TELEMEDICINE AND THE NEED FOR NET NEUTRALITY PROTECTIONS

Telemedicine and its Reliance on Net Neutrality

Imagine a large tunnel with hundreds of lanes cars may use on their travels. Further, imagine a gatekeeper controlling the flow of traffic and allowing certain lanes to move faster than other lanes. Now, imagine gatekeepers allowing cars that pay to move through the preferred, faster tunnels first. The congestion, confusion, and issues may adversely affect both travelers and travels. Congestion of this kind is what may happen as regulations protecting net neutrality are removed and internet providers are allowed to act as their own gatekeepers. Internet travel lanes may be slowed, blocked, or prioritized based on monetary payments. Internet users may face similar paid prioritization problems. Access to content may be impacted through internet providers giving preference and faster utilization speeds to websites paying to be prioritized. Any web reliant portal or database not viewed as priority may be unable to function if the portal requires stable internet connection.

Eliminating regulations protecting net neutrality may adversely affect the ability to deliver health care through telemedicine. Telemedicine relies heavily on a stable and steady internet connection between providers and patients. Telemedicine tunnels may be blocked or viewed as low priority by internet providers. Low-income patients who cannot afford higher priority internet are likely to be hindered with slow internet connections. Rural areas, which already struggle with access to stable internet, may be completely isolated. This instability harms the efficiency and ability of telemedicine to function.

A grandfather in Massachusetts undergoes surgery to implant a defibrillator in his chest to monitor his heart after years of cardiac health complications. In recent years, as he experienced irregular chest issues the monitor would register the irregularity and communicate data to the doctor remotely, over wireless connections. At this point, the doctor is able monitor and reprogram the defibrillator to best correct the heart rhythm. This process limited office visits and hospitalizations by allowing the doctor to track the patient's heart condition over wirelessly collected data. Any change that limits equal internet accessibility threatens the ability for healthcare professionals to treat patients, such as the grandfather in Massachusetts, with lifesaving medical services at home.
Expanding access to healthcare is an issue at the crux of many legislative debates. Legislators continuously propose and implement new policies aiming to increase healthcare insurance coverage and reduce costs, usually with some success. These proposals, however, have not solved the access crisis Americans face. Telemedicine is a form of healthcare delivery projected to expand access to millions of Americans. This growth relies on the internet to reduce the number of office visits and extend the reach of health professionals to rural and low-income areas that may be otherwise underserved.

Changes to remove regulations protecting net neutrality threaten progress of telemedicine. Net neutrality is a concept describing the stricter regulations placed on internet providers limiting content controlling behavior and ensuring an equal and open internet for all. Net neutrality has been the center of several key debates in Washington, DC over the last few years. However, debates with net neutrality and the regulation of internet service providers has been ongoing for decades.

The President appointed Ajit Pai as chief chairman of the Federal Communications Commission (“FCC”) in 2017. Chief Pai stated that his primary concern is to repeal regulations supporting net neutrality previously passed in 2015 to spark competition and innovation among internet providers. Prior to the net neutrality era, various court cases arose in response to internet providers controlling the accessible content. Pai's 2017 change reverts back to lower regulation over internet providers, opening the gates for content control once again. The lack of regulation gives internet conglomerates the ability to promote, block, and influence consumer internet usage.

An internet controlled by a handful of internet providers does not provide a stable connection. These providers may charge users to access the internet and control the content seen, leaving room for monopolization and paid prioritization. Blocking and throttling content threatens the telemedicine industry, which relies on a fast and stable internet. If healthcare content is blocked giving preference to websites and content that paid for prioritization, patient's ability to access necessary cites and portals required for telemedicine services may be hindered. Or, healthcare portals may be forced to increase their pricing to compete in the paid prioritization landscape, eventually leading to increases in the cost of supplying telemedicine. These increases in cost would make the goals of telemedicine to help lower healthcare costs.

Continuing telemedicine advancements rely on an internet stream allowing patients and doctors alike to access necessary databases, electronic health records “EHRs”, and more. This note will explore the development of telemedicine in part I, the rise of net neutrality and related regulations in part II. Part III will explore the potential growth that telemedicine poses for healthcare access and the effects of limitations on net neutrality protections. Additionally, the paper will review past net neutrality debates distinguishing from current debates, and offer guidance on reasonable solutions to prevent net neutrality rollbacks in part IV.

The Transition to Telehealth

Advancements in health may be linked to advancements in technology. The widespread growth of technology and the developments in healthcare appear linked, as technology opens doors for the progression of healthcare. One of the earliest examples of a healthcare technology crossover is the transmission of medical information, x-rays, and health data from astronauts traveling in space. Astronauts in space require constant monitoring by physicians on Earth. As expeditions through space become longer and cover greater distances, more health information needs to be assessed. In person health services is not always an easily available option therefore allowing remote access methods through telemedicine can help combat any potential gaps. These communications from space are early examples of remote access telemedicine services taking the place of in person visits.
After realizing the possibilities to remotely monitor astronauts, physicians investigated providing care remotely for everyday healthcare. Physicians’ ability to reach patients outside of the office grew through the use of video, telephone, internet use. As technology expanded to include phones, televisions, and computers, the healthcare community gained new methods in reaching patients. Healthcare services expanded to include home monitoring, specialized treatments, video conferencing, and educating patients in home treatment. Additionally, it created a window for continuing medical education through talks, lectures, and instructional experiences.

The American Recovery and Reinvestment Act of 2009 includes the Health Information Technology for Economic and Clinical Health Act (“HITECH Act”) provision. The HITECH Act promotes increasing integration between healthcare and technology. It establishes grants and other economic incentives to encourage the development of telehealth infrastructures in health facilities across the country. HITECH strengthened the Health Insurance Portability and Accountability Act (“HIPAA”) protections regarding electronic health record (“EHR”) information and imposed penalties for organizations not actively integrating telemedicine. This provision aims at incentivizing growth in telemedicine.

The Patient Protection and Affordable Care Act (“ACA”) includes language supporting the growth of telemedicine both directly and indirectly. The ACA mandates that Medicaid begin to cover telehealth services, though the states may dictate level of coverage. While the ACA mandated coverage for all citizens, the telehealth provision exemplifies the importance of telemedicine in the future of healthcare. Low-income patients can benefit from telemedicine services to limit the use of emergency rooms for non-emergent issues. Telemedicine can allow patients to receive healthcare treatment without an office visit, cutting down on costs. Telemedicine can also help with preventative care. Telehealth is a growing field predicted to be the future in expanding care to low-income and rural areas. The passage of the American Health Care Act (“AHCA”) may hinder the market for telemedicine as it repeals the individual mandate of the ACA.

This technology is growing beyond the walls of hospitals and physician offices, and into the hands and homes of patients everywhere. Consumers and physicians can access records and monitor their health information through applications linked to physicians and more, allowing for better continuity of care as EHR's are accessible across healthcare organization. If documents, x-ray's, medical history, and prior treatments may be accessed quickly, then healthcare organizations can provide higher quality levels of care at more efficient rates.

The Net Neutrality Network

The FCC is a product of the Communications Act of 1934. The Communications Act seeks to regulate communication technologies, originally including the telephone, telegraph, and radio. The Communications Act established regulation after years of monopolization issues in the radio business. The Telecommunications Act of 1996 was an amendment to the Communications Act in order to modernize the legislation to include developments such as the internet.

The Telecommunications Act includes several provisions broken down by title. These titles are the center of the net neutrality debate. Title I includes Telecommunication Services, while Title II categorizes Broadcast Services. Each title describes specific duties, requirements, and levels of regulation under the FCC. The type of regulation the FCC requires for internet providers is an ongoing debate dating back to the inception of the internet. Some argue internet providers shall be regulated under Title I with less stringent, “light touch” regulation, while others prefer a Title II classification with heavier regulation.
In 2002, the FCC classified broadband internet access under Title I of the Communications Act of 1934 as interstate information service. This decision resulted in lighter regulation by the FCC and gave internet providers more freedom. The debate over whether to heavily regulate internet service providers arose, with advocates creating the concept of “net neutrality” and beginning the fight for open and equal internet access for all. As the internet grows in popularity and develops into a staple of daily life, consumers are realizing their content is controlled by issues that exists between internet providers, such as Verizon and Comcast.

The FCC states that the broadband industry has guiding principles, such as content freedom and internet openness, for preserving internet freedom to fostering innovation and competition. As internet usage continued, courts were faced with issues caused by cable companies blocking and favoring particular content to the benefit of the cable company. In the 2005 NCTA v. BrandX decision, the Supreme Court affirmed the FCC’s ability to classify broadband providers as a Title I information service provider (“ISP” or “ISP’s”) and leave ISP's to regulate themselves. Shortly thereafter, ISP's such as AT&T made statements that allowing users to access the internet for free would be bad for business, and proposed the paid prioritization concept. Content control began to infuriate users leading to court cases with internet conglomerates such as Comcast and AT&T.

In 2010, the FCC applied an Open Internet Order to stop the content blocking and inequalities that ISP's created. This stirred the debate by net neutrality supporters to reclassify the providers as common carriers under Title II, increasing the FCC’s regulation over ISP's. These developments gave the public reason to confront ISP's for controlling their content and gave the FCC the ability to move forward with reclassification. In spite of the FCC order, ISP's still attempted to implement programs such as sponsored data and edge user agreements to create paid prioritization. In 2015, the FCC released a proposal that would align with the internet protection President Barak Obama and the public were asking for.

Former President Obama and millions of consumers advocated for stricter regulations over ISP's to preserve an open and free internet. Supporters flooded the comments section of the FCC's 2015 proposal in support of equal internet access and freedom of the internet. The proposal was met with resistance by many, including Ajit Pai. The resistant voices claim that net neutrality kills innovation by not incentivizing ISPs to create and by directing finances to regulatory compliance instead of towards infrastructure development and innovation. Despite resistance, the FCC moved forward in 2015 with Title II Net Neutrality rules to classify ISP's as “common carriers”, implementing stronger protections and heavier regulations. The “Open Internet” rule was released, challenged, and affirmed by mid-2016. The overall message was content control by ISP's is not, and should not, be allowed.

Obama's support for the Title II reclassification and his call for strict ISP regulation is a key point in the battle for net neutrality. The Trump administration appointed Ajit Pai as the Commissioner Chair of the FCC in 2017. Pai spoke vehemently against the 2015 net neutrality supporters and claims the 2015 Open Internet rule infringed on ISP's ability to innovate. Chairman Pai vocalizes his desire to reverse the previous order and allow ISPs more freedom with less regulation, with promises to help the economy. In May 2017, the FCC voted to begin the process of dismantling net neutrality by removing the Title II classification for ISP's. The new rule call for allowing market competition to exist and placing less regulatory restrictions on the decisions of internet service providers. Leaders argue Pai's continued role as chair of the FCC is counterproductive to the purpose of the commission, placing media conglomerates over the opinion and lives of billions of consumers. In early October 2017, despite public outcry, the FCC confirmed Chairman Ajit Pai and the fear that the internet would no longer be open and free to all.

In December 2017, the FCC adopted Ajit Pai's proposed roll back of the Open Internet Rule and ended the concept of net neutrality. This decision was met with public outcry and went against the desires of most Americans. The “Restoring
Internet Freedom” order calls for ISP transparency and less regulation over the ISP’s to promote creation.\textsuperscript{119} Pai argued that the decision would allow ISP’s to reallocate the resources typically used for regulatory compliance measures for expanding the internet infrastructure.\textsuperscript{120} Pai, along with major ISPs, promised that ISP transparency and consumer protection by the FCC will protect the open internet and prevent the abuses that happened the last time light regulation was in place.\textsuperscript{121} There are no guarantees that these practices will not continue, but ISP’s have asked for consumers trust during this time.\textsuperscript{122}

Twenty-two attorney generals and various consumer advocacy groups have filed suits against the FCC in response to the 2017 change.\textsuperscript{123} While the Senate voted to roll back the title I classification, the House was less successful.\textsuperscript{124} Pai saw this as a victory and described the increase in broadband speeds, the increase in internet access since the Level I classification took place.\textsuperscript{125} Despite Pai's claims, Congress held a net neutrality oversight \textsuperscript{*44} committee in February of 2019.\textsuperscript{126} The Communications Subcommittee agreed on the need for a bipartisan legislation to protect consumers from paid prioritization and deceptive practices by ISP's.\textsuperscript{127} These actions come in the wake of ISP's such as AT&T implementing fast-lanes and other paid prioritization programs that existed before the Open Internet Order of 2010.\textsuperscript{128} The uproar from citizens for legislators to act has led some to desperation and even violent threats.\textsuperscript{129} The 2017 decision has sparked the net neutrality debate and brought internet freedoms to the forefront of many debates.\textsuperscript{130}

The Communications Subcommittee produced several proposed bills that call for either reclassifying ISP's as Title II common carriers or for leaving the Title I classification but banning certain content control practices.\textsuperscript{131} Despite the Subcommittee agreeing that bipartisan efforts are required, the Republican and Democratic parties cannot seem to find middle ground.\textsuperscript{132} Neither party is satisfied with the proposal of the other and leads to the idea that this type of bipartisan divide will continue to encourage fights over net neutrality for years to come.\textsuperscript{133}

*45 The Relationship of Telemedicine and Net Neutrality

It is estimated that approximately 7 million patients will utilize telemedicine by 2018.\textsuperscript{134} Telehealth services cover a wide variety of illnesses and treatments.\textsuperscript{135} Telemedicine includes preventive care, follow-up appointments, vital monitoring, and more.\textsuperscript{136} Hospitals and physicians utilize telemedicine daily to provide better health care.\textsuperscript{137} This type of treatment relies on internet connections.\textsuperscript{138} The 2017 FCC decision to lower regulation of ISP’s has been met with millions of opposing comments concerned with access to content, including telehealth services.\textsuperscript{139} The recent growth sustained \textsuperscript{*46} through internet access in the healthcare industry and telemedicine may be hindered by the 2017 Restoring Internet Freedom Rule that replaced net neutrality protecting rules.\textsuperscript{140}

Telehealth services require a consistent stream of internet by consumers to be an effective and viable option for healthcare.\textsuperscript{141} Health organizations have requested more funding and support from the FCC to expand internet and telemedicine access to low-income and rural areas.\textsuperscript{142} These areas already face challenges because of lack of internet lines, connections and quality healthcare.\textsuperscript{143} Ajit Pai claims that the 2017 net neutrality change will aim to close the gaps and expand internet coverage, allowing internet reliant systems, such as telehealth, to flourish.\textsuperscript{144} In 2018, the FCC raised the Rural Health Care Program annual budget cap to 571 million dollars, showing the dedication of the FCC to expanding access to telehealth services.\textsuperscript{145} Despite these claims, many fear that the Restoring Internet Freedom Rule will do the opposite and hinder the expansion of internet and healthcare coverage.\textsuperscript{146}

*47 Allowing internet service providers to self-regulate may leave room for abuse of power.\textsuperscript{147} The providers may be able to block and promote content, slow down the ability of certain users or websites to work, and make internet usage far more complicated.\textsuperscript{148} In a world of growing healthcare costs and threats to insurance coverage, net neutrality rollbacks and paid
prioritization pose the risk of additional costs to consumers that many do not have the funding for and thus will be negatively impacted.\textsuperscript{149}

Additionally, areas of high concentration of internet usage face access issues.\textsuperscript{150} The more people attempting to use an areas internet access will lead to more congested, slowed down, and unpredictable internet access.\textsuperscript{151} This unpredictability may be detrimental for patients with electronically monitored health conditions, such as built in defibrillators requiring consistent internet to process the data efficiently to ensure the patient's device adjusts and functions properly.\textsuperscript{152} Healthcare is not an area that can afford unreliable access when it already faces shortages in providers, high costs, and limited access.\textsuperscript{153} For telemedicine to continue to flourish, reliable internet is necessary.\textsuperscript{154} Proposals to protect healthcare against any net neutrality roll backs include reclassifying ISPs as Title II, banning the content control behaviors, allowing states to regulate their own internet, or creating special internet exceptions for any healthcare related internet usage.\textsuperscript{48}\textsuperscript{155} The only way to protect healthcare, is to restore net neutrality and protect a free internet.\textsuperscript{156}

**Telemedicine and the Need for Establishing Net Neutrality**

Telehealth is not a perfect system.\textsuperscript{157} Issues regarding patient confidentiality, HIPAA compliance, physical limitations, current payment models, and physician resistance all pose threats to the expansion of telemedicine.\textsuperscript{158} With time and planning, these issues may be mitigated if not resolved.\textsuperscript{159} The largest threat to telemedicine would be the loss of equal internet access.\textsuperscript{160} Without the continued progression of free and open internet, telehealth may face major setbacks.\textsuperscript{161}

The 2017 change by the FCC to eliminate net neutrality threatens the electronic health system that exists today.\textsuperscript{162} These systems rely on stable and equal internet, and cannot have ISPs blocking, slowing or controlling content.\textsuperscript{163} The recent growth sustained in the healthcare industry due to internet accessibility will be hindered by the 2017 FCC decision, despite promises of ISP transparency and funding to assist rural areas.\textsuperscript{164} Patients, physicians, hospitals, and more will struggle to communicate with one another if some can afford paid prioritization while others are stuck in slow lanes or blocked from the content entirely.\textsuperscript{165}

Major internet conglomerates are actively involved in supporting the change.\textsuperscript{166} Both sides are fighting and lobbying vehemently, while simultaneously claiming arguments that contradict one another.\textsuperscript{167} ISPs claim that the 2017 decision to reclassify ISPs under Title will increase internet growth, while those in opposition argue that net neutrality is one of the only things protecting internet growth.\textsuperscript{168}

\textsuperscript{50} The decision to revert to the previous lighter regulation over ISPs aims to restore investments in internet innovation and allow the internet industry to flourish.\textsuperscript{169} While some argue that the new changes will hurt internet access, the FCC claims that the change will lead to increases in investment that will expand access to low income and rural areas.\textsuperscript{170} Little has been said to prove minimizing government regulation over internet providers will prevent the previous issues of throttling and blocking content.\textsuperscript{171} ISPs, like Comcast, are speaking out against rumors that such practices will not occur if regulations are minimized.\textsuperscript{172} Organizations supporting the new FCC decision argue that there are other regulations, outside of the Title II classification, that will prevent the behavior that consumers fear.\textsuperscript{173} This causes the public to question why regulations were put in place if conglomerates will act in accordance with no government interference.\textsuperscript{174}

ISPs feel that the money lost in regulatory compliance is more useful for innovation and investment in the internet.\textsuperscript{175} Chairman Ajit Pai stated “the more heavily you regulate something, the less of it [investment in broadband infrastructure] you're likely to get”.\textsuperscript{176} This backwards logic may lead some to believe that light regulations are intended to help citizens.\textsuperscript{177} Some
ISPs are already showing signs of returns to paid prioritization. 178 Northeastern University released information claiming that new research shows that within the first year of the net neutrality rollbacks, ISPs are already slowing down internet access. 179 Researchers have developed an application for devices to track net neutrality violations including throttling and content blocking. 180 This data showcases the idea that ISP's cannot self-regulate without reverting to their prior content controlling behavior to financially benefit their own organizations. 181 The impact of Title II was largely seen in low-income and rural neighborhoods - the locations most impacted by healthcare access. 182 The 2017 decision returns to a Title I classification with light regulations in the hopes to expand access to high-speed internet, to create jobs and to boost market competition. 183 This argument directly contradicts the notion that healthcare access will be impaired without net neutrality. 184

On the other hand, opponents to the Title I reclassification argue that the change will hurt, not help, the growth of the internet and healthcare. 185 While ISPs claim that there will be no throttling, content blocking, or filtering of the internet without Title II *52 regulations, many are skeptical. 186 In the years before the 2015 decision to reclassify ISPs as common carriers under Title II regulations, instances of content being blocked, slowed down, or filtered by the ISPs in order to redirect consumer internet usage towards or away from particular websites. 187 These content filters will create an unpredictability in the internet that will harm equal access. 188

Tiered internet access does not cooperate with the demand for high speed and consistent internet access required by connected telehealth forums. 189 ISP's argue that healthcare facilities will be able to afford proper internet access; but at what cost to the consumer? 190 In the time of increasing healthcare costs, it is possible that healthcare facilities will pass these cost increases to the consumer. 191 Additionally, while large healthcare systems have adequate finances to afford any necessary internet, many small, community hospitals already struggle to maintain financially stability. 192 In recent years, the amount of small, community hospitals declined due to financial pressures caused by major healthcare systems. 193 Hindering the access of these community hospitals to telehealth by complicating the internet access system will remove a major a key component to their infrastructure. 194 If internet roll backs continue to diminish the existence of broadband in low income and rural areas, access to healthcare through important telehealth programs will be impacted. 195

*53 The solution may not necessarily be removing the Title I reclassification, though members of Congress debate this issue back and forth. 196 Perhaps allowing ISP's to retain their investment capital and provide for further internet innovation would be beneficial. 197 Title II regulations intended to regulate issues that arose in the 1930's, decades before the internet became the marvel that it is today. 198 It is not the first time that innovation has outpaced policy, and thus it is time for policy to update to reflect the complexities of the internet. 199 If Title I and II do not suffice for either ISP's or consumers, then perhaps the best option is to create a category specifically tailored to the internet of today with anticipated room for the changes of tomorrow. 200 Though this administration of the FCC appears to support very light regulatory control over the internet, a special protection for internet sites and transmissions related to healthcare would go a long way to protect consumers. 201 Requirements intended to protect healthcare consumers and expand broadband access to low income and rural areas are just an example of ways that the FCC can achieve the goals of ISPs while protecting consumers and healthcare. 202

Perhaps the greatest factor of incorporating healthcare and technology beyond physician and patient compliance may be access to the internet. 203 Telemedicine utilizes internet connections to connect patients to healthcare providers without requiring in-person meetings. 204 Without the internet, this connection cannot effectively happen and the capabilities of telemedicine are stunted. 205 As the internet extends to larger populations in more areas, the ability to access telemedicine also expands. 206 The availability of the internet allows the availability of telemedicine, and thus the two are intertwined. 207


*54 Conclusion

A bipartisan effort must resolve the issues surrounding the regulation of ISP’s to protect consumers and the equality of the internet. As consumers become more reliant on stable internet connections for telehealth services and other internet based services, the issue of net neutrality will continuously arise. The bipartisan divide extends into nearly every area of politics and net neutrality is no different. However, the debate surrounding net neutrality cannot keep switching back and forth as different parties rise to seats of power. Both parties must work together to reach a solution that is not motivated by party or large conglomerate lobbying, but rather a solution that protects and benefits the consumers and services that the internet aims to serve.

The Restoring Internet Freedom Rule of 2017 should be reversed and return ISP’s to common carrier regulations under Title II of the Telecommunications Act of 1996. The internet has flourished and allowed markets, such as telemedicine, to expand alongside it during the past few years of “net neutrality”. No system is perfect and the previous net neutrality rules may not have pleased those that are more interested in innovation; these are factors to consider when writing a new rule. To change the rule and not include any stipulations other than transparency is putting too much trust into ISPs. The law being proposed by legislators to prevent content control by ISP's would be a very important compromise for both sides. The internet must remain free and open to all to ensure that people, like the grandfather in Massachusetts receiving telehealth services, can continue to receive necessary services without the control of ISP's.

Footnotes

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2 See Paid Prioritization, supra note 1. The providers throttle, or slow down, content that is not on their preferred list. Id. Providers can also block content completely, therefore benefiting themselves and those that can pay to be a preferred site. Id.

3 Fact Sheet: Chairman Wheeler Proposes New Rules for Protecting the Open Internet, FCC (2018), https://apps.fcc.gov/edocs_public/attachmatch/DOC-331869A1.pdf (last visited Mar. 13, 2018) (detailing the actions of providers acting as gatekeepers) [hereinafter “Fact Sheet: Chairman Wheeler”]. The 2015 chairman of the Federal Communications Commission described the previous behavior of broadband providers as gatekeeping. Id. The providers would block, throttle, and prioritize users and content for monetary gain. Id.

4 See Tom, supra note 1 (explaining the congestion that will occur as a result of paid prioritization).

5 Tim Wu, A Proposal for Network Neutrality (June 2002), http://www.timwu.org/OriginalNNProposal.pdf. Tim Wu coined the term “network neutrality” in 2002 to describe a concept of equal internet access without provider control. Id. Net neutrality is a movement supporting stricter regulation over broadband providers to prevent discriminatory behaviors against customers and cites. Id. Discriminatory behaviors include throttling, fast lane creation, content blocking, and paid prioritization for both customers and websites. Id. “‘Net neutrality’ rules went from a mere academic proposal to a part

6 See Fact Sheet: Chairman Wheeler, supra note 3.

7 Id. (defining the various behaviors of Internet Service Providers).

8 Id.

9 Id.

About Telemedicine, AM. TELEMEDICINE ASS’N (last visited Mar. 13, 2018), http://www.americantelemed.org/main/about/telehealth-faqs-. Telemedicine is the “remote delivery of health care services” utilizing technology and the internet. Id. Telemedicine allows physicians to monitor patients’ vitals, provide consultations, and in some cases provide treatment. Id. Remote services work through video conferences, health and wellness apps on cellular devices, and more. Id. Telemedicine may remove the need for in-person visits. Id. See also, Telemedicine, MEDICAID.GOV (last visited Mar. 13, 2018), https://www.medicaid.gov/medicaid/benefits/telemed/index.html (gives brief description of telemedicine).

10 Meg Bryant, Better Broadband Needed to Meet Telehealth Needs, USDA Report Warns, HEALTHCAREDIVE (Nov. 8, 2018), https://www.healthcaredive.com/news/better-broadband-needed-to-meet-telehealth-needs-usda-report-warns/541717/. Despite millions of dollars being invested to increase broadband access to internet, areas still struggle to gain a reliable internet connection. Id. A lack of reliable internet hinders the ability for consumers to keep up with the innovations of telehealth technology. Id. See also Eric Wicklund, USDA Report Highlights Challenges to Rural Telehealth Adoption, MHEALTHINTELLIGENCE (Nov. 7, 2018), https://mhealthintelligence.com/news/usda-report-highlights-challenges-to-rural-telehealth-adoption. Rural areas are less likely to utilize telehealth services due to a lack of access to high-speed broadband necessary to engage in telehealth services. Id.

11 Julie Spitzer, 3 Ways the Net Neutrality Repeal Could Affect Healthcare, BECKER’S HEALTHCARE (Dec. 14, 2017), https://www.beckershospitalreview.com/healthcare-information-technology/3-ways-the-net-neutrality-repeal-could-affect-healthcare.html. Telemedicine relies on stable internet connections by both healthcare providers and patients. Id. If either side is not able to attain adequate internet service, telemedicine may not work. Id.

12 Erik Sherman, This Is How Net Neutrality’s End Will Hurt Low to Moderate Income People, FORBES (last visited March 10, 2018), https://www.forbes.com/sites/eriksherman/2017/12/15/this-is-how-net-neutralitys-end-will-hurt-low-and-moderate-income-people/#3c2bf1a6402b. The internet has become a hub for many individuals and is helping to level the playing field for low income people regarding job searches, education, and even government services. Id. Removing internet access for low income areas can be detrimental to the services on which they rely, on which are moving almost completely to online forums. Id. Without equal internet freedoms, these users may not be able to afford paid prioritization, adding another deficit to their struggle. Id.

13 Fred Bazzoli, FCC: Net Neutrality Demise Worries Providers, HEALTH DATA MANAGEMENT (Mar. 2018). Internet access depends on providers expanding the network to access broad geographic areas. Id. Rural areas still face lack of internet access, and net neutrality will complicate this further. Id. Providers are not held accountable for expanding the network without the net neutrality regulations. Id. Of the 34 million Americans lacking access to adequate broadband, forty percent live in rural areas. See also Fact Sheet: Telehealth, AM. HOSPITAL ASS’N (2018), available at https://www.aha.org/system/files/2018-04/fact-sheet-telehealth-2018.pdf.

14 See Spitzer, supra note 8 and accompanying text.

15 See Mintu P. Turakhia, Telemedicine for Management of Implantable Defibrillator, CIRCULATION: ARRHYTHMIA & ELECTROPHYSIOLOGY (2017) (discusses implantable cardioverter-defibrillators function). Innovations such as the implantable cardioverter-defibrillators utilize wireless monitoring to lessen the need for in person check-ups. Id. Though the device does not eliminate the need for home visits, the ability to regulate the device remotely can prevent visits for small, simple fixes. Id.
See Implantable Cardioverter Defibrillator (ICD) Insertion, JOHN HOPKINS MED. https://www.hopkinsmedicine.org/healthlibrary/test_procedures/cardiovascular/implantable_cardioverter_defibrillator_icd_insertion_92,p08774 (last visited Mar. 3, 2019) (describing the various uses and functions of a defibrillator device). A defibrillator is implanted and continuously monitors and regulates the heart with the use of a home monitor. Id. The home monitor utilizes internet to transmit necessary information across the internet, wirelessly. Id.

See Turakhia, supra note 16. Implantable cardioverter-defibrillators send data to a device located in the patient home. Id. The data are then sent to the physician and staff to monitor the heart condition and functioning. Id. When the machine detects an error or issue, the physician is alerted and may reprogram the device accordingly to help the patient. Id.

Turakhia, supra note 16.

See Turakhia supra note 16. The process of the device requires wireless connections to transmit the data and allow for reprogramming. Id. These types of devices, and medicine, aim to help those with limited access to health care facilities such as the elderly/disabled and people in rural or low-income areas. Id.

See Mariah McGill & Gillian MacNaughton, The Struggle to Achieve the Human Right to Health Care in the United States, 25 S. CAL. INTERDIS. L.J. 626, 629 (2016). While international law has acknowledged health care as a human right, the United States still struggles with this concept causing millions to be uninsured, underinsured, or on the verge of losing coverage. Id. The government and partisan divides struggle to maintain health care costs and ensure equal and effective coverage for all. Id. Debates over what type of payer system to use (i.e. single payer) and how to expand healthcare coverage are ongoing. Id. See also Looking Beyond the Obamacare Debate to Improve Healthcare, N.Y. TIMES (Aug. 26, 2017), https://www.nytimes.com/2017/08/26/opinion/sunday/obamacare-universal-health-coverage.html (last visited Mar. 4, 2019) (discussing the debates over healthcare and provides arguments of key political figures such as former President, Barrack Obama).


See Telehealth: Helping Hospitals Deliver Cost-Effective Care, AMERICAN HOSPITAL ASSOCIATION, https://www.aha.org/system/files/content/16/16telehealthissuebrief.pdf (last visited Mar. 1, 2019) (discussing the benefits of telemedicine). Telemedicine allows doctors to monitor acute illnesses and patient vitals without requiring in office visits. Id. While it does not remove all need for an in-office visit, it does substantially cut down on the number of visits. Id. The benefits can be seen through the improvements in healthcare through the Veterans Health Administration’s fully integrated telemedicine program. Id.

See About Telemedicine, supra note 10 and accompanying text. Though additional devices may be necessary for particular treatment, many telemedicine methods simply require internet access. Id.

28 See Wu, supra note 5 and accompanying text. Wu's concept of net neutrality supports strong regulation of ISP's to prevent content control and ensure equality and freedom on the internet. Id.

29 Associated Press, How ‘Net Neutrality’ Became a Hot-Button Issue, WTOP (Nov. 5, 2018), https://wtop.com/education/2018/11/how-net-neutrality-became-a-hot-button-issue/ (last visited Mar. 3, 2019) (discussing the debates surrounding net neutrality). Net Neutrality and the changes proposed by the FCC is a key issue being discussed throughout the country. Id. Part of the popularity is linked to the widespread use of the internet and therefore consumers are concerned about the widespread impact of ISP content control. Id. Additionally, both President Trump and Chairman Ajit Pai have made net neutrality changes in their key changes to occur after the Obama Administration. Id.

30 Network Neutrality Legislative History, AM. LIBRARY ASS’N (last visited Feb. 12, 2019) http://www.ala.org/advocacy/telecom/netneutrality/legislativeactivity (explaining the various proposals and laws for net neutrality in the past). Net Neutrality has been debated since 2009. Id.


32 Ajit Pai, supra note 23 and accompanying text; Kang, Cecilia, Ajit Pai, FCC Chairman, Moves to Roll Back Telecom Rules, N.Y. TIMES (Apr. 19, 2017) https://www.nytimes.com/2017/04/19/technology/ajit-pai-fcc-telecom-deregulation.html. Pai wants less regulation over ISP's to encourage innovation and competition in the name of economic growth. Id. Within months of his appointment, Pai brought the topic of net neutrality to the forefront in hopes to change the regulatory framework the Obama administration, on which Pai sat, put in place. Id.

33 Nat'l Cable & Telecommms. Ass'n v. Brand X Internet Servs., 545 U.S. 967, 1001 (2005). The court deferred to the Federal Communications Commission's conclusion that broadband should exist in a regulatory environment with minimal restrictions in order to promote investment and innovation. See also Recording Indus. Ass'n of Am., Inc. v. Verizon Internet Servs., 359 U.S. App. D.C. 351 F.3d 1229, 1234 (2003). The court noted that information stored on ISPs creates a safe harbor from copyright liability so long as the ISP meets conditions regarding the removal of infringing material and a lack of financial benefit from said material. See also Verizon & AT&T, Inc. v. FCC, 413 U.S. App. D.C. 770 F.3d 961, 967 (2014). The court deferred to the FCC and the connection between the FCC's purpose and Rule 32 accounting rules. Comcast Corp. v. FCC, 600 F.3d 642, 651 (2010). Internet service providers have a history of throttling, blocking, and prioritizing content in their own interest. Nat'l Cable & Telecommms. Ass'n, 545 U.S. at 1003. The court once again deferred to the Federal Communications Commission's expertise in reviewing complex questions of internet providers controlling accessible content. Id.

34 See supra Ajit Pai, note 31 and accompanying text. Without regulation, there is nothing to prevent the behavior that occurred the last time there was light regulation over ISPs. Nat'l Cable & Telecommms. Ass'n, 545 U.S. at 976. ISP's were lightly regulated pre-2015, resulting in numerous abuses of power. Id. The net neutrality order of 2015 protected consumers and ensured internet freedom. See also Fact Sheet: Chairman Wheeler, supra, note 3 and accompanying text. Reverting to the prior regulatory approach will likely result in reverting to prior ISP practices. Id.

35 See Fact Sheet: Chairman Wheeler, supra, note 3 and accompanying text.

36 See Wu, supra note 5. Without regulation, ISP's will control content in their favor. Id. This may harm small businesses and those that cannot afford paid prioritization. Id.
See id.; Bode, Karl, ATT Fails in Bid to Kill FTC Authority Over Broadband Monopolies, TECHDIRT (Feb. 28, 2018, 6:39 AM), https://www.techdirt.com/articles/20180226/14021639311/att-fails-bid-to-kill-ftc-authority-over-broadband-monopolies.shtml. The net neutrality rules held major corporations accountable and created equal access and opportunities to protect smaller businesses. Bode, Karl, ATT Fails in Bid to Kill FTC Authority Over Broadband Monopolies, TECHDIRT (Feb. 28, 2018, 6:39 AM), https://www.techdirt.com/articles/20180226/14021639311/att-fails-bid-to-kill-ftc-authority-over-broadband-monopolies.shtml. Without the regulatory framework to protect equal access, ISP's may return to previous content controls and stifle the innovation of small companies that cannot afford to keep up, thus creating a monopoly. Id.

See Spitzer supra note 12; Telemedicine Growth Dependent on Faster Regulatory Review, Genachowski Says, Washington Internet Daily (Aug. 17, 2010). Telemedicine is still a growing field that requires innovation in technology to keep up. Id. This innovation is directly related to net neutrality. Id.

Id.

Id.

Id.

See Types of Telehealth, NORTHEAST TELEHEALTH RESOURCE CENTER (last accessed on Feb. 26, 2019) http://netrc.org/types-of-telehealth/. Databases include services such as “mHealth”. Id. “mHealth” is a mobile health system utilizing applications for laptops, phones, and tablets. Id. These databases allow for communications, patient monitoring, data sharing, and more. Id.

See id. Electronic health records allow communication between patient and provider, as well as to providers and healthcare facilities to share x-rays, medical records, medical history, treatment plans, and more. Id. EHRs are the movement away from paper files so that documents and medical information are easily accessible, transferable, and up to date to ensure the highest quality of care. Types of Telehealth, NORTHEAST TELEHEALTH RESOURCE CENTER (last accessed on Feb. 26, 2019) http://netrc.org/types-of-telehealth/.

See id. Other types of telemedicine include video conferences and patient monitoring. Id. These types of communication allow patients to bypass the in-office visit. Id.

See infra 48 (providing history on the development of telemedicine). See infra 77 (discussing how net neutrality will play a role in the healthcare industry ultimately for patients).

See infra 134 (stressing the importance of telemedicine and the rising increase of popularity).

See infra 127 (introducing the debates for different classifications and limitations to be placed on internet availability).

See Scott Rupp, A Quick Look at The History of Telemedicine, NUEMD (Jan. 4, 2017) https://www.nuemd.com/news/2017/01/04/quick-look-history-telemedicine. The invention of telephone communication allowed doctor visits to cut down because simple health-related information could be communicated in a phone call. Id. The television was utilized for psychiatric treatments. Radiology results were transmitted across telephone cables. Id. The increase of technological advancements was closely followed by the development of healthcare innovations. Id.


See id. (discussing specific early adoption of technology for the delivery of healthcare information).

See id. In the beginning of space travel, scientists were not positive about the effects of space on the human body. See Rupp, supra note 26. The original monitoring was utilized for information such as temperature, respiratory rate, and blood pressure. Id.
See id. The longer astronauts were gone, the more complex the healthcare became. Id. Therefore, healthcare had to be provided to monitor, diagnose, and treat astronauts over long distances and times. Id.

See R. Bashur & J. Lovett, Assessment of Telemedicine: Results of the Initial Experience, AVIAT. SPACE ENVIRON. MED. (Jan. 1997); Rupp, supra note 36. Not all patients can easily access healthcare and thus telemedicine shortens the gap and brings healthcare to the patient. See also Telemedicine: Opportunities and Development in Member States, Global Observatory for eHealth Series Volume 2, WHO (2010), http://www.who.int/goe/publications/goe_telemedicine_2010.pdf (last visited Mar. 1, 2019).


See Rupp, supra note 48.


See HITECH, supra note 60. The Act creates grants and penalties to incentivize organizations to increase health technology integration. Id. The grants reward those that show a substantial effort to integrate telehealth practices and penalizes those that do not. Id.

See HITECH, supra note 60.

See HITECH, supra note 60. See also HIPAA Guidelines on Telemedicine, HIPAA JOURNAL (last visited Feb. 2, 2019), https://www.hipaajournal.com/hipaa-guidelines-on-telemedicine/. Compliance with the guidelines of HIPAA is necessary to attain payment. Id.

See HITECH, supra note 60.


See id.; Telemedicine, MEDICAID.GOV (last visited Mar. 13, 2018). States vary greatly on the level of coverage for telemedicine. All Provider Bulletin: 281: Access to Behavioral Health Services Through Use of Telehealth Options, MassHealth (Jan. 2019), https://www.mass.gov/files/documents/2019/01/23/all-provider-bulletin-281.pdf (expanding MassHealth coverage to include telepsychiatry). By covering telepsychiatry under MassHealth, Massachusetts has taken a step forward in expanding the use and integration of telehealth services in the Commonwealth. Id. Telepsychiatry, a division of telemedicine, was previously not covered under MassHealth, as Massachusetts had the ability to decide the level of coverage for telehealth services. Id.
Patient Protection and Affordable Care Act supra note 65. By requiring Medicaid to cover telehealth services, more patients will be able to benefit from telemedicine services. Id. Coverage is one of the barriers preventing patients from utilizing telemedicine services and by providing coverage under Medicaid programs, the millions of Americans insured through Medicaid will benefit. Id. Additionally, many private insurers may feel the need to follow the path of Medicaid. Id.

Erik Sherman, This Is How Net Neutrality's End Will Hurt Low to Moderate Income People, FORBES (last visited March 10, 2018), https://www.forbes.com/sites/eriksherman/2017/12/15/this-is-how-net-neutralitys-end-will-hurt-low-and-moderate-income-people/#3c2b1a6402b. Many low-income residents utilize the emergency room for non-urgent reasons. Katrina Kubicek, et al., A Profile of Non-Urgent Emergency Department Usage in an Urban Pediatric Hospital, 28 PEDIATRIC EMERG. CARE 977 (Oct 2012). This is linked to increases in healthcare spending and has led many to recommend policies including more preventative care and urgent care settings. Id. Telehealth services may lead to less emergency room usage. Sherman, Erik This Is How Net Neutrality's End Will Hurt Low to Moderate Income People, FORBES (last visited March 10, 2018).


Erick Wicklund, Making Telehealth a Valuable Part of Preventative Care Programs, MHEALTHINTELLIGENCE (Jan. 10, 2018), https://mhealthintelligence.com/news/making-telehealth-a-valuable-part-of-preventive-care-programs (last visited Feb. 28, 2019) (describing the uses of telehealth in preventative care); Preventative Health Care, CDC (last visited Dec. 20, 2018), https://www.cdc.gov/healthcommunication/tooltemplates/entertainmented/tips/PreventiveHealth.html (detailing preventative cares role in cutting health costs). Utilizing preventative care can prevent patients from developing costly chronic diseases that require insurance companies and patients to pay large sums of money. Id. Telehealth services can be an easy and affordable option to allow patients to receive preventative care on a regular basis; cutting down on chronic illnesses and higher healthcare costs. Id.

See Wicklund, supra note 70; Preventative Health Care, supra note 70.

See Lauren Cranford, What the American Health Care Act Might Mean for Telemedicine, CHIRON HEALTH (May 8, 2017), https://chironhealth.com/blog/american-health-care-act-might-mean-telemedicine/ (describing the impact of the AHCA on telehealth). The AHCA left telemedicine out of the language but the provisions included will impact telehealth by lessening the number of consumers paying into the healthcare market. Id. Removing the individual mandate removes incentive of purchasing or providing benefits, therefore lowering the amount of American's with insurance. Id. Less enrollees means less patients to benefit from the use of telehealth. Id.

See Mobile Fact Sheet, Pew Research Center (last accessed Feb. 24, 2019), http://www.pewinternet.org/fact-sheet/mobile/ (describing the facts associated with Mobile devices). The Pew Research Center states that 95% of Americans own a cell phone, 77% of which is a smart phone. Id. Additionally, 75% of Americans have access to a computer and 50% have tablet computers. Id. These devices allow patients to utilize health applications, databases, and more in the comfort of their own homes. See Telehealth: Technology meets health care, Mayo Clinic (Aug. 16, 2017), https://www.mayoclinic.org/healthy-lifestyle/consumer-health/in-depth/telehealth/art-20044878.


See Beaver, supra note 74; Dr. Gould Customizes EHR System to Improve Continuity of Care for Cancer Patients, HealthIT.Gov (last visited Feb. 24, 2019), https://archive.healthit.gov/providers-professionals/dr-gould-customizes-ehr-system-improve-continuity-care-cancer-patients. Doctors in rural Kentucky are utilizing telehealth services and
electronic health records to have the best continuity of care possible. Id. These allow doctors in emergency rooms, traveling, or practicing remotely to all have access to the same information at a moment's notice. Id.

See id. (explaining benefits of more accessible technology).

77 See Communications Act of 1934, 73 Pub. L. 416, 48 Stat. 1064 (1934). The Communications Act of 1934 created the FCC to replace the Federal Radio Commission when technology began to extend beyond radio. Id. The act created a regulatory framework for communication broadcasting and placed the FCC in charge of oversight. Id.

See id. (explaining how the Communications Act seeks to regulate communication technologies).

79 See Radio Development and Monopoly, CQ PRESS (last accessed Feb. 24, 2019), https://library.cqpress.com/cqresearcher/document.php?id=cqresrre1924033100 (last visited Mar. 12, 2019). The boom of the radio suffered from oligarchical control of the airwaves. Id. Only a few large corporations could afford the radio waves and thus ended any competition. Id. These abuses led to the need for regulation. Id.

See supra note 80. Title I is a light touch, low regulation category that gives providers more control over content and allows for self-regulating. Id. Title II requires more regulatory oversight by the FCC and holds organizations accountable. Id. Proponents of net neutrality support Title II regulations while critics prefer a light touch, Title I classification. Id. See Grenoble, supra note 81 (detailing the arguments of proponents and critics of Title II net neutrality).

84 See supra note 80.

85 See Grenoble, supra note 81. See also A Timeline of Net Neutrality, WHAT IS NET NEUTRALITY (last visited Feb. 27, 2019), http://whatisnetneutrality.org/timeline (providing a definition for net neutrality). Net Neutrality has been debated since early 2000's when Tim Wu coined the term net neutrality. Wu, supra note 5 (citing and defining net neutrality). The Supreme Court has spoken on the actions of ISP's and given the FCC the power to categorize and regulate as they see fit. See infra note 90 and accompanying text (citing Supreme Court cases which have focused on ISP's and powers given to the FCC).

86 Grenoble supra note 81 (highlighting the different opinions on internet provider regulations).

FCC Classified Cable Modem Service as “Information Service”, FCC (Mar. 14, 2002), http://transition.fcc.gov/Bureaus/Cable/News_Releases/2002/nrcb0201.html (highlighting an announcement from FCC categorizing ISP's under Title I of the Telecommunication Act). This declaration places ISPs under a light touch regulatory framework. Id. This clarified that ISPs are not subject to utility common carrier rules, thus requires a lower level of regulation. Id.

Id. (noting the effects of the announcement from FCC).

Wu supra note 5 and accompanying text.
have a history of throttling, blocking, and prioritizing content in their own interest. Nat'l Cable & Telecommns. Ass'n, 545 U.S. at 967.


Supra note 81.

Id.


Supra note 81.


See supra note 80; Grenoble, supra note 81 and accompanying text.

Verizon Communications v. FCC, 435 U.S. 567 (2002). Methodology chosen by the Federal Communications Commission (FCC) to set rates for lease of network elements to competing local exchange carriers (CLECs) is not unreasonable on ground it is too complicated to be practical. Id. at 522.


Cecilia Kang, FCC Approves Plan to Consider Paid Priority on Internet, WASH. POST (May 15, 2014), https://www.washingtonpost.com/news/the-switch/wp/2014/05/15/fcc-approves-plan-to-allow-for-paid-priority-on-internet/?utm_term=.552c3f3b5d2b. The plan would allow companies, like Verizon, to charge Netflix, and similar providers, to be a priority website. Id. This would allow websites to pay for their content to be considered under a preferred category gaining more visitors. Id.


See Hu, supra note 99.

See id. The comments were analyzed by the Sunlight Foundation which found that less than one percent were opposed to the enforcement of net neutrality. Id.


See id. Pai felt that the FCC was overstepping its role by regulating ISPs. Id.

See Report and Order on Remand, supra note 101 (discussing the 2015 FCC decision to enforce net neutrality); Jim Puzzanghera, FCC Tightens Internet Oversight with New Net Neutrality Rules, LA TIMES (Feb. 26, 2015), http://www.latimes.com/business/la-fi-net-neutrality-vote-20150227-story.html. By classifying ISP’s as common carriers, the FCC moved internet providers under Title II classifications and thus increased regulations. Id. See
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108 *Id.* The internet is an essential staple in the economy today; a majority of markets are moving online and centralizing business practices around the online market. *Id.* Controlling the content that users may access is allowing ISP's to control the economic marketplace. *Id.*

109 President Barrack Obama, *President Obama's Statement on Keeping the Internet Open and Free*, YOUTUBE, https://www.youtube.com/watch?v=uKcjQPVwfdK&list=UUYxR1FDqcWM4y7FfpIAn3KQ. Obama supports net neutrality because he feels that for the economy to flourish, the internet must be open and equal. *Id.*

110 *Supra* note 23 and accompanying text.

111 *Id.*


114 *Id.*


117 83 FCC Rcd. 7852 (2018). The regulation rolls back net neutrality rules established in 2015 and ensures ISP's will face lighter regulations to promote innovation. *Id.*

118 *Supra* note 116.


121 *Id.*

changes to net neutrality protections). Comcast provides a list of disclosures in order to abide by the FCC's rule requiring transparency. Id. Comcast assures clients that there will be no throttling, content blocking, or paid prioritization. Id.

Jim Puzzanghera, Suit by 22 State Attorneys General Seeks to Block FCC's Net Neutrality Repeal, LA TIMES (Jan. 16, 2018). Attorneys General waited until law was published in federal register before officially filing. Id. Several activist groups have also joined the fight and filed suits. Id. Supporters also include large online conglomerates such as Amazon, Google, and Facebook. Id.


Zhou, supra note 124 (describing Ajit Pai's response to the failure of Congress to enact a Congressional Review Act to restore net neutrality).

Eggerton, supra note 124. Members of Congress focused on Communications will take on the topic of net neutrality in 2019. Id. The Subcommittee will determine the need for further legislation. Id.

John Eggerton, Net Neutrality's Title I vs. Title II Digital Divide Remains, BROADCASTING CABLE (Feb. 7, 2019), https://www.broadcastingcable.com/news/net-neutralitys-title-i-vs-title-ii-digital-divide-remains (detailing debates that occurred in Subcommittee hearing on net neutrality). While debates circled around the Title I vs. Title II classifications, members seemed to agree that some legislation is necessary to prevent the content controlling behaviors of ISP's. Id. Members of the Subcommittee in essence do not trust ISP's to refrain from these behaviors without legislation to clearly ban it. Id.

See Telehealth: Helping Hospitals Deliver Cost-Effective Care, supra note 25. See also Aria Bracci & Lia Petronio, New Research Shows that, Post Net Neutrality, Internet Service Providers are Slowing Down your Streaming, NEWS NORTHEASTERN (Sept. 10, 2018), https://news.northeastern.edu/2018/09/10/new-research-shows-your-internet-provider-is-incontrol/. Data exists to prove that within a year of the 2017 Restoring Internet Freedom Rule ISP's are engaging in content throttling. Id. Northeastern University utilizes an app that tracks behavior that goes against net neutrality principles. Id.


132 See GOP House Members Offer Trio of Net Neutrality Bills, supra note 131 (stating Democrats not jumping to embrace proposed bills).

133 See id. Democrats feel that the proposals by republicans are not true proposals but rather methods of placating consumers while still supporting the ISP's. Id. Democrats want more assurances that the behavior will be banned whether through further regulation, returning to Title II classification, or creating a new classification. Id.


135 See NORTHEAST TELEHEALTH RESOURCE CTR., supra note 42 (referencing types of telehealth).

136 See NORTHEAST TELEHEALTH RESOURCE CTR., supra note 42. See also Wicklund, supra note 70 (referencing telehealth for preventive care).

137 See Sanjay Gupta, Is Telemedicine Improving Your Healthcare?, EVERYDAY HEALTH (Apr. 9, 2015), https://www.everydayhealth.com/news/telemedicine-improving-your-healthcare/ (last visited Mar. 12, 2019). “About 50 percent of hospitals now use telemedicine in some way ....” Id. See also Eric Wicklund, Telemedicine in the ICU: How One Hospital Improved Care Management, MHEALTH INTELLIGENCE (Mar. 1, 2018), https://mhealthintelligence.com/news/telemedicine-in-the-icu-how-one-hospital-improved-care-management (describing the use of telemedicine to provide better care for patients). For example, in smaller staffed hospitals, specialists are more accessible via a telemedicine platform. Id. This dramatically improves access to expertise in a matter of seconds compared to fifteen minutes of waiting for someone who is on-call. Id. Therefore, patients do not have to be transported to other facilities and can obtain the necessary care and treatment where they already are. Id.

138 See Tom, supra note 1 (limiting internet congestion will be important). See also Mark Gaynor et al., Telecommunication Policies May Have Unintended Health Care Consequences, HEALTHAFFAIRS (May 31, 2017), http://www.healthaffairs.org/do/10.1377/hblog20170531.060342/full/. For telemedicine to be scalable and positively impact cost and outcomes, there must be a predictable infrastructure connecting patients, care providers, and technology. A prerequisite for telemedicine is broadband connectivity between telehealth sites. Reliable low cost service for telehealth is potentially threatened by the loss of NN. What happens to telehealth if Netflix traffic is preferred above medical applications? Could Internet Service Providers (ISPs) offer better services for one hospital system than another, helping them take over telehealth in a region? Id.

139 See also FCC, supra note 119 (expanding on the 2017 proposal by the FCC). The FCC proposal will undo the 2015 classification of internet service providers as “common carriers” and return to the system that existed previously. Id. The FCC suggests that “light regulation” is preferable for the consumer market and will benefit all. Id. See also AT&T - Comcast: Petitions and Comments, FCC, https://www.fcc.gov/att-comcast-petitions-and-comments (last visited Nov. 17, 2019) (providing insight into the many people speaking for and against and for net neutrality). Report and Order, FCC, 14, (Dec. 21, 2010), https://apps.fcc.gov/edocs_public/attachmatch/FCC-10-201A1_Rcd.pdf (explaining the Open Internet Order to preserve internet freedom).


141 See id. at 13 (assessing video streaming quality).
See id. at 2. See also Am. Hospital Ass'n, supra note 57, at 1, 6 (referencing Medicare paying for very little of telehealth services in rural areas).

See Gaynor et al., supra note 138 (discussion technology infrastructure). If the cost of Internet service is prohibitive, it becomes another factor that worsens health disparities in low income individuals. The Lifeline Program has helped expand the availability of Internet and phone services that support care in lower income areas. The new FCC Chairman announced on March 29 that he was halting implementation of last year's expansion of the Lifeline program to support broadband in addition to phone service. This change will not prevent Lifeline subsidies, but it will make it harder for ISPs to gain approval. More than 36 pending applications demonstrate the widespread need for subsidized service programs, but it's unlikely the applications will be approved.

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See id.; Spitzer, supra note 12 and accompanying text.

Without the heavy regulation of the FCC, it is possible for ISP's to return to the content controlling behavior as they now regulate themselves. Id. See generally supra note 33 and accompanying text.


See id. See also Gaynor, et al., supra note 138.


See supra note 138 and accompanying text.

Supra note 155 and accompanying text.


See id. See also HIPAA Guidelines on Telemedicine, HIPAA J. (last visited Feb. 24, 2019) https://www.hipaajournal.com/hipaa-guidelines-on-telemedicine/ (last visited Mar. 8, 2019) (providing guidelines for secure electronic communication with patients). Widespread implementation of telemedicine faces barriers including traditional attitudes about patient interaction, traditional payment models, and concerns about the credibility of telemedicine:

[T]he traditional fee-for-service environment makes it difficult to be paid for telemedicine: “41 percent of respondents ... said that they are not reimbursed at all for telemedicine services, and 21 percent ... reported receiving lower rates from managed care companies for telemedicine than for in-person care,” ... “This uncertain environment led 87 percent of respondents to report that they do not believe a majority of their patients will be using any of their organization's telemedicine services three years from now. Almost one-quarter said they anticipated fewer than 10 percent of their patients utilizing their organization's services.


See Pratt, supra note 158, at 545.

See supra text accompanying note 138. A separate issue is internet access in geographically isolated areas:

[S]ignificant gaps in access to broadband remain, particularly among rural and underserved populations. Access to broadband is also necessary for other community and individual needs in education and training, economic development, and government. Major public health issues impact rural communities and their economic development, in part due to a lack of access to health care services. Telehealth technologies play a major role in helping individuals and their health care providers to better manage health.

Pratt, supra note 158, at 513 (quoting Dale C. Alverson, Broadband Connectivity, in THE ROLE OF TELEHEALTH IN AN EVOLVING HEALTHCARE ENVIRONMENT 21, 21 (2012)).

See supra text accompanying note 138.


See id. (explaining the importance of net neutrality and why open networks are vital to consumers).

See id. (discussing negative implications associated with the 2017 FCC decision).

See supra note 12 and accompanying text (discussing net neutrality effects associated with the healthcare system).

See id. (discussing ISP's that have spoken out against Title II); see also Executive Session, infra note 182 (explaining their opinion that net neutrality is the most beneficial to internet access expansion).

See Watson, supra note 122 (discussing competing views regarding benefits and drawbacks of net neutrality).

See FCC Fact Sheet, supra note 140 at 2 (explaining that ISPs invested money to help develop the internet and expand broadband). Prior to the 2015 decision, ISPs invested nearly two trillion dollars in developing the internet. Id. During this time, internet businesses and consumer activity became a major part of the American economy. Id. Companies argue that this increase in the market was due to the investments organizations made to the development of internet and the expansion of broadband. Id.

See FCC Fact Sheet, supra note 140. Cuts in investments due to the 2015 regulatory changes has impacted the broadband industry by hindering efforts to expand internet access. Id. The money previously spent on investments has been reallocated. Id. With the ever-growing demand for internet, providers cannot keep up without financial investment. Id. In order to reach low income and rural areas, broadband networks must be expanded. Id. This is not easily accomplished without adequate resources. Id.

Statement of Chairman Ajit Pai, FCC (Last accessed Feb. 28, 2019), https://apps.fcc.gov/edocs_public/attachmatch/FCC-17-60A2.pdf (last visited Mar. 12, 2019). Ajit Pai and Comcast, along with other ISP's have commented that the behavior will not occur but offer no proof. Id.

See David L. Cohen, Comcast Supports Net Neutrality on Internet Day of Action Comcast, COMCAST (last updated Jul. 12, 2017), http://corporate.comcast.com/comcast-voices/on-the-internet-day-of-action-comcast-supports-net-neutrality (showing Comcast's public statement regarding net neutrality). The corporation explains that consumers will not face throttling or blocking of content by the ISP. Id.

Id.

See Verizon case supra note 33. Corporations were taken to court on multiple occasions for throttling and blocking content. Id. The behavior of ISPs pre-2015 caused the action of the FCC and the outcry from millions asking for more regulation. Id. Without regulation, there is no guarantee that ISPs will not return to this behavior. Id.

See supra note 172. Comcast proposes that net neutrality and regulation can remain while removing the “rigid, innovation killing” Title II regulations. Id. See also Joan Marsh, Ensuring an Open Internet and Fostering Innovation and Investment, AT&T Public Policy (Last updated Aug. 30, 2017) https://www.attpublicpolicy.com/consumer-broadband/ensuring-an-open-internet-while-fostering-innovation-and-investment/ (indicating AT&T’s position on net neutrality). AT&T states that ISPs are not opposed to additional regulation if Title II is removed. Id. The organization feels that competition for broadband will help regulate costs and improve efficiency. Id. Additionally, AT&T claims that most of the support against the Title II change is fraudulent comments. Id. See also John Eggerton, Survey: Most VERIFIABLE FCC Comments Favor Title II Repeal (last visited Feb. 28, 2019), http://www.multichannel.com/news/fcc/survey-most-verifiable-fcc-comments-favor-title-ii-repeal/414891. The study emphasizes that many of the comments against the proposed net neutrality change were done under fake e-mails. Id. The survey emphasizes that most of the verified comments were proponents of the change and feel that this shows that the genuine American consumer is anti-Title II regulations. Id.

See supra note 144 and accompanying text.

See id.


Id.
See supra note 138. See also S. Exec. Res. 156, 115th Cong., 163 Cong Rec 156, S6195 (2017). It even holds true for telehealth providers. Telehealth depends on reliable, fast, and low-cost internet coverage to transmit critical health information, especially in rural and remote areas—for example, the remote monitoring of blood glucose levels in diabetes patients. Net neutrality prevents the internet service providers from viewing this lifesaving service as a cash cow, thus charging rural hospitals and community health centers a premium fee to deliver critical and timely healthcare services. Id.

Supra note 171. The FCC believes that a Title I classification will increase investments and allow access to increase as a direct result. Id. With more access and more money, the FCC believes that more jobs will come as a result. Id. The hope is to remove Government from the internet and allow citizens to access free internet, protecting their privacy. Id.

See supra note 171. See also supra note 138. The two arguments conflict. Id. One side believes that net neutrality is harmful for access to the internet by diminishing innovation and creativity. Id. The other side believes without net neutrality, innovation will be quashed due to a monopolization by large ISP Conglomerates prioritizing their preferred content. Id.


See Net Neutrality Debate and Connected Health, CENTER FOR CONNECTED HEALTH POLICY https://www.echpca.org/sites/default/files/2018-09/Net%20Neutrality%20Debate%20and%20Connected%20Health%20FINAL_0.pdf (last visited Nov. 17, 2017). Telehealth and healthcare systems require consistent, fast speed internet use. Id. Without this equal access, the systems that allow doctors to review charts or to conference for medical purposes is complicated. Id. This confusion, in many scenarios, causes access of healthcare to be harmed. Id.

See id.


See Priyanka Dayal McCluskey, Merging Partners, Mass. Eye and Ear would raise costs, watchdog says, BOSTON GLOBE (last updated Nov. 1, 2017), https://www.bostonglobe.com/business/2017/11/01/partners-mass-eye-and-ear-merger-would-drive-costs-watchdog-says/QWCS83d2reOCKuNWuLDM/story.html (last visited Mar. 12, 2019). Large hospital systems are creating an oligarchy in the healthcare industry. Id. These large groups cause a shift in the market and allow the large providers to drive up costs and to impact the business of small hospitals. Id. Small hospitals have struggled through history and are typically bought by these large systems when the financial burden becomes too much. Id.

See supra note 87 and accompanying text.

See supra note 87 and accompanying text. See also Net Neutrality’s Impact On Interoperable Healthcare Solutions, PROGNOCIS (last updated July 25, 2017), https://prognocis.com/net-neutrality-healthcare-ehr-interoperability/. ISPs
will potentially be able to make accessing EHRs more complicated. *Id.* Providers with different ISPs may face interoperability complications and therefore hurt patients. *Id.* The telemedicine function, allowing so many who cannot afford healthcare to access it, will be complicated when patients cannot afford to utilize an ISP or will not have access to an ISP that their healthcare provider uses. *Id.*


198 *Supra* note 131.


200 See *supra* note 131 and accompanying text.

201 See *supra* note 131 and accompanying text.

202 See In re FCC Releases Open Internet R&O, *supra* note 140.

203 See Bazzoli, *supra* note 14. Internet is essential to provide an internet-based service. *Id.* The internet reliant service requires high speed, stable internet connection in order to function effectively. *Id.*

204 See *supra* note 42 and accompanying text.


206 See Telemedicine: Opportunities and Development in Member States, Global Observatory for eHealth Series, *supra* note 53.


208 See *supra* note 127 and accompanying text.

209 See *supra* note 138 and accompanying text.

210 See *supra* note 127 and accompanying text.

211 See *supra* note 127 and accompanying text.

212 See *supra* note 127 and accompanying text.

213 See *supra* note 127 and accompanying text.

214 See *supra* note 5 and accompanying text; *supra* note 6 and accompanying text.

215 See *supra* note 32 and accompanying text; *supra* note 196 and accompanying text.

216 See *supra* note 178 and accompanying text.

217 See *supra* note 196 and accompanying text.
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218 See supra note 5 and accompanying text; supra note 16-20 and accompanying text.

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