically underserved urban communities in California. CTN uses enterprise class Internet backbone and networks owned by ISPs and by other government funded networks, such as those operated by the Corporation for Education Network Initiatives in California and Indian Health Services, to efficiently expand broadband and healthcare access. CTN works with ISPs including AT&T, Charter Communications, Time Warner Cable and Suddenlink.

In addition to broadband connectivity, CTN works with cloud-based HIT companies that provide reasonable use of electronic medical records ("EMRs"), web based video conferencing and web based patient referral scheduling platform solutions. CTN also assists telemedicine specialty care providers in reaching the underserved communities most in need of their services over CTN's secure broadband network. Finally, CTN operates the California Telehealth Resource Center ("CTRC"), one of twelve regional telehealth resource centers funded by the Department of Health and Human Services' ("HHS") Health Resources and Services Administration ("HRSA"). CTRC provides

¹ Eric Brown is participating in this proceeding as the President and CEO of CTN and not in his capacity as a member of the Universal Service Administrative Co. Board of Directors.

telehealth training, technical and programmatic assistance to California health care providers to advance telehealth adoption. CTN filed comments in the proceeding in which the Commission transitioned the Internet Access and Rural Health Care Pilot Programs into the Healthcare Connect Fund.²

Federal policy, as set forth specifically in the sections of the Health Information Technology for Economic and Clinical Health Act of the American Recovery and Reinvestment Act of 2009³ and in the Affordable Care Act (“ACA”),⁴ created incentives to use HIT to improve clinical integration. These policies are already realigning the business of healthcare delivery. Moreover, states and local governments have an interest in reducing their healthcare delivery costs. However, the Centers for Medicare and Medicaid research reports that national healthcare expenditures are expected to grow from 17.2 percent of gross domestic product in 2012 to 19.9 percent by 2022.⁵ The success of telehealth is necessary to slow down this burden on the nation’s economy.

The Commission has stated its role with respect to healthcare: “The FCC is committed to accelerating the adoption of health care technologies to improve health outcomes and lower health care costs.”⁶ Given that the Commission has stated that the “fundamental question” in the NPRM is to determine “the right public policy to ensure that the Internet remains open”,⁷ CTN asserts that the Commission cannot answer that question unless its rules enable the Commission’s policy commitment and ensure reliable and secure delivery of telehealth services to all Americans.

² In the Matter of Rural Health Care Support Mechanism, WC Docket No. 02-60 (December 21, 2012). See Comments of CTN filed on July 15, 2012. With respect to the Commission’s program that funds broadband connectivity for health care providers through CTN, see <http://www.fcc.gov/encyclopedia/rural-health-care>. (“The Rural Health Care Program, which includes the new Healthcare Connect Fund, provides funding to eligible health care providers (HCPs) for telecommunications and broadband services necessary for the provision of health care. The goal of the program is to improve the quality of health care available to patients in rural communities by ensuring that eligible HCPs have access to telecommunications and broadband services. Funding for the Rural Health Care Program is capped at \$400 million annually. The Rural Health Care Program is currently made up of four programs: the Healthcare Connect Fund, the Telecommunications Program, the Internet Access Program, and the Rural Health Care Pilot Program.”)

³ Title XIII of the American Recovery and Reinvestment Act of 2009, Pub.L. No. 111–5, 123 Stat. 226 (2009).

⁴ Patient Protection and Affordable Care Act, Pub. L. No. 111-48, 124 Stat. 119 (2010).

⁵ <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NHE-Fact-Sheet.html>

⁶ <http://www.fcc.gov/health>

⁷ NPRM para. 2.

CTN is concerned that the discussion of regulating management practices of the ISPs might be decided in the context of the debate over “net neutrality.” The NPRM does not directly ask for comments on the relationship between telehealth and the open Internet. Although the Commission asks generally for comment on “developments in the Internet’s ecosystem since 2010,”⁸ the specific questions posed in the NPRM are limited to important issues concerning free expression, competition for entertainment and information content, and education applications. CTN files these reply comments in response to the NPRM out of concern that the record thus far does not describe fully the “use case” for telehealth.⁹

Moreover, CTN trusts that the Commission does not mean to be so arbitrary as to limit its consideration of the open Internet to the relationship between rules governing ISP management practices and promoting free expression, entertainment and information content and education applications. Such a limitation would open any resulting rules to potential legal challenges.

In the context of the NPRM, encouraging the success of telehealth transmissions and the ISP network management practices implicated in those transmissions has evolved into a matter of national industrial policy, given the ability of those transmissions to achieve federal healthcare policy goals to improve patient outcomes, coordinate care, and lower healthcare costs. The open Internet for telehealth needs to be considered in terms of the evolving ecosystem for healthcare edge providers and end users – including providers and patients receiving services from CTN. Telehealth services offered over an open Internet require reliable bandwidth of high quality and security that

⁸ *Id.* at para. 34. (“In light of developments in the Internet ecosystem since 2010, we wish to refresh the record on the importance of protecting and promoting an open Internet. We seek comment on the current role of the Internet’s openness in facilitating innovation, economic growth, free expression, civic engagement, competition, and broadband investment and deployment.”)

⁹ See: Comments of AARP dated July 15, 2014, pp. iii, 2; Comments of Alaska Rural Coalition dated July 15, 2014, pp. 10, 11 and 13; Comments of Alcatel-Lucent dated July 15, 2014, pp. 6, 19; Comments of Cisco Systems Inc. dated July 17, 2014, p. 8; Comments of the Consumer Electronics Association dated July 15, 2014, pp. 4, 10; Comments of CTA – The Wireless Association dated July 18, 2014, pp. 7, 23; Comments of the Electronic Frontier Foundation dated July 15, 2014, pp. 1,8; Comments of Global Healthy Living Foundation dated July 10, 2014, *passim*; Comments of the Greenlining Institute, et al. dated July 18, 2014, pp. 5,6,7; Comments of The National Association of Regulatory Utility Commissioners dated July 18, 2014, p. 6; Comments of The National Minority Organizations, et al, pp. i, 4; Comments of the US Chamber of Commerce dated July 15, 2014, pp. 1, 7; Comments of Verizon and Verizon Wireless dated July 15, 2014, p. 9.

is generally being provided by ISPs today – to the extent true broadband is available. As bandwidth requirements and usage for telehealth services increases, however, rules governing ISP network management practices will become more important to the success of telehealth in terms of investment, access and patient outcomes.

Thus, the Commission needs to take care in framing its rules to ensure continued investment in infrastructure, devices and software in order to achieve the promise of federal healthcare policy and the Commission’s healthcare goals. The draft rules do not achieve this because they do not ensure that ISPs will give health care transmissions priority. This will not encourage increased investment in telehealth, nor will it protect healthcare edge providers or end users – particularly patients in rural and underserved areas.

To preserve the open Internet for telehealth, the Commission’s rules must ensure that ISPs adequately support telehealth transmissions:

1. At the highest speed and the best quality of service;
2. Free from latency and interference;
3. With priority over other transmissions;
4. With the highest degree of security.

From the point of view of CTN, encouraging the evolution of the open Internet requires that both healthcare edge providers and edge consumers have access to broadband with these four qualities.

II. Creating a Common Understanding of the Telehealth “Use Case” and Goals Related to Telehealth as It Has Evolved Since 2010 Is Critical to the Commission’s Consideration of Policy and Rules Relating to the Open Internet

Although the NPRM never seeks comment on telehealth, the Commission’s general statement about the need for comment on “developments in the Internet’s ecosystem

since 2010” must be addressed.¹⁰ At that time, the Commission created a “base line” with respect to the technical needs for healthcare delivery by broadband in the National Broadband Plan.¹¹ The chapter on healthcare concludes that the Commission needed more data on healthcare providers’ broadband needs, broadband connectivity options and gaps and barriers preventing sufficient broadband levels.¹² Specifically, CTN files these reply comments to help the Commission understand how the “broadband use case” for healthcare has evolved since 2010.

A. The Common Understanding of “Telehealth” Includes the Need for Broadband Uses Enabled by ISP Networks

In the context of the NPRM and to give a common understanding of what is at stake in the context of “telehealth” or “telemedicine” services, the Commission should consider the definition of “telehealth” by HRSA:

“Telehealth” is the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration. Technologies include videoconferencing, the internet, store-and-forward imaging, streaming media, and terrestrial and wireless communications. HRSA works to increase and improve the use of telehealth to meet the needs of underserved people by:

- Fostering partnerships within HRSA, and with other Federal agencies, states and private sector groups to create telehealth projects.
- Administering telehealth grant programs.
- Providing technical assistance.
- Evaluating the use of telehealth technologies and programs.

¹⁰ NPRM para. 34.

¹¹ Health Care Broadband in America, Early Analysis and a Path Forward, OBI Technical Paper No. 5 (August 2010), <http://transition.fcc.gov/national-broadband-plan/health-care-broadband-in-america-paper.pdf>.

¹² *Id.* (“Understanding the state of broadband connectivity for health care providers is a relatively new, but important area of analysis. There is more to be done, especially as the need for better data continues to grow. As nascent health IT applications become more prevalent and the importance of wireless connectivity grows, an up-to-date understanding of broadband use cases and connectivity levels will be invaluable. Specific data needs and analyses are suggested in each of the sections above.”)

- Developing telehealth policy initiatives to improve access to quality health services.
- Promoting knowledge exchange about "best telehealth practices."¹³

Moreover, FCC subsidy money is being used in a coordinated fashion with HRSA allocations. For example, utilizing a \$1.3 million HRSA grant, CTN operates the CTCRC, previously known as the California Telemedicine and eHealth Center, to expand telehealth training and support for rural and medically underserved clinics and hospitals in California.

Thus, the technologies included in the HRSA definition of telehealth enabled by transmissions over ISP networks – “videoconferencing, the internet, store-and-forward imaging, streaming media, and terrestrial and wireless communications” – are all implicated by rules governing preservation of the open Internet.

B. Specific Broadband Telehealth Uses Require Reliable and Secure Transmissions Enabled by ISPs

Specifically, in terms of the “use case” for telehealth services, many telehealth services require full motion synchronous video conference service free from latency or interruption. Consider these examples of services described by service providers and entities offering policy and other input into the proliferation of remote healthcare services and the best practices to be used:

- TeleICU – As described on a web page entitled “Emerging Best Practices for Tele-ICU Care,” the California Healthcare Foundation describes the service as: “Tele-ICU offers a solution, using a communication network with electronic vital sign monitors to allow clinicians in one center to remotely monitor, consult, and care for ICU patients in multiple distant satellite centers. By increasing the

¹³ <http://www.hrsa.gov/ruralhealth/about/telehealth/>

number of ICU patients that critical care teams can manage, tele-ICUs can effectively extend both the productivity and the reach of specialists.”¹⁴

- TeleStroke – The Mayo Clinic states: “In stroke telemedicine, also called telestroke, doctors who have advanced training in the nervous system (neurologists) remotely evaluate people who've had acute strokes and make diagnoses and treatment recommendations to emergency medicine doctors at other sites. Doctors communicate using digital video cameras, Internet telecommunications, robotic telepresence, smartphones and other technology.”¹⁵
- TelePsychiatry – On a page entitled “Telepsychiatry at Princeton HealthCare System,” Princeton House Behavioral Health describes its service as follows: “Telepsychiatry is defined as the use of remote telecommunications to overcome geographic distances between psychiatrists and other healthcare practitioners or between psychiatrists and their patients. It is live, interactive audio and visual communication that is attained through videoconferencing to represent a reasonable alternative to the traditional face-to-face psychiatrist-patient encounter.”¹⁶

CTN's use of ISP networks makes it possible for patients in rural and underserved communities to receive these services. Indeed, monthly self-reported telemedicine activity from CTN sites indicates that in any given month over 70% of telemedicine consultations occurring over the CTN network are telePsychiatry consultations. This indicates the valuable use of Commission subsidy funds to provide specialty treatment where, but for broadband, specialty doctors are not available.

¹⁴ <http://www.chcf.org/publications/2014/01/teleicu-care>

¹⁵ <http://www.mayoclinic.org/tests-procedures/stroke-telemedicine/basics/definition/prc-20021080>

¹⁶ <http://www.princetonhcs.org/phcs-home/what-we-do/princeton-house-behavioral-health/what-we-do/telepsychiatry.aspx>

These services must to be offered reliably and securely.¹⁷ If there is latency or service interruption, healthcare service will be interrupted. This will lead to catastrophic results for patients. And, as full motion synchronous video conferencing becomes more necessary for “digital diagnosis” or “digital treatment,” the total bandwidth consumption in the Internet ecosystem for telehealth will grow. Thus, as described below, the Commission’s rules must require that ISPs give priority to telehealth transmissions and ensure the viability of these services in a fashion that encourages investment and deployment so that they are available to all Americans.

C. The Commission Needs to Consider How Its Rules Governing ISP Management of Telehealth Promotes Care Coordination Under the ACA

Since 2010, ACA was adopted and is being implemented. As the California Healthcare Foundation points out: “The success of the Affordable Care Act will depend on embracing technology that allows providers to reach more patients, treat them effectively and efficiently, and track their progress over time.”¹⁸

In compliance with Section 3022 of the ACA, HHS’ Centers for Medicare and Medicaid Services have adopted guidelines for the formation of Accountable Care Organizations (“ACOs”). Congress’ goal relates directly to benefits that can be achieved through broadband-delivered telehealth services:

[ACOs] are groups of doctors, hospitals, and other health care providers, who come together voluntarily to give coordinated high quality care to their Medicare patients.

¹⁷ While not a central focus of these comments, CTN notes that, given the requirements under state and federal laws – including but not limited to those in The Health Insurance Portability and Accountability Act of 1996 (HIPAA, Pub.L. No. 104–191, 110 Stat. 1936 (1996)) – providers must comply with an array of privacy laws in making telehealth transmissions. Hence the comment that the Commission’s rules must ensure that ISPs are required to enable “secure” telehealth transmissions.

¹⁸ <http://www.chcf.org/publications/2014/02/evidence-promise-connected-health>

The goal of coordinated care is to ensure that patients, especially the chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors.

When an ACO succeeds both in both delivering high-quality care and spending health care dollars more wisely, it will share in the savings it achieves for the Medicare program.¹⁹

Commission subsidies used by CTN to connect healthcare edge providers and end users are a direct investment in establishing ACOs and in giving them the opportunity to succeed. Therefore, the Commission's rules must consider how best to use broadband to help providers become ACOs.

D. The Commission Should Strive to Enable Health Care Edge Providers and End Users Efforts to Achieve the "Triple Aim" to Optimize Performance of the Health Care System

The Institute for Healthcare Improvement's ("IHI's") Triple Aim for optimizing the performance of the nation's health care system guides every aspect of CTN's work:

The IHI Triple Aim is a framework developed by the Institute for Healthcare Improvement that describes an approach to optimizing health system performance. It is IHI's belief that new designs must be developed to simultaneously pursue three dimensions, which we call the "Triple Aim":

- Improving the patient experience of care (including quality and satisfaction);
- Improving the health of populations; and
- Reducing the per capita cost of health care.²⁰

¹⁹ <http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/index.html?redirect=/ACO>

²⁰ <http://www.ihl.org/Engage/Initiatives/TripleAim/pages/default.aspx>

These goals do not differ from the Commission’s commitment to “accelerating the adoption of health care technologies to improve health outcomes and lower health care costs.”²¹

As the policy observations and specific rule suggestions set for below make clear, in meeting its goal to preserve the open Internet and frame rules governing ISP network management practices, the Commission can:

- Improve the patient’s experience of care by ensuring that remote care through telehealth transmissions is given priority by the ISPs;
- Improve the health of rural and underserved populations by adopting policies that encourage investment in broadband facilities, software and applications enabling telehealth; and,
- Reduce per capita cost of healthcare by ensuring that broadband networks – both wired and wireless – are available to all Americans.

III. The “Open Internet” for Telehealth Depends on All Americans Having Access to Advanced Telecommunications Capacity in a Reasonable and Timely Fashion

Use of HIT is intended to improve patient outcomes and reduce healthcare costs. For example, clinical integration of EMRs can reduce unnecessary procedures, the length of hospital stays and the number of hospital readmissions. But, the meaning of the “open Internet” in the case of telehealth does not just depend on ensuring that broadband is in healthcare facilities. Home healthcare monitoring can provide the most efficient way to keep chronically ill and senior patients at home by, for example, sending vital signs to a healthcare cloud where they can be evaluated by primary and specialty care clinicians to determine if intervention – either by an in person or virtual visit to a doctor, by adjustment of medication, or by summoning an ambulance – is necessary.

²¹ See fn. 6, *supra*.

From the perspective of CTN, the success of HIT and exchange of EMR information to reduce the pace at which health care costs rise depends on accomplishing goal Congress delegated to the Commission to achieve in Section 706 of the Telecommunications Act of 1996: that all Americans have access to "advanced telecommunications capability."²² In terms of broadband, despite the amount of investment in broadband infrastructure cited in the NPRM,²³ many healthcare facilities, particularly in rural and underserved urban areas, lack access to sufficient broadband capacity to provide telehealth service – particularly if the telehealth service requires full motion synchronous video conference service free from latency or interruption. The NPRM recognizes this “digital divide” generally.²⁴ The digital divide for healthcare exists in spite of programs such as the Rural Health Care Pilot Program and more recently, the Healthcare Connect Fund. Lack of broadband capacity means that providers cannot offer, and patients cannot receive, services such as teleICU and teleStroke. As a consequence, the catastrophic effect of insufficient broadband either endangers lives or increases the risk of disability resulting from delayed care – thereby increasing costs. In terms of the meaning of “advanced telecommunications capability,” the Commission must consider whether the Internet is truly “open” if all healthcare providers and patients cannot get sufficient broadband reliable and secure capacity to enable "digital diagnosis" and "digital treatment."

Moreover, the success of HIT and exchange of EMRs to increase access to quality care depends on how the Commission exercises its discretion to interpret the meaning of “advanced telecommunications capability” and “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion” in the context of telehealth.²⁵ While the statistics cited in the NPRM with respect to “blossoming” of the new product markets for “mobile Web development, carrier backend

²² Section 706 of the Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 5 (1996).

²³ NPRM para. 30.

²⁴ *Id.* at para. 33.

²⁵ *Id.* at paras. 145-147.

software, app development and cloud-based services” may be accurate,²⁶ many healthcare applications depend on end-user patients having access to mobile devices for services such as home healthcare monitoring. Unfortunately, “capability” such as smart phones and tablets or iPads are beyond the means of many who would benefit from such monitoring services. And, while not all of these transmissions require broadband, they must be reliable and secure in order to result in quality care.

In the opinion of CTN, the Commission should be guided by the point of view articulated by Prof. Christensen in *The Innovator’s Prescription*:

[T]echnology enablers of next generation health care include “molecular diagnostics, diagnostic imaging technology and *ubiquitous telecommunications*.”²⁷

In the context of preserving the open Internet and with respect to its subsidy programs, the Commission should explore the relationship between what “ubiquitous telecommunications” is needed for telehealth to succeed, consistent with its authority under Section 706 and *Verizon v. F.C.C.* (“*Verizon*”)²⁸ and *City of Arlington, Tex. v. F.C.C.*²⁹ Of immediate concern to CTN, edge providers serving and end users residing in rural and underserved communities must be assured of “ubiquitous telecommunications” so that providers and patients are not bypassed by the “next generation” of telehealth services. This will require reliable and secure fixed and mobile broadband where providers and patients are.

Even today, CTN finds that over half of its rural health care provider sites have 1.54 megabits per second or “T1” speed circuits because that is the best available service in these rural communities. It is unacceptable public policy to subject providers, with marginal Internet speeds, to even more latency if telehealth transmissions they use are

²⁶ *Id.* at para. 31.

²⁷ Clayton M. Christensen, Jerome H. Grossman and Jason Hwang (2009). *The Innovator’s Prescription: A Disruptive Solution for Health Care* [Google Books version], p. xxii (emphasis added). Retrieved from http://books.google.com/books?id=x8KFZD_pnH4C&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false.

²⁸ 740 F.3d 623 (2014).

²⁹ 133 S.Ct. 1863 (2013).

subordinated in favor of, for example, entertainment content. Moreover, the success of congressional policies delegated to the Commission under Section 706 not only requires expansion of the current Commission subsidy programs to bring broadband to all healthcare facilities, it also requires ensuring that patients in rural and medically underserved communities have access to telehealth services in their homes.

This has implications for matters that may be in the control of the Commission – such as broadband deployment. In the larger context of preserving the open Internet for telehealth, the Commission’s work with other federal agencies, such as HHS, The Food and Drug Administration (“FDA”) and The Department of Agriculture Rural Utility Service, is implicated. For example, in the context of ensuring the efficacy of the Healthcare Connect Fund, CTN believes that the Commission must start exploring with HHS whether smart phone costs should be reimbursed to enable FDA-approved home healthcare applications and what connectivity needs and network requirements are implicated by those decisions.

From the perspective of CTN, policies that promote the open Internet for delivery of telehealth and any regulation of ISP network management practices needs to be seen through this forward-looking lens.

IV. The Commission Must Consider Whether ISPs Must Give Priority to Telehealth Transmissions in Crafting Its Rules

If any rule results from this NPRM, it should insure *in the context of telehealth* that each ISP act to “add to the benefits that the Internet delivers to Americans—by maintaining Internet openness and by extending the reach of broadband networks” and not “threaten those benefits—by restricting its customers from the Internet and preventing edge providers from reaching consumers over robust, fast and continuously improving networks.”³⁰

³⁰ See NPRM para. 5.

In the context of telehealth, the Commission's rules must take into account the intersection between an open Internet and regulation of the ISPs and the treatment, policy and economic goals of telehealth:

- Reinstatement of the "no blocking" prohibition on Internet service providers ("ISPs") designed to prevent discrimination that was struck down by the DC Circuit last year.³¹ The Commission's rules must prohibit ISPs from blocking telehealth transmissions because blocking brings with it potential catastrophic risk to patients and could frustrate achievement of HIT-related policy goals – including those that the Commission has articulated.
- Whether ISPs should be permitted, and if so under what conditions, to offer "pay for priority" so that "edge users" can purchase higher speeds and quality of service, or should ISPs be banned from such practices.³² The notion of a commercially available fast lane may seem attractive. It is doubtful, however, that safety net health care providers in rural and disadvantaged urban areas served by CTN would be able to afford a fast lane. In any event, any Commission rule should guarantee healthcare edge users such as hospitals, clinics and others the highest priority and quality of service because latency and service interruption brings with it unreasonable risks.
- A proposed enforcement standard for complaints against ISPs based on "commercial reasonableness" with a case-by adjudication and enforcement process.³³ While "commercial reasonableness" may be an appropriate standard when considering disputes between entertainment and information competitors, ISPs must be held to a higher standard with respect to any dispute involving a healthcare edge provider and end user.

³¹ See NPRM para. 89 *et seq.*

³² See NPRM Statement of Chairman Tom Wheeler.

³³ See NPRM para. 89 *et seq.*

- Rules requiring ISP transparency in disclosing network management practices, performance characteristics and terms and conditions.³⁴ This is necessary for all to enable ISP transactions with edge providers and end users and for the general achievement of telehealth policy on reasonable terms and conditions. And,
- Whether the current regulatory classification for ISPs and Internet service is appropriate or whether broadband should be classified as a common carrier service.³⁵ It is not clear whether common carrier status for ISPs in which the transmission of healthcare data is treated equally with all other data can be the legal basis for the rule requiring priority of telehealth transmissions that CTN urges the Commission to adopt. Moreover, as a legal matter, it is not clear whether Title II regulation of the ISPs is necessary to or can achieve this result.³⁶

The Commission's proposed rules do not ensure that ISPs transmit health care bits at the highest speed free from interference and discrimination. Chiefly, the Commission proposes to add Part 8 of Title 47 of the Code of Federal Regulations by, among other things, adding Section 8.9 concerning "Other Laws and Considerations." The first paragraph of that proposed rule reads:

Nothing in this part supersedes any obligation or authorization a provider of broadband Internet access service may have to address the needs of emergency communications or law enforcement, public safety, or national security authorities, consistent with or as permitted by applicable law, or limits the provider's ability to do so.³⁷

As set forth above, telehealth transmissions cannot tolerate latency or interruption without risking catastrophic consequences. But, the proposed rule does not define

³⁴ See *Id.* at para. 63 *et seq.*

³⁵ See *Id.* at para. 148 *et seq.*

³⁶ CTN acknowledges that, in the context of Title I classification, some may raise First and Fifth Amendment issues that the Commission will need to consider. CTN believes that a rule ensuring that ISPs give priority to all health care transmissions is content-neutral economic regulation. It also furthers an important government interest of ensuring the safety of patients by means that are substantially related to that interest. See *Turner Broadcasting System, Inc. v. F.C.C.*, 512 US 622 (1994). CTN believes that the ISPs should be compensated for such transmissions.

³⁷ NPRM Appendix A.

“emergency communications” or “public safety” in a manner that includes telehealth communications between edge providers – such as those served by CTN – and end users – including health care clouds, health care facilities, health care professionals or patients. The rule needs to ensure that telehealth transmissions:

1. Are of the high speed and quality of service;
2. Are free from latency and interference;
3. Receive priority from ISPs; and,
4. Have the highest degree of security.

Thus, the Commission must adopt a rule requiring ISPs to give priority to telehealth transmissions to and from edge providers and end users.

V. The Commission Must Consider Policies and Rules to Promote the Open Internet for Telehealth to Avoid an Arbitrary Process and to Lead to Rules that Align Telecommunications and Healthcare Policies

CTN is concerned that the Commission's consideration of how best to preserve the open Internet must not devolve into a parochial fight between those who believe in net neutrality and those who do not. Such a result will not take into consideration larger questions of industrial policy implicated by appropriate regulation of the ISPs – including how the Commission should specifically consider its healthcare-related goals in the context this rulemaking. The Commission must take into account the full gamut of content and applications and the needs of all edge providers and end users in the Internet ecosystem.

The National Broadband Plan started down that road by considering broadband in the context of various economic sectors. The NPRM, however, seems most concerned with actions by the ISPs that might block expression or curtail competition for content. Education is the only specific economic sector that the Commission mentions in the NPRM.³⁸ CTN trusts that the Commission does not mean to be so arbitrary as to limit

³⁸ NPRM para. 34.

its consideration of rules governing ISP management practices that will promote the open Internet to only to free expression, entertainment and information content and education applications.³⁹

With respect to net neutrality and its current service offering, CTN wants to make one point clear. Broadband connectivity provided by CTN depends upon ISP services offered by a number of companies. Consequently, medically-underserved communities, including safety net clinics as well as critical access and rural hospitals and their patients, depend upon subsidized service from the ISPs. We believe these ISPs provide, and will continue to provide, CTN, its members and their patients with the best quality of service possible.⁴⁰ CTN has never experienced any discrimination in favor of any other broadband traffic, including other healthcare services offered to other entities by ISPs.⁴¹

Moreover, net neutrality is not necessarily consistent with the open Internet for telehealth.⁴² In this context, it seems fair to ask questions along these lines: What issue should be more important to the Commission – *Grey's Anatomy* or real anatomy? Is it more important for the Commission's rules to address discrimination concerning *ER* reruns or to give priority to teleICU transmissions?

³⁹ Although CTN focuses in these reply comments to what the Commission must consider to preserve the open Internet for telehealth, CTN acknowledges that the Commission must consider this questions in various contexts, given the evolution of the "Internet of things." See, for example: Comments of Alcatel-Lucent dated July 15, 2014, p. 5; Comments of Cisco Systems, Inc. dated July 17, 2014, pp. 5,15, 21; Comments of CTA – The Wireless Association dated July 18, 2014, pp. 23-24; ; Comments of the US Chamber of Commerce dated July 15, 2014, pp. 6-7; Comments of Verizon and Verizon Wireless dated July 15, 2014, p. 40. For example, encouraging investment and deployment of broadband networks, software and applications to achieve job creation, energy and water conservation, agricultural production, and transportation and housing efficiency – in addition to making America more competitive – all depend on the open Internet. CTN notes that the evolution of goods and services delivery over the Internet in most of these industrial sectors effect telehealth edge providers and end users – perhaps disproportionately in rural and economically disadvantaged communities.

⁴⁰ If federal and state regulators approve the pending transactions concerning Time Warner Cable and Charter, Comcast will inherit contracts with CTN to provide access to broadband and telehealth services in California. CTN has no reason to believe that Comcast will not continue to honor these contracts.

⁴¹ Several ISPs are offering telehealth-related services, See for example, <http://www.verizon.com/powerfulanswers/solutions/healthcare/>, <http://www.corp.att.com/healthcare/>, <http://business.comcast.com/ethernet/industry-solutions/healthcare>, <http://business.timewarnercable.com/solutions/healthcare.html>, and <https://www.charterbusiness.com/content/healthcare>.

⁴² CTN acknowledges that some have opined that net neutrality regulation is necessary to promote telehealth. See Gaynor, Lenert, Wilson, et al., *Why common carrier and network neutrality principles apply to the Nationwide Health Information Network (NWHIN)* (2014), *J Am Med Inform Assoc*, 21:2–7; see also *It's Hard To Be Neutral About Network Neutrality For Health*, Health Affairs Blog (Aug. 18, 2014), <http://healthaffairs.org/blog/2014/08/18/its-hard-to-be-neutral-about-network-neutrality-for-health/>. From CTN's perspective with respect to telehealth transmissions, it is not clear whether common carrier regulation will achieve rules that encourage an open Internet for telehealth by requiring that ISP network management practices that give priority to all telehealth transmissions. Having said that, it may become necessary for the Commission to consider common carrier regulation of the ISPs for telehealth if the broadband capacity of specific ISPs is necessary to reach providers and patients in rural and disadvantaged urban areas and Title II is the only regulatory model to ensure that telehealth services are available to all Americans.

Although healthcare is such a large proportion of the nation's economy and success of federal policy in healthcare – including policy articulated by the Commission in other contexts – depends on the ability of HIT to reduce costs and improve patient outcomes, the NPRM raises no questions concerning telehealth. Only one Commissioner raised the issue of healthcare services provided over broadband.⁴³ CTN agrees with Commissioner Clyburn that the Internet has become "fundamental to all of us" and believes that the wider economic segments described in her comments should guide the Commission's consideration of the open Internet, generally, and for specific "ecosystems" that are evolving on the Internet.

Thus, any rules resulting from this NPRM to preserve the open Internet should be guided by a process that takes into account the specific needs for all types of transmissions in the "Internet ecosystem" to promote investment and deployment and propound any rules governing ISP network management practices to ensure that all Americans benefit in each ecosystem – including the ecosystem created by telehealth innovation and supported by federal healthcare policy. This will avoid any challenge that the Commission's process was arbitrary.

VI. Conclusion

CTN believes that rules to promote the open Internet for telehealth will: (1) protect patients, (2) give flexibility to healthcare providers, (3) encourage investment in broadband healthcare infrastructure, tools, software and applications and (4) advance health care policy. CTN believes that the Commission must evaluate its healthcare goal

⁴³ NPRM Statement of Commissioner Mignon L. Clyburn. ("[My mother] gave voice to three basic questions ...: (1) "what is this net neutrality issue?" (2) "can providers do what they want to do?" and (3) "did it already pass?" So, like any good daughter with an independent streak, I will directly answer my mother's questions in my own time and in my own way. But her inquiry truly echoes the calls, emails and letters I have received from thousands of consumers, investors, startups, healthcare providers, educators and others across the country who are equally concerned and confused. All of this demonstrates, (no pun intended) how fundamental the Internet has become for all of us. ... First, let me start from a place where I believe most of us can agree that a free and open exchange of ideas is critical to a democratic society. Consumers with the ability to visit whatever website and access any lawful content of their choice, interact with their government, apply for a job, even monitor their household devices. Educators have the capacity to leverage the best digital learning tools for their students. Healthcare providers treating their patients with the latest technologies – all of this occurring without those services or content being discriminated against or blocked.")

of “accelerating the adoption of health care technologies to improve health outcomes and lower health care costs” to frame rules in this NPRM.

The open Internet requires a unique approach to ensure that all Americans – providers and patients alike – have access to the full range of telehealth services – wherever and whenever they are needed. The Commission should use its legal authority under Section 706 in a variety of contexts – including in this docket – to achieve that result. The specific rules drafted by the Commission in this docket are insufficient to encourage investment in HIT and achieve healthcare policy goals for telehealth. Ultimately, the Commission must enact rules that will protect patients.

Thus, as a substantive matter, telehealth transmissions should receive priority from the ISPs – regardless of the network upon which the transmission is riding – particularly as telehealth services become more personally tailored, expand into the home, are delivered through mobile applications, and require bandwidth to support full motion synchronous video conference services. This is the only way to ensure that healthcare edge providers and end users, including patients, have the highest level of speed, reliability and security to avoid catastrophic results that will result from latency or network interference.