Innovating Accessible Health Care

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ABSTRACT: Compared to people without disabilities, people with disabilities experience significant health disparities. The recent move toward virtual health care—like online appointments, patient portals, and remote patient monitoring—offered an opportunity to address those inequities. Virtual health care can reduce costs, increase access, streamline communication, and improve the management of chronic conditions. Unfortunately, many of these technologies are inaccessible to patients with disabilities, despite legal obligations requiring providers to offer accessible, nondiscriminatory health care. This Article argues that the lack of accessible virtual health care constitutes an innovation failure: Accessible products and services could—and in fact should—exist but do not. It then considers the reasons for this failure and offers suggestions to inspire accessible design, using both antidiscrimination law and innovation policy.

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INTRODUCTION

American health care is failing the people who need it most. People with disabilities have greater health care needs than people without disabilities,[1] which translates into more frequent appointments and longer hospital stays.[2] While, at first blush, this fact may not seem terribly surprising, the mere presence of disability does not fully explain these disparities. Certainly, some patients with disabilities seek care directly related to their disabilities. However, as a group, people with disabilities are also at greater risk of chronic

1. Jae Kennedy, Elizabeth Geneva Wood & Lex Frieden, *Disparities in Insurance Coverage, Health Services Use, and Access Following Implementation of the Affordable Care Act: A Comparison of Disabled and Nondisabled Working-Age Adults*, INQUIRY, Jan.–Dec. 2017, at 1, 7.

2. *Id.*

conditions, like diabetes and heart disease,[3] and tend to have worse outcomes for a range of health issues, including cancer, pregnancy, and COVID-19.[4] These heightened risks and diminished results stem from both physical and structural barriers.[5] For example, medical equipment is often physically inaccessible.[6] And patients with disabilities are less likely to have a regular provider and more likely to go without needed care because of cost.[7]

Integrating technology into health care seems like the perfect opportunity to address these inequalities. Technology can be a game changer for people with disabilities. Digital tools like screen-readers, voice-to-text programs, and eye-tracking software have increased opportunities to work, socialize, and

3. *See* Michael Jones, John Morris & Frank Deruyter, *Mobile Healthcare and People with Disabilities: Current State and Future Needs*, 15 INT'L J. ENV'T RSCH. & PUB. HEALTH 515, 515 (2018) (finding that individuals with disabilities are approximately twice as likely to have diabetes and three times as likely to have cardiovascular disease); *see also* Silvia Yee, *Health and Health Care Disparities Among People with Disabilities*, DISABILITY RTS. EDUC. & DEF. FUND (Aug. 2011), https://dredf.org/public-policy/health-access-to-care-old/health-and-health-care-disparities-among-people-with-disabilities/#marker12 [https://perma.cc/8JS4-TZQ4] (reporting that people with disabilities have heightened risk for several chronic conditions).

4. *See* Ilhom Akobirshoev, Susan L. Parish, Monika Mitra & Eliana Rosenthal, *Birth Outcomes Among US Women with Intellectual and Developmental Disabilities*, 10 DISABILITY & HEALTH J. 406, 409 (2017) (identifying higher rates of preterm labor and still birth for mothers with disabilities); *Disability, Health Equity & COVID-19*, NAT'L INST. FOR HEALTH CARE MGMT. FOUND. (Oct. 14, 2021), https://nihcm.org/publications/disability-health-equity [https://perma.cc/5GAP-77XV] (finding people with intellectual disabilities six times more likely to die from COVID-19); Ellen P. McCarthy et al., *Disparities in Breast Cancer Treatment and Survival for Women with Disabilities*, 145 ANNALS INTERNAL MED. 637, 641–42 (2006) (reporting different treatment and lower survival rates for breast cancer for women with disabilities); Lesley A. Tarasoff, Saranyah Ravindran, Hannan Malik, Dinara Salaeva & Hilary K. Brown, *Maternal Disability and Risk for Pregnancy, Delivery, and Postpartum Complications: A Systematic Review and Meta-Analysis*, 222 AM. J. OBSTET. & GYNECOL. 27, 29–33 (2020) (showing adverse perinatal outcomes for people with disabilities).

5. Katherine Schneider, *Caring Better for Patients Who Are Blind or Visually Impaired*, 88 AM. FAM. PHYSICIAN 774, 774 (2013); Catherine A. Okoro, NaTasha D. Hollis, Alissa C. Cyrus & Shannon Griffin-Blake, *Prevalence of Disabilities and Health Care Access by Disability Status and Type Among Adults — United States, 2016*, 67 NAT'L LIBR. MED. 882, 882 (2018); Jennifer R. Pharr, Tamara James & Yeu-Li Yeung, *Accessibility and Accommodations for Patients with Mobility Disabilities in a Large Healthcare System: How Are We Doing?*, 12 DISABILITY & HEALTH J. 679, 679 (2019); Daniel Young & Elizabeth Edwards, *Telehealth and Disability: Challenges and Opportunities for Care*, NAT'L HEALTH L. PROGRAM (May 6, 2020), https://healthlaw.org/telehealth-and-disability-challenges-and-opportunities-for-care [https://perma.cc/Z4AH-B67V].

6. Elizabeth Pendo, *Reducing Disparities Through Health Care Reform: Disability and Accessible Medical Equipment*, 2010 UTAH L. REV. 1057, 1059–65; Elizabeth Pendo, *Disability, Equipment Barriers, and Women's Health: Using the ADA to Provide Meaningful Access*, 2 ST. LOUIS U. J. HEALTH L. & POL'Y 15, 19–28 (2008).

7. *Disability Impacts All of Us*, CTRS. FOR DISEASE CONTROL & PREVENTION (July 3, 2024), https://www.cdc.gov/ncbddd/disabilityandhealth/infographic-disability-impacts-all.html [https://perma.cc/6TB9-QZNA]; *see also Disability and Health*, HEALTHYPEOPLE.GOV, https://www.healthypeople.gov/2020/topics-objectives/topic/disability-and-health [https://wayback.archive-it.org/5774/20220413202458/https://www.healthypeople.gov/2020/topics-objectives/topic/disability-and-health]; Willi Harner-Johnson et al., *Disparities in Health Care Access and Receipt of Preventive Services by Disability Type: Analysis of the Medical Expenditure Panel Survey*, 49 HEALTH SERVS. RSCH. 1980, 1981 (2014).

recreate.[8] And the recent explosion in AI-driven innovation includes apps specifically designed to improve the lives of people with disabilities.[9]

At the same time, there has been a corresponding technological revolution in medicine. By now, many Americans are already at least passingly familiar with some form of virtual health care. We videoconference into appointments, access our test results with patient portals, and use devices to monitor our symptoms at home. In many ways, these technologies are empowering.[10] They give patients greater access and flexibility, while also reducing costs.[11] Taking health care online had the potential to be a watershed moment for patients with disabilities. Deployed properly, these tools could have increased access and improved outcomes, thus reducing current disparities.

While virtual health care *could* have greatly improved the lives of patients with disabilities, the unfortunate reality is that many of these tools are inaccessible. Some secure videoconferencing platforms lack captioning or sign language interpreting services, patient-health portals do not always function well with screen-reading or voice-control software, and remote patient monitoring may rely on inaccessible software interfaces or improperly calibrated devices.[12] One accessibility expert who surveyed dozens of health apps failed to identify a single product that was fully accessible, and large-scale analyses of these technologies have yielded similar results.[13]

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8. *See Assistive Technology Products for Information Access*, LIBR. CONG. NAT'L LIBR. SERV. FOR BLIND & PRINT DISABLED, https://www.loc.gov/nls/resources/blindness-and-vision-impairment/devices-aids/assistive-technology-products-information-access [https://perma.cc/ALV8-E8AX]; *see also* Deborah Kyvrikosaios, *Meet the Student Who Can Play the Harp Using Only Her Eyes*, WORLD ECON. F. (June 23, 2021), https://www.weforum.org/agenda/2021/06/technology-student-eye-tracking [https://perma.cc/L5Y7-FHPP]; Caroline Smith, *The Benefits of Speech-to-Text Technology in All Classrooms*, KQED (June 9, 2021), https://www.kqed.org/mindshift/57786/the-benefits-of-speech-to-text-technology-in-all-classrooms [https://perma.cc/7FGD-UXQY].

9. *See e.g.*, *Google Lookout: App Reads Grocery Labels for Blind People*, BBC (Aug. 12, 2020), https://www.bbc.com/news/technology-53753708 [https://perma.cc/Q4A8-YC2C]; ROGERVOICE, https://rogervoice.com/en [https://perma.cc/HC9C-V6LZ]; WHEELMAP, https://wheelmap.org [https://perma.cc/JJU8-ZG7L]; *see also* Reena Mukamal, *30 Apps, Devices and Technologies for People with Vision Impairments*, AM. ACAD. OPHTHALMOLOGY (Aug. 14, 2020), https://www.aao.org/eye-health/tips-prevention/low-vision-impairment-apps-tech-assistive-devices [https://perma.cc/K9P8-7M74].

10. Johanna Smith & John Inazu, *Virtual Access: A New Framework for Disability and Human Flourishing in an Online World*, 2021 WIS. L. REV. 719, 729–31 (describing post-pandemic digital technology as "internet-based human flourishing").

11. *See infra* Section I.B.1.

12. *See infra* Section I.A. For a lengthy discussion of accessibility barriers in virtual health care, see Discrimination on the Basis of Disability in Health and Human Service Programs or Activities, 88 Fed. Reg. 63392, 63422–23 (Sept. 14, 2023) (to be codified at 45 C.F.R. pt. 84).

13. Lauren R. Milne, Cynthia L. Bennett & Richard E. Ladner, *The Accessibility of Mobile Health Sensors for Blind Users*, 2 J. ON TECH. & PERS. WITH DISABILITIES 166, 166–75 (2014); Amy Oughton, *Vital Design: The Importance of Healthcare App Accessibility*, TOPTAL DESIGNERS, https://www.toptal.com/designers/healthcare/healthcare-app-accessibility [https://perma.cc/4ZYL-3CN7]; Anne Spencer Ross, *An Epidemiology-Inspired, Large-Scale Analysis of Mobiule App Accessibility*, SIG ACCESS (Jan. 2019), http://www.sigaccess.org/newsletter/2019-01/ross.html [https://perma.cc/52SV-WCQK]; Jacob O. Wobbrock, *Large-Scale Analysis Finds Many Mobile Apps Are Inaccessible*, UW CREATE, https://create.uw.edu/large-scale-analysis-finds-many-mobile-apps-are-inaccessible%ef%bf%bc [https://perma.cc/M3YC-NSTX].

And while digital accessibility generally is essential to equity and inclusion for people with disabilities, the stakes for inaccessible virtual health care are particularly high. Mistakes or miscommunications could lead to serious harms, such as prescribing incorrect dosages, making erroneous treatment decisions, overlooking relevant symptoms or risk factors, and unnecessarily delaying needed care. To paraphrase one author in *Forbes*: Inaccessible virtual health care doesn't just exclude, it's a matter of life and death.[14]

We must address these inequalities now. As virtual health care becomes increasingly ubiquitous, it could function as a substitute for traditional health care, forcing patients with disabilities to rely on virtual health care even further.[15] Because these technologies are here to stay, the accompanying accessibility problems could become a fixture of our health care system, thus deepening existing disparities.[16] Accessible virtual health care is therefore crucial for ensuring health equity.

This Article intervenes early in the adoption of virtual health care before too much damage has been done. It thus makes contributions in the areas of health law, disability rights law, law and technology, and innovation policy. Other authors have considered the ways that technology could worsen existing disparities (including those experienced by people with disabilities).[17] This

14. Gus Alexiou, *Inaccessible Telehealth Apps Don't Just Exclude – They're a Matter of Life and Death*, FORBES (June 29, 2022, 6:00 AM), https://www.forbes.com/sites/gusalexiou/2022/06/29/inaccessible-telehealth-apps-dont-just-exclude—theyre-a-matter-of-life-and-death (on file with the *Iowa Law Review*); *see also* Discrimination on the Basis of Disability in Health and Human Service Programs or Activities, 88 Fed. Reg. at 63418 (explaining that "[i]naccessible technology can cause severe harm"); *see also* Priya Elayath, *Americans with Disabilities Act's Title III Public Accommodations and its Application to Web Accessibility and Telemedicine*, 17 U. ST. THOMAS L.J. 156, 171–72 (2020).

15. Of course, virtual health care is not a perfect substitute and certain kinds of exams and treatments will require going in person.

16. George M. Powers, Lex Frieden, Vinh Nguyen & Southwest ADA Center, *Telemedicine: Access to Health Care for People with Disabilities*, 17 HOUS. J. HEALTH L. & POL'Y 7, 15 (2017); *see also* Jones et al., *supra* note 3, at 516 (explaining "inverse care law"); Robyn M. Powell, *Applying the Health Justice Framework to Address Health and Health Care Inequities Experienced by People with Disabilities During and After COVID-19*, 96 WASH. L. REV. 93, 125–26 (2021).

17. *See, e.g.*, Allyson E. Gold, Alicia Gilbert & Benjamin J. McMichael, *Socially Distant Health Care*, 96 TUL. L. REV. 423, 454 (2022); Shawn Grant, *Lessons from the Pandemic: Congress Must Act to Mandate Digital Accessibility for the Disabled Community*, 55 U. MICH. J.L. REFORM 45, 69–70 (2021); Laura C. Hoffman, *Reconnecting the Patient: Why Telehealth Policy Solutions Must Consider the Deepening Digital Divide*, 19 IND. HEALTH L. REV. 351, 366–68 (2022); Robert P. Pierce & James J. Stevermer, *Disparities in the Use of Telehealth at the Onset of the COVID-19 Public Health Emergency*, 29 J. TELEMED. & TELECARE 3, 5 (2020); Jedrek Wosik et al., *Telehealth Transformation: COVID-19 and the Rise of Virtual Care*, 27 J. AM. MED. INFORMATICS ASS'N 957, 958 (2020). *See generally* Thiru M. Annaswamy, Monica Verduzco-Gutierrez & Lex Frieden, Commentary, *Telemedicine Barriers and Challenges for Persons with Disabilities: COVID-19 and Beyond*, DISABILITY & HEALTH J. (Nov. 3, 2020), https://www.sciencedirect.com/science/article/pii/S1936657420301047 [https://perma.cc/K6VD-M8JA] (identifying various barriers and challenges that people disabilities encounter when accessing telemedicine); Carli Friedman & Laura VanPuymbrouck, *Telehealth Use by Persons with Disabilities During the COVID-19 Pandemic*, INT'L J. TELEREHAB. (Dec. 1, 2021), https://telerehab.pitt.edu/ojs/Telerehab/article/view/6402 [https://perma.cc/93B5-NRJC] (studying the use of telehealth by people with disabilities during the pandemic); James Stramm, *Responding to the*

Article is novel because it explores *why* virtual health care tools are inaccessible and offers solutions outside the traditional antidiscrimination paradigm.

It argues that inaccessible virtual health care constitutes an innovation failure, a type of technology that could—and should—exist but does not. Innovation failures are a species of market failure. Economic theory posits that markets produce socially desirable outcomes.[18] Thus, markets fail when parties' actions do not generate the expected welfare.[19] Innovation failures occur when markets for socially valuable items don't develop, even though both innovators and consumers *should* value those items. The market malfunctions because no market emerges in the first place.

From a purely economic standpoint, the absence of a market for accessible virtual health care makes sense. Patients do not purchase these technologies. Providers do. Yet for the reasons outlined in this Article,[20] providers are not shopping for accessibility when they purchase virtual health care products and services. However, the market only provides a partial account. What makes this innovation failure particularly surprising is that the law requires providers to offer accessible, nondiscriminatory care to patients with disabilities. Familiar disability rights laws like the Americans with Disabilities Act ("ADA") and the Rehabilitation Act cover most, if not all, American health care providers.[21] And recent federal rules directly address the issue of inaccessible virtual health care, including adopting standards to assess digital accessibility.[22] These legal obligations should inspire providers to demand accessible products and services. However, as explained by this Article, they have not.

The scope of this problem is significant. What constitutes a legally recognized disability includes a wide range of mental and physical conditions, such as autism, blindness, cancer, cerebral palsy, deafness, depression, intellectual disabilities, missing limbs, and post-traumatic stress disorder.[23] Perhaps then, it is not surprising that over sixty-one million people in the United States have self-disclosed disabilities.[24] The Centers for Disease

Digital Health Revolution, 28 RICH. J.L. & TECH. 86 (2021) (exploring the need for greater regulation in digital health due to concerns about bias, discrimination, equity, and other issues); Rupa S. Valdez et al., *Ensuring Full Participation of People with Disabilities in an Era of Telehealth*, 28 J. AM. MED. INFORMATICS ASS'N 389 (2020) (describing how the widespread adoption of telehealth could exacerbate disparities for people with disabilities).

18. *See* JOHN B. TAYLOR, PRINCIPLES OF MICROECONOMICS 405 (2d ed. 1998).

19. Consider contract failures. In those situations, the user of a given good or service is unable to truly assess its quality, leading the producer to create a lower quality product. Henry B. Hansmann, *The Role of Nonprofit Enterprise*, 89 YALE L.J. 835, 844–45 (1980).

20. *See infra* Section II.A.2.

21. *See infra* Section II.B.1.

22. *See infra* Section II.B.

23. *See* 42 U.S.C. § 12102(1)(A) (2018); 29 C.F.R. § 1630.2(j)(3)(iii) (2023) (listing conditions that should, in most cases, qualify as covered disabilities).

24. Lisa I. Iezzoni et al., *Physicians' Perceptions of People with Disability and Their Health Care*, 40 HEALTH AFFS. 297, 297 (2021). *See generally* INST. MED. OF THE NAT'L ACADS., THE FUTURE OF DISABILITY IN AMERICA (Marilyn J. Field & Alan M. Jette eds., Nat'l Acads. Press 2007) (exploring the experience of disability in the United States).

Control and Prevention ("CDC") estimates that approximately twenty-six percent of Americans are living with a disability.[25] Put differently, one in every four people in the United States has a disability. And these numbers will only grow as the population ages.[26] Thus, addressing health disparities based on disability will have important implications for improving health care access and outcomes for older Americans, as well.

The Article proceeds in three parts. The first Part describes how virtual health care products and services fail patients with disabilities and argues that this current inaccessibility constitutes an innovation failure. Part II explains why so much of virtual health care is inaccessible, especially given that several federal laws and regulations require providers to practice medicine accessibly and equitably, including in the digital sphere. In Part III, the Article considers how to encourage accessible innovation in virtual health care. While law- and policymakers could expand or strengthen existing antidiscrimination laws and regulations, other tools of innovation policy, such as grants and prizes, offer a better, more politically palatable approach.

I. INACCESSIBLE VIRTUAL HEALTH CARE

Virtual health care, as used here,[27] consists of digital communications technologies that health care providers use to interact with their patients.[28] While health tech companies may also sell products and services directly to consumers, this Article deals exclusively with technologies offered through health care providers. This Part considers the ways in which these technologies are inaccessible. It then turns to the potential benefits of virtual health care, both generally and for patients with disabilities, demonstrating that the lack of accessible technologies represents an innovation failure.

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25. *Disability Impacts All of Us*, *supra* note 7.

26. Iezzoni et al., *supra* note 24. *See generally* INST. MED. OF THE NAT'L ACADS., *supra* note 24 (exploring the experience of disability in the United States).

27. The Article avoids terms telemedicine or telehealth because those words are often used interchangeably but may signify different things. Sometimes telemedicine and telehealth simply describe communications technologies to provide health-related services or to exchange health-related information. *Office for the Advancement of Telehealth*, HEALTH RES. & SERVS. ADMIN., https://www.hrsa.gov/about/organization/bureaus/oat [https://perma.cc/CAN6-C3QY]. Telemedicine sometimes refers only to remote clinical services. *Telehealth and Telemedicine*, AM. ACAD. FAM. PHYSICIANS (Jan. 2022), https://www.aafp.org/about/policies/all/telehealth-telemedicine.html [https://perma.cc/L6TB-KF74]. To avoid confusion, the Article uses the term virtual health care, which covers a larger category of innovations. It is simply meant to capture any technological tool that enhances, or even replaces, traditional interactions between providers and patients. *See* Discrimination on the Basis of Disability in Health and Human Service Programs or Activities, 88 Fed. Reg. 63392, 63420 (Sept. 14, 2023) (to be codified at 45 C.F.R. pt. 84) (noting that "[h]ealth care provider websites and applications are important platforms for centralizing relevant health information for patients, scheduling appointments and procedures, accessing patient information, and providing contact information").

28. These tools may also enable physicians and institutions to communicate with one another. For example, providers may use communications technologies to exchange patient medical records, to receive medical images for analysis, or to consult on a patient's case.

A. CURRENT INACCESSIBILITY

Providers have a variety of tools at their disposal. For the sake of simplicity, this Article focuses on three types of technologies that are both familiar and present serious accessibility challenges: (1) secure videoconferencing and phone services; (2) patient portals; and (3) remote patient monitoring technologies.[29] The first type gives providers the ability to see their patients remotely. Examples include RingRx,[30] a secure phone service, and Simple Practice,[31] a platform for video appointments. The second category includes patient portals and messaging services. FollowMyHealth and the near-ubiquitous MyChart are portals with both websites and apps that allow patients to access their medical records, request prescription refills, and message their doctors.[32] The final variety, remote patient monitoring technology, uses connected devices to transmit patient data directly to providers. One company, Health Recovery Solutions, offers monitoring devices for over ninety different conditions, including heart disease, diabetes, and cancer.[33] Similarly, RxGenomix markets care kits with Bluetooth-connected devices such as glucometers, pulse oximeters, and scales.[34] Of course, these categories are not exclusive. For instance, OhMD, a secure patient messaging service, also offers a separate platform for virtual appointments.[35]

Unfortunately, patients with disabilities cannot effectively use many of these technologies.[36] Given the nature of disability, the extent of the problem varies according to the individual. A person's experience with a given product or service will depend on their disability and the kinds of assistive technologies that they use. For instance, people who are Deaf or hard of hearing may

29. These categories are not mutually exclusive. In addition to its patient portal, FollowMyHealth also offers videoconferencing and the ability to connect remote patient monitoring devices, like scales and glucose monitors. FOLLOWMYHEALTH, https://about.followmyhealth.com/patients [https://perma.cc/RZ2W-K7QN]. OhMd, a messaging app, has services for virtual visits and patient phone calls. OHMD, https://www.ohmd.com [https://perma.cc/2RFT-KDHX].

30. RINGRX, https://ringrx.com [https://perma.cc/L8AK-5CBH].

31. SIMPLE PRACTICE, https://www.simplepractice.com [https://perma.cc/ASV7-BY47].

32. FOLLOWMYHEALTH, *supra* note 29; MYCHART IS EPIC, https://www.mychart.org [https://perma.cc/K83Q-BZBY].

33. HEALTH RECOVERY SOLS., https://www.healthrecoverysolutions.com/discover/innovative-technology-solutions/remote-patient-monitoring-devices [https://perma.cc/MA5J-TE2H]; Doug Lang, *Extending Cancer Care to the Home with Remote Patient Monitoring*, HEALTH RECOVERY SOLS., https://www.healthrecoverysolutions.com/blog/extending-cancer-care-to-the-home-with-remote-patient-monitoring [https://perma.cc/EF3H-U5Z9].

34. *Remote Patient Monitoring*, RXGENOMIX, https://rxgenomix.com/solution/remote-patient-monitoring (on file with the *Iowa Law Review*).

35. *OhMD with Patients*, OHMD, https://www.ohmd.com/patient-communication [https://perma.cc/8RCA-H3PV].

36. The Article focuses on the access barriers inherent in the technology. Patients with disabilities may also experience access barriers in response to provider policies or because of a lack of medical staff to help during an exam. *See* Hazel Jessica, *The Need for Disability-Inclusive Telehealth Services*, NAT'L CTR. FOR DISABILITY EQUITY & INTERSECTIONALITY (Oct. 26, 2021), https://thinkequitable.com/the-need-for-disability-inclusive-telehealth-services [https://perma.cc/D4BF-93RQ].

require captioning or sign language interpreters.[37] A person whose disability affects their dexterity may have difficulty using a traditional keyboard or mouse and may, therefore, rely on speech recognition software or eye-tracking devices.[38] People who are blind or low-vision could require screen readers, which can range from technologies that translate a website's text into braille to those that simply relay text audibly.[39]

Several virtual health care products and services do not currently meet the needs of patients with disabilities. For example, videoconferencing or phone platforms often presume that patients use their voices to communicate.[40] However, people who have disabilities that affect speech may rely on augmentative and alternative communication systems ("AAC").[41] One study found that AAC users encountered several barriers during virtual appointments both by phone and by videoconference. For example, one patient reported stress and frustration at the time that it took to type responses during a phone visit, and another encountered challenges "using the speakers and the microphone simultaneously [on the AAC device]" during a videoconference appointment.[42] Patients and clinicians may then spend significant portions of these visits troubleshooting technical difficulties.[43] These accessibility barriers affect people with several different disabilities, including cerebral palsy, autism, stroke, head injury, and neurodegenerative conditions like Parkinson's and ALS.[44]

People who are Deaf or hard of hearing, in particular, encounter communication barriers. A 2021 survey of patients with deafness and hearing loss reported that over half of respondents had difficulty during virtual appointments.[45] Videoconferencing platforms may lack captioning or the

37. Powers et al., *supra* note 16, at 15; *see also Assistive Technology*, ACCESS COMPUTING, https://www.washington.edu/accesscomputing/resources/accommodations/activity-type/assistive-technology [https://perma.cc/LR76-QVG4].

38. *How Can People with Mobility Impairments Operate Computers?*, ACCESS COMPUTING, https://www.washington.edu/accesscomputing/resources/accommodations/activity-type/assistive-technology [https://perma.cc/A69N-CTKR]; *What Alternative Pointing Systems Are Available for Someone Who Cannot Use a Mouse?*, ACCESS COMPUTING, https://www.washington.edu/accesscomputing/what-alternative-pointing-systems-are-available-someone-who-cannot-use-mouse [https://perma.cc/57JT-UHLM].

39. *How Can People with Mobility Impairments Operate Computers?*, *supra* note 38; *Screen Reader User Survey #9 Results*, WEBAIM, https://webaim.org/projects/screenreadersurvey9 [https://perma.cc/55NX-7GHD] (outlining the most common screen-reading tools reported in 2021).

40. Erin Beneteau, Ann Paradiso & Wanda Pratt, *Telehealth Experiences of Providers and Patients Who Use Augmentative and Alternative Communication*, 29 J. AM. MED. INFORMATICS ASS'N 481, 481–82 (2021).

41. *Id.* at 481.

42. *Id.* at 484 (alterations in original).

43. *Id.*

44. *Id.* at 481.

45. Ashley Mussallem et al., *Making Virtual Health Care Accessible to the Deaf Community: Findings from the Telehealth Survey*, 30 J. TELEMED. & TELEHEALTH 574, 575(2022).

ability to accommodate third-party sign language interpreters.[46] And phone-based technologies are often not compatible with video relay interpreting services, assistive technologies that allow people who communicate through American Sign Language to participate in voice calls.[47]

Patient portals also pose accessibility issues for people with a variety of disabilities. A study in the *American Journal of Public Health* found that the content in portals often appears in small font and "is written at a very high literacy level."[48] User interfaces can be challenging to both navigate and customize,[49] making them difficult to use for people who rely on screen readers[50] or eye tracking devices.[51] One large-scale study of ten-thousand mobile apps found that twenty-three percent failed to provide content descriptions for the majority of their image-based buttons, thus greatly reducing usability for people who use screen readers.[52] Other issues include the inability to enlarge text,[53] the absence of text descriptions of images,[54] a lack of navigational headings,[55] and presenting tables and other infographics in ways

46. For example, SimplePractice does not offer captioning for its videoconferencing services. Laila Muhanna, *Telehealth and Captioning/Text Box – Americans with Disability ACT*, SIMPLEPRACTICE, https://support.simplepractice.com/hc/en-us/community/posts/360076220212-Telehealth-and-Captioning-text-box-Americans-With-Disability-ACT [https://perma.cc/MBV8-NBB6]; *see also* Amelia Slama, *Closed Captions with Telehealth*, SIMPLEPRACTICE, https://support.simplepractice.com/hc/en-us/community/posts/4737854725133-Closed-Captions-with-Telehealth [https://perma.cc/K5SA-V8DM].

47. Video relay services allow the patient to communicate using ASL with a sign language interpreter over video and the interpreter then translates the ASL communication into speech for the provider on the phone. The interpreter then translates the provider's response over video to the patient. *Video Relay Services*, FED. COMMC'NS COMM'N, https://www.fcc.gov/consumers/guides/video-relay-services [https://perma.cc/7Z8Z-5QRH].

48. Courtney R. Lyles, Jim Fruchterman, Mara Youdelman & Dean Shillinger, *Legal, Practical, and Ethical Considerations for Making Online Patient Portals Accessible for All*, 107 AM. J. PUB. HEALTH L. & ETHICS 1608, 1608 (2017).

49. *Id.*; Annaswamy et al., *supra* note 17, at 2 (discussing accessibility issues in user interfaces).

50. *Understanding Assistive Technology: How Does a Blind Person Use the Internet?*, LEVEL ACCESS (July 2, 2019), https://www.levelaccess.com/understanding-assistive-technology-how-does-a-blind-person-use-the-internet/ [https://perma.cc/NU9G-KKJG].

51. People who are unable to verbally communicate commonly rely on eye-tracking devices and other AAC systems to communicate with healthcare providers. Beneteau et al., *supra* note 40, at 481–82.

52. *See* Discrimination on the Basis of Disability in Health and Human Service Programs or Activities, 88 Fed. Reg. 63392, 63422 (Sept. 14, 2023) (to be codified at 45 C.F.R. pt. 84) (citing *Large-Scale Analysis Finds Many Mobile Apps Are Inaccessible*, CREATE UNIV. WASH. (Mar. 1, 2021), https://create.uw.edu/initiatives/large-scale-analysis-finds-many-mobile-apps-are-inaccessible [https://perma.cc/TNF5-2PSQ]).

53. *Id.* (citing Chase DiBenedetto, *4 Ways Mobile Apps Could Be a Lot More Accessible*, MASHABLE (Dec. 9, 2021), https://mashable.com/article/mobile-apps-accessibility-fixes [https://perma.cc/Q6E5-ZTWX]).

54. *Id.* (citing *Easy Checks – A First Review of Web Accessibility*, W3C (Jan. 31, 2023), https://www.w3.org/WAI/test-evaluate/preliminary [https://perma.cc/N4DZ-3ZB8]).

55. *Id.* at 63422–23 (citing *Images Tutorial*, W3C (Feb. 8, 2022), https://www.w3.org/WAI/tutorials/images [https://perma.cc/4YUX-9ZWP]).

that are difficult for screen readers to understand or interpret.[56] Thus, people with disabilities that affect their vision or dexterity may not be able to effectively use their assistive technologies with patient portals.[57]

Finally, remote patient monitoring can provide particularly acute challenges for people with disabilities. These technologies often have at least two elements: a platform and a device. Both can raise issues for accessibility. The platforms may present the same issues as patient portals, like small font, confusing software interfaces, and a lack of compatibility with assistive technologies. A study of nine health apps that synced with either blood pressure or glucose monitors found that all nine apps were inaccessible to blind users.[58] Additionally, individuals whose disabilities affect their dexterity may have trouble operating the devices.[59] Finally, even if a person can use the device, it may not be properly calibrated for people with certain kinds of disabilities, making their readings inaccurate.[60]

Moreover, we cannot address these issues in post. Accessible design at the outset is crucial for at least two reasons. First, when technology fails to meet a person's needs, the person often abandons it.[61] Thus, a patient with a disability who has a negative experience with a videoconferencing platform or patient portal may be reluctant to keep trying. Second, attempts to make technology more accessible after the fact may fail or backfire. Accessibility overlays are plug-ins that are marketed to make websites accessible to users with disabilities. However, these quick fixes fail to identify several accessibility issues, do not work for mobile sites, and can make websites slower and less secure.[62] Ironically, they may make accessibility worse.[63] Thus, while accessibility overlays

56. *Id.* at 63422 (citing *Tables Tutorial*, W3C (Feb. 16, 2023), https://www.w3.org/WAI/tutorials/tables [https://perma.cc/FMG2-33C4]).

57. People with vision and dexterity disabilities reported problems using direct-to-consumer health tech because the apps were not compatible with the assistive technology tools that the individuals used. Similar problems could arise with apps offered through providers. *See* Jones et al., *supra* note 3, at 518–20; *see also* Daihua X. Yu, Bambang Parmanto, Brad E. Dicianno, Valerie J. Watzlaf & Katherine D. Seelman, *Accessibility Needs and Challenges of a mHealth System for Patients with Dexterity Impairments*, 12 DISABILITY & REHAB. ASSISTIVE TECH. 56, 61–63 (2017).

58. Milne et al., *supra* note 13, at 172–74.

59. Annaswamy et al., *supra* note 17, at 2.

60. *See* Tom E. Nightingale, Peter C. Rouse, Dylan Thompson & James L.J. Bilzon, *Measurement of Physical Activity and Energy Expenditure in Wheelchair Users: Methods, Considerations and Future Directions*, SPORTS MED. - OPEN 2, 6–7 (Mar. 1, 2017), https://sportsmedicine-open.springeropen.com/articles/10.1186/s40798-017-0077-0 [https://perma.cc/7SKL-BHZ3].

61. Nathan W. Moon, Paul M.A. Baker & Kenneth Goughnour, *Designing Wearable Technologies for Users with Disabilities: Accessibility, Usability, and Connectivity Factors*, J. REHAB. & ASSISTIVE TECHS. ENG'G 3–4 (Aug. 13, 2019), https://journals.sagepub.com/doi/full/10.1177/2055668319862137 [https://perma.cc/F8AA-CXLP].

62. *The Many Pitfalls of Accessibility Overlays*, LEVEL ACCESS (Nov. 27, 2020), https://www.levelaccess.com/blog/the-many-pitfalls-of-accessibility-overlays [https://perma.cc/U7Z6-7SFJ].

63. Amanda Morris, *For Blind Internet Users, the Fix Can Be Worse than the Flaws*, N.Y. TIMES (July 13, 2022), https://www.nytimes.com/2022/07/13/technology/ai-web-accessibility.html (on file with the *Iowa Law Review*); *The Many Pitfalls of Accessibility Overlays*, *supra* note 62; OVERLAY FACT SHEET, https://overlayfactsheet.com [https://perma.cc/VR2U-8LJ6].

appeal to businesses, they are largely ineffective for users. As a result, developers need to make accessible technology in the first place, at the design level.

Furthermore, it is also harder for people with disabilities to innovate for themselves in this area. Many advances in physical accessibility—from artificial limbs to mouth-sticks—came directly from users with disabilities.[64] Those individuals combined their technical expertise with their personal experiences to solve the accessibility problems that they faced. Virtual health care unfortunately presents challenges for self-innovation.

Private companies are largely responsible for generating digital technologies because designing those products and services requires technological expertise.[65] Lay people may therefore find it difficult to participate in the creation of virtual health care technologies.[66] The social exclusion of people with disabilities further compounds these problems. Given the small number of people with disabilities in tech,[67] developers may not appreciate the needs and preferences of this population or may lack the necessary skills to design accessible technology.[68] Furthermore, if people with disabilities begin self-innovating or participate in the innovation process, they will not receive a benefit from the new technology unless their personal health care providers adopt those specific technologies.

B. BENEFITS OF VIRTUAL HEALTH CARE

Virtual health care offers advantages for both patients and providers compared to traditional in-person care. The inaccessibility of these technologies is particularly troubling because people with disabilities are uniquely situated to benefit. Because they experience health disparities, people with disabilities could derive greater relative benefit from increased access, lower costs, and higher quality care. Moreover, designing accessibly would generate significant welfare. Accessible design could not only improve health care for people with disabilities but also lead to better products and services for everyone. If the market does not produce socially valuable technologies when it could,

64. *See, e.g.*, Mark Wilson, *The Untold Story of the Vegetable Peeler that Changed the World*, FAST CO. (Sept. 24, 2018), https://www.fastcompany.com/90239156/the-untold-story-of-the-vegetable-peeler-that-changed-the-world (on file with the *Iowa Law Review*).

65. Tlaleng Mofokeng (Special Rapporteur), *Digital Innovation, Technologies and the Right to Health*, ¶ 9, U.N. Doc. A/HRC/53/65 (Apr. 21, 2023).

66. *Id.* ("The complexity with which digital technologies are designed make it difficult for civil society and the public to understand, preventing an adequate and timely participation in the design of digital health systems.").

67. Kimberly Noel & Brooke Ellison, Comment, *Inclusive Innovation in Telehealth*, NATURE PARTNER J. DIGIT. MED. 1–2 (June 25, 2020), https://www.nature.com/articles/s41746-020-0296-5.pdf [https://perma.cc/R76F-KJG4]; *see also* Jake Hall, *Wearable Tech Is Failing People with Disabilities*, MEDIUM (Nov. 18, 2019), https://onezero.medium.com/wearable-tech-is-failing-people-with-disabilities-673f67d65724 (on file with the *Iowa Law Review*).

68. Noel & Ellison, *supra* note 67, at 1–2 ("[Historical exclusion] has led to a technological frontier that has been largely absent of the voices, insights, and experiences of people with disabilities."); Moon et al., *supra* note 61, at 1, 3 (explaining that most developers lack the knowledge and skills to design accessibly).

an innovation failure occurs.[69] This Section demonstrates that, given the welfare-generating potential of accessible products and services, the current inaccessibility of virtual health care represents an innovation failure.

1. Benefits Generally

These technologies offer benefits to patients and providers alike. They can improve health care access and quality, while reducing costs and increasing profitability. Take virtual appointments and patient portals. Both allow patients to communicate with providers and to obtain important health-related information without visiting a physical clinic. Making health care available anywhere decreases or eliminates travel costs, time off work, and the need for childcare.[70] And remote patient monitoring allows patients to provide more longitudinal data about chronic conditions, beyond episodic, in-person care.[71]

As early as 2017, several large health systems recognized the advantages of virtual health care, such as responding to provider shortages, offering services outside normal hours, streamlining appointment scheduling and prescription refills, addressing administrative challenges, and responding to patient expectations.[72] More recently, HHS stated that online appointments can reduce the risk of COVID-19 and other infectious disease exposure, increase convenience, shorten wait times for appointments, and provide greater access to faraway specialists.[73] These technologies could even reduce the risk of long-term hospital stays or institutionalization.[74]

Patients have responded positively to virtual health care. One survey found that between eighty-five and ninety-six percent of patients found electronic health records ("EHR") useful and between seventy and eighty percent believed that using EHR helped doctors and staff manage their care.[75] Interestingly,

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69. Other scholars have documented innovation failures within the pharmaceutical industry. *See, e.g.*, Christopher Buccafusco & Jonathan S. Masur, *Drugs, Patents, and Well-Being*, 98 WASH. U. L. REV. 1403, 1430–33 (2021); W. Nicholson Price II, *Making Do in Making Drugs: Innovation Policy and Pharmaceutical Manufacturing*, 55 B.C. L. REV. 491, 509–39 (2014). For discussions of innovation failures outside health care, see Brett Frischmann & Mark P. McKenna, *Comparative Analysis of Innovation Failures and Institutions in Context*, 57 HOUS. L. REV. 313, 313–14 (2019); Laura G. Pedraza-Fariña, *The Social Origins of Innovation Failures*, 70 SMU L. REV. 377, 377–78 (2017).

70. Buccafusco & Masur, *supra* note 69, at 1423–26.

71. Noel & Ellison, *supra* note 67, at 1; *see also* Cam Waller, *How Technology Is Improving Healthcare for People with Disabilities*, ACCESSIBILITY.COM (Mar. 22, 2022), https://www.accessibility.com/blog/how-technology-is-improving-healthcare-for-people-with-disabilities [https://perma.cc/JS25-Q5YB].

72. Reed V. Tuckson, Margo Edmunds & Michael L. Hodgkins, *Telehealth*, 377 NEW ENG. J. MED. 1585, 1585 (2017).

73. *Why Use Telehealth?*, TELEHEALTH.HHS.GOV (Feb. 29, 2024), https://telehealth.hhs.gov/patients/why-use-telehealth?gad_source=1&gclid=CjwKCAjwhvioBhA4EiwAX25uj1aI29X7mHyDrU8z95OvmDiR98DHHQwnUPIHc805MRKczrSeE7cKshoCFOkQAvD_BwE [https://perma.cc/YG5V-P3AR].

74. Noel & Ellison, *supra* note 67, at 1.

75. NAT'L P'SHIP FOR WOMEN & FAMS., ENGAGING PATIENTS AND FAMILIES: HOW CONSUMERS VALUE AND USE HEALTH IT 3 (Dec. 2014), https://nationalpartnership.org/wp-content/uploads/2023/02/engaging-patients-and-families.pdf [https://perma.cc/F48M-6KW2].

patients who had online access to their health data reported greater trust in their providers.[76] And patients rated virtual health care services, such as online appointment booking and prescription refills, more highly than their analog counterparts.[77] Patients have reported that virtual health care saves them both time and money.[78] Finally, the more frequently a patient accesses their health records online, the more likely that patient is to feel motivated to improve their health.[79]

These positive experiences can translate into better access and quality of care. Patients can communicate with providers more easily, which will in turn give doctors a better sense of how their patients are doing. The result is that providers can more readily identify—and perhaps even prevent the onset of—disease, helping patients better manage their health.[80] Preventing avoidable medical events and conditions has the added benefit of lowering health care costs overall.[81]

Additionally, improved outcomes and greater patient satisfaction could have financial benefits for providers. First, increased efficiency alone can mean more revenue. A program that used technology for the remote monitoring and management of ICU patients reduced mortality rates and the length of patients stays, allowing the ICU to treat more patients.[82] More patients meant more money for the provider, even after factoring in the program's implementation costs.[83] Second, new payment structures create incentives to focus on patient outcomes. Historically, American health care has adopted a "fee-for-service" model: Patients pay providers based on the health care that they receive.[84] A primary care doctor might charge $150 for a visit, or a COVID-19 antibody test might cost $50. However, skyrocketing health care costs have caused reformers to rethink that payment system.[85]

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76. *Id.* at 38.

77. *Id.* at 36.

78. Josephine C. Jacobs, Jiaqi Hu, Cindie Slightam, Amy Gregory & Donna M. Zulman, *Virtual Savings: Patient-Reported Time and Money Savings from a VA National Telehealth Tablet Initiative*, 26 TELEMED. & E-HEALTH 1178, 1179–80 (2020).

79. NAT'L P'SHIP FOR WOMEN & FAMS., *supra* note 75, at 29.

80. Jones et al., *supra* note 3, at 516; *see also* Donna O'Shea, *How Health Care Providers Can Use Technology to Help Improve Patient Care and Their Practices*, MOD. HEALTHCARE (Dec. 18, 2020, 9:44 AM), https://www.modernhealthcare.com/technology/how-health-care-providers-can-use-technology-help-improve-patient-care-and-their [https://perma.cc/YW22-W2UF].

81. Making those technologies accessible will have associated costs, either through increased enforcement of existing laws or through the creation of new innovation policy programs. It is therefore hard to predict the net financial impact of accessible virtual health care.

82. Jason R. Leong, Carl A. Sirio & Armando J. Rotondi, *eICU Program Favorably Affects Clinical and Economic Outcomes*, CRITICAL CARE 1–3 (Sept. 8, 2005), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1297635/pdf/cc3814.pdf [https://perma.cc/G6N2-DHCZ].

83. *Id.*

84. David Novikov, Zlatan Cizmic, James E. Feng, Richard Iorio & Morteza Meftah, *The Historical Development of Value-Based Care: How We Got Here*, ORTHOPAEDIC F. e144(3) (Nov. 21, 2018), https://journals.lww.com/jbjsjournal/fulltext/2018/11210/the_historical_development_of_value_based_care_.15.aspx [https://perma.cc/GT4A-34KF].

85. *Id.* at e144(6).

In recent years, there has been a move toward "value-based care."[86] Value-based care instead compensates providers based on health outcomes.[87] Put differently, it is a payment system built on outputs, not inputs. Virtual health care, deployed effectively, therefore may benefit providers under this new payment model, as patient satisfaction and treatment effectiveness are factors in value-based care.[88]

2. Benefits of Accessibility

Patients with disabilities had much to gain from virtual health care, both absolutely and as compared to patients without disabilities.[89] Accessible technology could mean safer, more effective, more affordable health care.[90] For example, virtual appointments could decrease the impact of inaccessible physical environments, leading to more regular visits and better treatment. Patient portals could improve communication and facilitate engagement. Remote patient monitoring could reduce hospital stays and improve the prognosis for chronic conditions. Not surprisingly then, people with disabilities want virtual health care products and services.[91] However, as discussed in Part II, patients with disabilities are not the purchasers of the technologies.

Recall from the Introduction that patients with disabilities tend to have greater health care needs than patients without disabilities. Because people with disabilities experience the shortcomings of our current health care system more acutely, they would enjoy greater relative benefits from the same innovations. And accessible technology could even amplify the financial benefits enjoyed by providers. Since people with disabilities consume more health care and with higher frequency, their opinions and outcomes could matter more for value-based care. And better treatment could also lead to increased efficiency in fee-for-service.

Accessible virtual health care could also help dismantle structural discrimination against people with disabilities. Decades before the ADA, disability rights champion Jacobus tenBroek argued that people with disabilities have a right "to live in the world."[92] This right requires the full integration of people with disabilities into all aspects of communal life.[93] More

86. *Id.* at e144(4–6). *See generally* Michael E. Porter, *What Is Value in Health Care?*, 363 NEW ENG. J. MED. 2477 (2010) (arguing that high value for patients must be the goal of health care).

87. Porter, *supra* note 86, at 2477.

88. Jones et al., *supra* note 3, at 515–16.

89. *See, e.g.*, Noel & Ellison, *supra* note 67, at 2–3; Powers et al., *supra* note 16, at 12; Valdez et al., *supra* note 17, at 390–91; Waller, *supra* note 71.

90. Annaswamy et al., *supra* note 17, at 1–2.

91. In particular, younger adults with disabilities would like to be able to use health tech. *See* Noel & Ellison, *supra* note 67, at 1.

92. Jacobus tenBroek, *The Right to Live in the World: The Disabled in the Law of Torts*, 54 CALIF. L. REV. 841, 843–47 (1966).

93. *Id.*; *see also* Olmstead v. L.C. *ex rel.* Zimring, 527 U.S. 581, 587 (1999) (entitling people with disabilities to receive public benefits in the community, opposed to exclusively in institutions). Although the law requires community placement, decision makers still favor nursing homes and

recently, Brad Areheart and Michael Stein have extended this argument to advocate for a right "to live in the Internet."[94] As they explain, inaccessible technologies have the paradoxical effect of creating opportunities for people without disabilities while erecting barriers for people with disabilities.[95] The solution is to build accessibility and inclusivity into the digital world.[96] Justice may in fact demand it. Some authors have argued that we, as a society, have "a strong moral imperative to inclusive innovation."[97]

Perhaps nowhere is that imperative more apparent than in health care. Many people find it upsetting when a person goes without needed care due to a Kantian moral duty to ease the suffering of others.[98] These sentiments demonstrate that ensuring health care access—whether traditional or virtual—is essential to our shared humanity. International organizations, including the World Health Organization ("WHO") and the United Nations ("UN"), have both recognized that "[t]he right to health is a fundamental part of our human rights and of our understanding of a life in dignity."[99] The UN explains that individuals around the world should be able to access quality health care free from discrimination.[100] In April 2023, "the Special Rappoteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health" issued a report on the impact of digital innovation on the right to health.[101] In the report, Tlaleng Mofokeng acknowledges that virtual health care can improve access for people with disabilities[102] but that the same innovations could also perpetuate ableism.[103]

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institutions for their alleged—yet disputed—cost-savings. *See* NAT'L COUNCIL ON DISABILITY, PRESERVING OUR FREEDOM: ENDING INSTITUTIONALIZATION OF PEOPLE WITH DISABILITIES DURING AND AFTER DISASTERS 9 (2019); Eric Rosenthal & Arlene Kanter, *The Right to Community Integration for People with Disabilities Under United States and International Law*, DISABILITY RTS. EDUC. & DEF. FUND, https://dredf.org/news/publications/disability-rights-law-and-policy/the-right-to-community-integration-for-people-with-disabilities-under-united-states-and-international-law [https://perma.cc/RB9H-QVRJ].

94. Bradley Allan Areheart & Michael Ashley Stein, *Integrating the Internet*, 83 GEO. WASH. L. REV. 449, 456–57 (2015).

95. *Id.* at 458–59.

96. *Id.* at 467.

97. Noel & Ellison, *supra* note 67, at 1.

98. Einer Elhauge, *Allocating Health Care Morally*, 82 CALIF. L. REV. 1449, 1493 (1994). Per the philosopher Immanuel Kant, people are not a means to an end but rather an end unto themselves, as people have inherent value and are thus entitled to dignity. Immanuel Kant, *Groundwork for the Metaphysics of Morals*, *in* JUSTICE: A READER 183–84 (Michael J. Sandel ed., Arnulf Zweig trans., 2007) (noting "the sole condition under which anything can be an end in itself has not mere relative worth, i.e., a price, but an inner worth – i.e., dignity").

99. OFF. OF THE UNITED NATIONS HIGH COMM'R FOR HUM. RTS. & WORLD HEALTH ORG., THE RIGHT TO HEALTH: FACT SHEET NO. 31, at 1 (2008). Notably, the Convention on the Rights of Persons with Disabilities also recognizes a right to health. G.A. Res. 61/106, at 18, Convention on the Rights of Persons with Disabilities (Dec. 13, 2006).

100. OFF. OF THE UNITED NATIONS HIGH COMM'R FOR HUM. RTS. & WORLD HEALTH ORG., *supra* note 99, at 4.

101. Mofokeng, *supra* note 65, at 1.

102. *Id.* at 9.

103. *Id.* at 1.

Mofokeng recommends that national governments and the private sector work together to ensure that virtual health care promotes health equitably.[104] Accessible technology is, therefore, essential to the human rights of people with disabilities.

Moreover, designing virtual health care accessibly could result in better technology for everyone through spillover effects.[105] Certainly, people without disabilities have reaped the benefits of accessible design in the physical environment.[106] Elevators, curb-cuts, and ramps help not only people who use wheelchairs but also people with strollers and hand trucks.[107] Importantly, these environmental-level changes are enduring: People can use them for years to come.[108]

Accessible digital design has had similar effects.[109] In a major legal victory for online accessibility, the streaming company Netflix entered a settlement agreement to caption its content.[110] While this change responded to the needs of Deaf customers, research shows that same-language captioning benefits all users, regardless of disability.[111] A study from 2021 found that eighty percent of hearing viewers ages eighteen to twenty-five use captioning because it helped them better understand what they were watching.[112] These same advantages could easily translate to virtual health care. For example, imagine the positive impact that accurate captioning could have during virtual appointments if a doctor references a difficult-to-spell diagnosis or medication. Reading the same words in print could help hearing patients better comprehend and retain important medical information. Those improvements would not only give developers an edge in the market but would result in better technology, and in turn health care, overall.

The discussion above demonstrates that accessible virtual health care has real potential to benefit people with disabilities and generate welfare for society as a whole. Yet, as explained earlier in this Part, many people with

104. The Special Rapporteur also notes that businesses, including technology companies, have obligations under human rights laws beyond simply complying with the laws of their respective countries. *Id.* at 7; *see also id.* at 12 (advocating for "design justice" from the private sector).

105. Christopher Buccafusco, *Disability and Design*, 95 N.Y.U. L. REV. 952, 999–1000 (2020).

106. *Id.*

107. *Id.*

108. *Id.* at 998.

109. Noel & Ellison, *supra* note 67, at 2 ("In a framework that mirrors the societal benefits of universal design, what is useful for people with disabilities is also often useful for most others.").

110. Katie Johnston, *Netflix Reaches Deal to End Lawsuit over Closed Captioning of Streamed Movies, TV Shows*, DISABILITY RTS. EDUC. & DEF. FUND (Oct. 10, 2012, 5:18 PM), https://dredf.org/netflix-reaches-deal-to-end-lawsuit-over-closed-captioning-of-streamed-movies-tv-shows [https://perma.cc/8L78-PFAP]. The settlement followed *Nat'l Ass'n of the Deaf v. Netflix, Inc.*, 869 F. Supp. 2d 196 (D. Mass. 2012).

111. *See generally* Morton Ann Gernsbacher, *Video Captions Benefit Everyone*, 2 POL'Y INSIGHTS BEHAV. & BRAIN SCIS. 195 (2015) (describing the ways in which video captioning benefits people of all ages).

112. Ian Youngs, *Young Viewers Prefer TV Subtitles, Research Suggests*, BBC (Nov. 14, 2021), https://www.bbc.com/news/entertainment-arts-59259964 [https://perma.cc/9FAV-RY5N]; Oughton, *supra* note 13.

disabilities cannot use the lion's share of these innovations. This inaccessibility is an innovation failure. Accessible virtual health care has the power to generate welfare not just for patients with disabilities but for everyone. And the proliferation of technology designed to promote accessibility implies that such innovations are possible. As a result, a market for these technologies *should* exist. Yet where are the accessible products and services? Unfortunately, as explained in the following Part, neither providers nor developers seem to appreciate the merits of these tools.

* * *

The current lack of accessible virtual health care is an innovation failure. Technologies like videoconferencing, patient portals, and remote patient monitoring all have the potential to improve health care for people with disabilities and to address several entrenched health disparities. Additionally, designing accessibly may generate products and services that work better for everyone. Put simply, accessible virtual health would generate significant welfare. Yet despite these benefits, much of virtual health care remains inaccessible, creating new barriers for people with disabilities. Part II considers why this socially costly innovation failure occurred, despite laws requiring providers to offer their patients accessible, nondiscriminatory health care.

II. WHY VIRTUAL HEALTH CARE IS INACCESSIBLE

Given the tremendous potential of accessible virtual health care to generate welfare, developers should be designing accessibly. However, there is a relatively straightforward explanation for why they are not. Health care providers—the target market for virtual health care products and services—do not value accessibility.[113] To start, providers regrettably underserve patients with disabilities even in analog settings. Although accessible virtual health care could generate significant social value, it is less clear that such care will make providers or developers money. But while the lack of accessible virtual health care makes sense from a purely financial standpoint, it is puzzling nonetheless because federal antidiscrimination law requires providers to offer equitable, accessible health care to patients with disabilities. These obligations should create a demand for accessible virtual health care products and services. However, as Part I demonstrates, the market has not produced those technologies. This Part considers why.

113. Although some providers do generate their own technology, see W. Nicholson Price II, Rachel E. Sachs & Rebecca S. Eisenberg, *New Innovation Models in Medical AI*, 99 WASH. U. L. REV. 1121, 1127–40 (2022) (describing health technologies created by nontraditional innovators including health systems), this Article focuses on technologies created by third-party developers and sold to providers.

A. *Lack of Demand in Current Market*

Economic theory predicts that enough demand will create supply.[114] However, the demand-side of the market for accessible virtual health care is subject to distortions. While patients are the end users, providers are the purchasers. As a result, developers create the products and services that they think providers will want to buy. When the preferences of the buyers and the end users do not coincide, that misalignment interferes with the market.[115] As many of us know too well, providers often have different goals and priorities than their patients.[116] Because developers create the products and services that they believe providers want, those technologies may not function well for patients, including patients with disabilities.

1. Developers

If developers believed that providers shopped for accessibility, then they would design accessible products and services.[117] Following the Health Information Technology for Economic and Clinical Health Act ("HITECH Act")—which included incentives to comply with the Health Insurance Portability and Accountability Act ("HIPAA")[118]—companies began designing HIPAA-compliant technologies.[119]

Since the extent to which HIPAA directly applies to virtual health care products and services varies,[120] the near-ubiquitous claims of HIPAA compliance

114. *See* Roger Farmer, *Demand Creates Its Own Supply*, ROGER FARMER'S ECONOMIC WINDOW (Oct. 24, 2015, 1:26 PM), http://rogerfarmerblog.blogspot.com/2015/10/demand-creates-its-own-supply.html [https://perma.cc/7SA6-JZRA].

115. Buccafusco, *supra* note 105, at 959.

116. This problem is not unlike what occurs in the pharmaceutical market, where patients do not select the drugs that they use. *See* Buccafusco & Masur, *supra* note 69, at 1414. For a discussion of the lack of demand for accessible virtual health care, see *infra* Section II.B.

117. Advertising can offer a window into buyers perceived preferences. For a series of articles exploring and justifying this claim, see generally Jim Hawkins & Renee Knake, *The Behavioral Economics of Lawyer Advertising: An Empirical Assessment*, 2019 U. ILL. L. REV. 1005; Jim Hawkins, *Exploiting Advertising*, 80 L. & CONTEMP. PROBS. 43 (2017); Jim Hawkins, *Using Advertisements to Diagnose Behavioral Market Failure in the Payday Lending Market*, 51 WAKE FOREST L. REV. 57 (2016).

118. Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191, 110 Stat. 1936 (codified as amended in scattered sections of 42 U.S.C.). HIPAA's Privacy Rule protects certain identifiable health information from unauthorized disclosure, and the statute's Security Rule sets national standards regarding health data stewardship. Steve Alder, *What Is the HITECH Act?*, HIPAA J. (Jan. 11, 2024), https://www.hipaajournal.com/what-is-the-hitech-act [https://perma.cc/W72E-87XS].

119. *See, e.g.*, *FollowMyHealth and HIPAA*, FOLLOWMYHEALTH (Feb. 16, 2024, 10:35 AM), https://followmyhealth.my.site.com/support/s/article/FollowMyHealth-and-HIPAA [https://perma.cc/U35D-RET9]; *Protect Patients with a HIPAA-Compliant Communications System*, RINGRX, https://ringrx.com/ringrx-hipaa-regulations-compliance/ [https://web.archive.org/web/20230321214423/https://ringrx.com/ringrx-hipaa-regulations-compliance]; *Secure, HIPAA-Compliant Telehealth*, SIMPLEPRACTICE, https://www.simplepractice.com/features/telehealth [https://perma.cc/NY82-A4GJ].

120. HIPAA does not apply to third-party technology companies unless they are business associates. *See* 45 C.F.R. § 160.103 (2023) (defining covered entities to include health care

seem geared to attract providers, not to fulfill legal obligations. Although FollowMyHealth purports to comply with HIPAA, its website is explicit that the statute does not apply to its patient portal.[121] Thus, compliance is a strategic choice to draw in customers, not a legal requirement. Some companies go even further and voluntarily subject themselves to the law. For example, RingRx proudly identifies as a business associate with its own independent legal obligations under HIPAA.[122] Thus, while FollowMyHealth opts to remain outside the bounds of HIPAA, RingRx *chooses* to take on obligations. Yet, in both cases, developers follow the law, not because they have to, but because they believe that providers shop for HIPAA compliance. However, the lack of accessible options indicates that developers do not believe that providers likewise value accessibility.

Without providers demanding accessibility, creating accessible products and services may simply not seem profitable for developers. The positive spillover effects described in Section I.B.2[123] are not sufficient to offset the costs of accessible design. Although designing for users with disabilities could result in better technology overall, those benefits are not guaranteed and would be rather indirect. The costs—which would be concentrated with individual developers—are, by contrast, quite high.

Moreover, designing accessibly is inherently complex. Accessible technology should be compatible with both external and internal accessibility features; facilitate multiple modes of communication across different contexts (like the ability to send text over videoconferencing or voice messages through patient portals); have accessible defaults but also capacities for personalization; and ensure flexibility (like ensuring that captioning is available for impromptu appointments or that multiple users with different needs can participate).[124] Because of the diversity of people with disabilities, a one-size-fits-all solution is not available. Consider this comparison. Making technology that complies with HIPAA is relatively straightforward. Once developers secure their data and adopt the appropriate protocols, all users will get the same level of benefit. Accessibility, however, presents a more complicated problem. Changes that would make a technology more accessible for one set of users could make it less accessible for another set. For instance, the same auditory features that enable a blind patient to use a given product or service could render it

providers, health plans, health care clearinghouses, and their business associates); *see also id.* (defining business associate).

121. FOLLOWMYHEALTH, *supra* note 29. The creators of FollowMyHealth, a product from the company Veradigm, intentionally insulated it from HIPAA coverage. *Our Story: Who We Are*, VERADIGM, https://veradigm.com/about-veradigm/overview [https://perma.cc/5BB5-ZMU7]. Patients using FollowMyHealth authorize their health care providers to release their medical records to Veradigm, which is a business associate under HIPAA. Once that authorization goes through, Veradigm releases that information to FollowMyHealth, effectively a third party, and patients acknowledge that release. However, HIPAA does not extend to third parties.

122. Its website informed providers that they will "receive a Business Associate Agreement at the start of service," which it refers to as "the gold standard to stay in compliance with HIPAA regulations." RINGRX, *supra* note 119.

123. *See supra* notes 105–12 and accompanying text.

124. Valdez et al., *supra* note 17, at 390.

unusable for a patient with a sensory processing disorder. Developers must then decide how to strike the appropriate balance between the potentially conflicting needs of different types of users with disabilities.

2. Providers

Developers are thus not designing accessibly because of a perceived lack of demand. However, that fact does not explain why providers are not insisting on accessible virtual health care products and services. This Article intentionally uses the term "providers"—and not doctors or physicians—when discussing who buys these tools. Usually, the "providers" doing the purchasing are not individual doctors but large hospital systems or other corporate entities.[125] Sixty-seven percent of American hospitals are affiliated with a system, which accounts for seventy-six percent of hospital beds.[126] As such, many individual physicians have no personal say regarding which products and services they must use in their practices. But even so, the lack of demand for accessible virtual health care seems to be nearly universal. Which raises the question, why don't providers, from large hospital systems to solo practitioners, shop for accessibility?

i. Lack of Adequate Financial Incentives

One simple explanation is that providers do not perceive accessibility as positively impacting their bottom lines. It's not just for-profit providers that make money from their patients. For some time now, American health care has increasingly focused more on revenue and less on patient care. This trend, which some experts argue began as far back as the 1960s, has led to what one set of authors calls the "financialization" of health care.[127]

Financialization has occurred along two valences. First, nonprofit hospitals, faced with uncertain government reimbursement at stagnant rates, began to adopt financial strategies to stay open.[128] These efforts turned out to be massively successful. A study published in *Health Affairs* came to the mind-boggling conclusion that seven of the ten most profitable hospitals in the United States are *nonprofit*.[129] Second, the financial sector identified health

125. Nathan Eddy, *Nearly 70% of U.S. Physicians Are Employed by Hospitals or Corporate Entities*, HEALTHCARE FIN. (July 13, 2021), https://www.healthcarefinancenews.com/news/nearly-70-us-physicians-are-employed-hospitals-or-corporate-entities [https://perma.cc/B4JV-TZR3]. As of 2021, only three out of ten physicians practice in independent medical practices. *Id.*

126. *Fast Facts: U.S. Health Systems Infographic*, AM. HOSP. ASS'N (Feb. 23, 2024), https://www.aha.org/system/files/media/file/2024/02/Fast-Facts-US-Health-Systems-Infographic-2024.pdf [https://perma.cc/XQ33-APKJ].

127. EILEEN APPELBAUM & ROSEMARY BATT, FINANCIALIZATION IN HEALTH CARE: THE TRANSFORMATION OF US HOSPITAL SYSTEMS 4–6, 11–15 (2021).

128. *Id.* at 10–11.

129. Ge Bai & Gerard F. Anderson, *A More Detailed Understanding of Factors Associated with Hospital Profitability*, 35 HEALTH AFFS. 889, 893 (2016).

care as an extremely lucrative industry and began investing.[130] According to one report, the result is a health care system "in which the logic of financial calculations often overshadows the logic of human care giving."[131] Thus, even if accessible technology could improve patient access, experiences, and outcomes, providers may not find it worth the additional effort to shop for accessibility if the technology will not significantly impact their revenues.

But recall that virtual health care can be profitable for providers, either through increased efficiency under a fee-for-service model or improved outcomes and greater patient satisfaction in value-based care.[132] As noted in the preceding Part, some large hospital systems have already recognized the value of these technologies.[133] Given that people with disabilities tend to have greater health care needs, it would seem that selecting products and services that work well for them might amplify those positive effects. Nonetheless, the lack of accessible technology indicates that accessibility is not a priority for providers. There are at least two possible explanations. First, if providers are acting rationally, it could be that the additional economic benefits of *accessible* virtual health care, as compared with the currently available technologies, are not great enough for them to demand accessibility. Second, if accessible virtual health care would carry with it significant financial gains, then providers could be acting against their own best interests, perhaps due to ignorance, indifference, or even animus.[134]

Again, patients will have difficulty influencing this market. Insurers pay over seventy percent of the health care costs in the United States.[135] Insofar as patients do pay for health care, the individuals that have insurance often split those costs with their insurers, through premiums and co-pays.[136] In other words, insurers—and not patients—are the primary purchasers of health care. Neither public nor private insurers consider accessibility when deciding how

130. APPELBAUM & BATT, *supra* note 127, at 11–12; Erin C. Fuse Brown & Mark A. Hall, *Private Equity and the Corporatization of Health Care*, 76 STAN. L. REV. 527, 535, 582 (2024) (arguing that this trend has culminated with the incursion of private equity into health care).

131. APPELBAUM & BATT, *supra* note 127, at 5.

132. *See supra* notes 82–88 and accompanying text.

133. *See supra* note 83 and accompanying text.

134. For a discussion of negative attitudes towards disability, see *infra* notes 140–48 and accompanying text.

135. *See How Does Government Healthcare Spending Differ from Private Insurance?*, PETER G. PETERSON FOUND. (Mar. 25, 2024), https://www.pgpf.org/blog/2023/02/how-does-government-healthcare-spending-differ-from-private-insurance [https://perma.cc/TV7H-8T24]. Notably, patients are not even responsible for the remaining twenty-four percent of health care spending. They share that burden with third-party payors, researchers, and public health activities.

136. *Id.* (including patient-paid premiums and co-pays in the category of out-of-pocket expenses); *see also* Michael Bihari, *What Is a Health Insurance Premium?*, VERYWELL HEALTH (Aug. 6, 2023), https://www.verywellhealth.com/health-insurance-premiums-1738769 [https://perma.cc/Q6RT-UTEK]; *Copay, Coinsurance and Out-of-Pocket Maximum*, UNITED HEALTHCARE, https://www.uhc.com/understanding-health-insurance/understanding-health-insurance-costs/types-of-health-insurance-costs/copay-coinsurance-and-out-of-pocket-maximum [https://perma.cc/M3FN-WUM6]; Miranda Marquit, *What Does Out-of-Pocket Mean in Health Insurance?*, HEALTHCARE.COM (Oct. 27, 2023), https://www.healthcare.com/what-does-out-of-pocket-mean-health-insurance-20245 [https://perma.cc/K7RM-8MFK].

much to reimburse providers. Because accessible technology is not a priority for insurers, it is also not a priority for providers. Moreover, the kind of insurance that an individual has and the terms of their policy greatly influence where a patient accesses care. Provider networks,[137] geographic limitations,[138] and referral requirements[139] can all tip the scales in favor of certain providers and against others. Thus, more often than not, an unsatisfied patient cannot simply seek out a different provider without facing serious financial consequences. And, even if they could, the lack of accessible products and services means that they may be unable to find a provider offering accessible virtual health care.

ii. Physician Attitudes

And while individual doctors are frequently not personally responsible for purchasing virtual health care technology, their attitudes may nonetheless impact the extent to which medicine, as a field, values accessibility.

Research has shown that physicians do not have a good understanding of the lived experience of disability.[140] A survey of over seven hundred physicians, half practicing in primary care and half practicing in specialties, found that only about forty percent were very confident in their ability to provide equitable care for patients with disabilities.[141] Unfortunately, physicians may seek to avoid patients with disabilities for a variety of reasons.[142] A related focus-group study reported that doctors sometimes intentionally discharged or denied patients with disabilities out of the concern that they lacked the appropriate knowledge, skills, or resources to provide adequate care.[143] This research reveals that, even in traditional health care settings, physicians may

137. *Navigating the System: What Are Provider Networks?*, NH HEALTHCOST (June 10, 2024), https://nhhealthcost.nh.gov/guide/question/what-are-provider-networks [https://perma.cc/4NV V-Z54Z] (explaining that "[p]rovider networks are made up of doctors, other healthcare providers, pharmacies, and facilities who contract with insurance companies to become an 'in-network' provider").

138. *See* HEALTH INS. MARKETPLACE, WHAT YOU SHOULD KNOW ABOUT PROVIDER NETWORKS (2024), https://marketplace.cms.gov/outreach-and-education/what-you-should-know-provider-networks.pdf [https://perma.cc/79Q4-HDT9] (showing that providers may be limited to certain geographic service areas).

139. *Id.* ("You may have to pay more, and/or get a referral if you choose to get care from a provider who isn't in your plan's network.").

140. Nicole Agaronnik, Eric G. Campbell, Julie Ressalam & Lisa I. Iezzoni, *Exploring Issues Relating to Disability Cultural Competence Among Practicing Physicians*, 12 DISABILITY & HEALTH J. 403, 408–09 (2019).

141. Lisa I. Iezzoni et al., *supra* note 24, at 300, 302.

142. Gina Kolata, *These Doctors Admit They Don't Want Patients with Disabilities*, N.Y. TIMES (Oct. 19, 2022), https://www.nytimes.com/2022/10/19/health/doctors-patients-disabilities.html (on file with the *Iowa Law Review*).

143. Tara Lagu et al., *'I Am Not the Doctor for You': Physicians' Attitudes About Caring for People with Disabilities*, 41 HEALTH AFFS. 1387, 1391–92 (2022).

not know how to best serve their patients with disabilities.[144] Thus, if given the opportunity to select virtual health care products and services, doctors are very unlikely to know which technologies are accessible.

Moreover, understanding what makes technology accessible requires expertise beyond that of individual physicians and perhaps even large hospital systems. It may be difficult to know how well a given innovation will work for someone with a disability until that individual actually uses it. Although individuals with disabilities can try different products and services in the consumer market, they cannot shop around for virtual health care. If people with disabilities themselves do not always know ex ante what technology will perform best, even providers with the best of intentions will still encounter difficulty shopping for accessibility without some guidance.

However, ignorance or indifference is only part of the story. Multiple physicians in the focus group study expressed outward bias against patients with disabilities, including the belief that they "are an entitled population" and "can create a big thing out of nothing."[145] In another study, consisting of qualitative interviews with twenty physicians of various specialties, participants reported feeling pity or disdain for people with certain kinds of disabilities.[146] Regrettably, physicians indicated that they sometimes acted on their biases.[147] Doctors who believe that patients with disabilities are "difficult" and undesirable would probably not shop for products and services with that population in mind.

And finally, some providers may believe that they do not treat enough patients with disabilities to warrant prioritizing their needs when purchasing virtual health care tools. This de-prioritization certainly seems to be the case when it comes to accessible medical equipment, despite the legal mandates described below. Participants in the focus group indicated that they saw a relatively small percentage of patients with disabilities, which did not justify investing in accessible equipment.[148] Providers, large and small, may well approach purchasing virtual health care technologies with the same mindset.

B. FAILURE OF ANTIDISCRIMINATION LAW

As the preceding Section demonstrates, providers do not have sufficient economic incentives to shop for accessibility. However, profitability is only one source of demand. Chris Buccafusco argues that antidiscrimination laws

144. Some authors attribute this failure to understand the needs and preferences of patients with disabilities to a lack of "cultural competence." *Cultural Competence in Health Care: Is It Important for People with Chronic Conditions*, GEO. U. HEALTH POL'Y INST., https://hpi.georgetown.edu/cultural [https://perma.cc/A7J9-ZVL2]; Mary Crossley, *Disability Cultural Competence in the Medical Profession*, 9 ST. LOUIS U. J. HEALTH L. & POL'Y 89, 91–92 (2015); *see also infra* Part III.

145. Lagu et al., *supra* note 143, at 1391.

146. *Id.*; Agaronnik et al., *supra* note 140, at 408.

147. Lagu et al., *supra* note 143, at 1391; Agaronnik et al., *supra* note 140, at 408.

148. Lagu et al., *supra* note 143, at 1391–92. This line of reasoning of course ignores that the lack of accessible equipment may itself reduce the number of patients with disabilities that go to a given medical practice. *Id.* at 1392.

can function as demand-side innovation incentives.[149] Notably, disability rights laws define discrimination as not only negative differential treatment but also as failing to make reasonable accommodations or modifications and offering goods, programs, and services in inaccessible settings.[150] Because those statutes require covered entities to be accessible to people with disabilities, the covered entities will in turn shop for products and services to enable them to fulfill their legal obligations. Innovators will respond to this new demand by creating products and services that promote access. For example, when the Department of Justice ("DOJ") updated its ADA regulations to require public accommodations to make their pools accessible to guests using wheelchairs,[151] that change created a market for poolside chair lifts that had not previously existed.[152]

Thus, if the law mandates that providers offer health care accessibly—and those obligations include virtual health care—there should be a demand for accessible technology. Moreover, the threat of litigation could also increase providers' willingness to pay for accessible products and services.[153] Put differently, providers could be willing to pay an accessibility premium to avoid liability.[154] Yet, for the reasons below, existing antidiscrimination laws have not created a demand for accessible virtual health care technology.

1. Health Care Antidiscrimination Laws

Health care providers in the United States have clear legal obligations to offer accessible, nondiscriminatory health care to patients with disabilities. Several federal disability rights laws either apply directly to providers[155] or

149. Buccafusco, *supra* note 105, at 985–86; *see also* Samuel R. Bagenstos, *The Perversity of Limited Civil Rights Remedies: The Case of "Abusive" ADA Litigation*, 54 UCLA L. REV. 1, 8 (2006) (explaining how the ADA overcomes economic explanations for inaccessibility).

150. Because of these provisions, some scholars have questioned whether disability rights laws are antidiscrimination laws at all. *See* Samuel Issacharoff & Justin Nelson, *Discrimination with a Difference: Can Employment Discrimination Law Accommodate the Americans with Disabilities Act?*, 79 N.C. L. REV. 307, 314–16 (2001) (arguing that the ADA confers special rights on the disabled not available to other protected classes). *But see* Samuel R. Bagenstos, *Subordination, Stigma, and "Disability,"* 86 VA. L. REV. 397, 459 (2000) (arguing that the ADA does not give the disabled special treatment).

151. 36 C.F.R. pt. 1191, App. D, § 1009 (2023).

152. Danny King, *Hotels Scramble to Meet Chair Lift Mandate for Swimming Pools*, TRAVEL WKLY. (May 14, 2012), https://www.travelweekly.com/Travel-News/Hotel-News/Hotels-scramble-to-meet-chair-lift-mandate-for-swimming-pools [https://perma.cc/9U3H-FRDT].

153. Buccafusco, *supra* note 105, at 985–86, 997–98 (explaining that covered entities should theoretically want to pay anything less than the potential cost of liability to adopt accessible technology but in reality will want to comply as cheaply as possible).

154. Designing accessibly requires additional time, effort, and expertise. Developers may offset these costs by charging more for those products and services. This additional cost can be thought of as an accessibility premium.

155. *See* 42 U.S.C. § 12132 (covering state and local government entities); *id.* § 12181(7)(F) (expressly covering privately owned health care providers); Bonnie Poitras Tucker, *Access to Health Care for Individuals with Hearing Impairments*, 37 HOUS. L. REV. 1101, 1107 (2000) (noting that Title II covers public health care providers and Title III covers private health care providers).

reach them because they accept federal funding.[156] The result is at least one federal disability rights law reaches practically every health care provider in the United States.[157]

Summary of Disability Rights Laws Covering Health Care Providers

Federal Disability Rights Law	Covered Entity	Type of Provider
Section 1557	Federally-funded health program	Any provider accepting federal funding
Section 504	Federally-funded entity	Any provider accepting federal funding
Title II	State or local government	State- or locally-run providers (regardless of whether they accept federal funding)
Title III	Public accommodation	Private providers (regardless of whether they accept federal funding)

Although none of the statutes address virtual health care directly, their interpreting agencies have explicitly extended some protections online. Federal agencies adopted three new rules in 2024 that govern the accessibility of virtual health care technology under three of the above provisions: Section 504, Title II, and Section 1557.

As of 2024, DOJ and HHS adopted regulations holding covered entities liable for inaccessible technology under Title II and Section 504, respectively.[158]

156. Section 1557 of the Affordable Care Act ("ACA") forbids health programs that receive federal financial assistance from discriminating based on disability and other protected categories. 42 U.S.C. § 18116(a); *see also* 45 C.F.R. § 92.2(a) ("[A]n individual shall not . . . be subjected to discrimination under, any health program or activity, any part of which is receiving federal financial assistance . . . .").

157. Title II of the ADA covers state- and local-run providers, and Title III covers privately run providers. Moreover, most health care providers accept some kind of federal money (usually Medicare), making them subject to Section 504 and Section 1557. Courts have interpreted "recipient" broadly to extend beyond those who *directly* receive federal financial assistance. *See* U.S. Dep't of Transp. v. Paralyzed Veterans of Am., 477 U.S. 597, 607 (1986); *see also* Hamilton v. Ill. Cent. R.R. Co., 894 F. Supp. 1014, 1019 (S.D. Miss. 1995) ("[A] 'program or activity' need not directly receive federal financial assistance. Indirect receipt . . . is sufficient to trigger the prohibitions of the Rehabilitation Act."); Graves v. Methodist Youth Servs., Inc., 624 F. Supp. 429, 433–34 (N.D. Ill. 1985) ("[T]his court concludes that defendant indirectly received federal funding. Since this is so, it is subject to the Rehabilitation Act.").

158. *See generally* Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities, 89 Fed. Reg. 31320 (Apr. 24, 2024) (to be codified at 28 C.F.R. pt. 35); Nondiscrimination on the Basis of Disability in Programs or Activities

Both newly minted rules have entire sections devoted digital accessibility. The main provisions of both state that:

> A public entity [or recipient] shall ensure that the following are readily accessible to and usable by individuals with disabilities: (1) Web content that a public entity [or recipient] provides or makes available, directly or through contractual, licensing, or other arrangements; and (2) Mobile apps that a public entity [or recipient] provides or makes available, directly or through contractual, licensing, or other arrangements.[159]

The rules require covered entities to comply with version 2.1 of the Web Content Accessibility Guidelines ("WCAG"), the international standards for digital accessibility,[160] unless compliance would result in fundamental alterations of the providers' programs and services or impose undue burdens.[161] Large providers have two years after the publication of the final rule, whereas smaller providers have three.[162] The regulations also include exceptions for archived web content, certain preexisting documents and third-party web content, and some types of password-protected materials.[163]

Notably, the rules do not exempt apps made by third-party technology companies.[164] Thus, a provider cannot escape liability by simply shifting blame to the developer. Hopefully then, the new regulations will encourage providers to shop for accessibility, much like how they currently shop for HIPAA compliance.[165] Developers could advertise accessibility, allowing providers to quickly identify which technologies conform to the new standards.

Prior to the rules, voluntary compliance with WCAG has been poor. Although the guidelines have existed for more than twenty years, only 4.9% of

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Receiving Federal Financial Assistance, 89 Fed. Reg. 40066 (May 9, 2024) (to be codified at 45 C.F.R. pt. 84).

159. Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities, 89 Fed. Reg. at 31337; Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance, 89 Fed. Reg. at 40193.

160. The agencies selected WCAG 2.1 both for its familiarity and because it believed that performance-based standards are "too vague and subjective and could prove insufficient in providing consistent and testable requirements for web [and mobile app] accessibility." Discrimination on the Basis of Disability in Health and Human Service Programs or Activities, 88 Fed. Reg. 63392, 63428 (Sept. 14, 2023) (to be codified at 45 C.F.R. pt. 84); Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities, 89 Fed. Reg. at 31349.

161. Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities, 89 Fed. Reg. at 31337; Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance, 89 Fed. Reg. at 40193.

162. *See* sources cited *supra* note 161.

163. *See* sources cited *supra* note 161.

164. As noted, the rule includes web content and mobile apps that a covered entity makes available "through contractual, licensing, or other arrangements." *See supra* note 159 and accompanying text.

165. As noted, many companies advertise HIPAA compliance, often using prominent seals displayed throughout their websites. Providers who are shopping for technology can thus readily identify which offerings comply with HIPAA. *See supra* notes 119–22 and accompanying text.

leading hospitals in the United States have compliant websites.[166] One explanation could be that what constitutes compliance is surprisingly unclear.[167]

Multiple versions of the WCAG exist, and each version provides success criteria for three possible levels of conformance: Level A (minimum), Level AA (intermediate), and Level AAA (highest).[168] Thus, without additional guidance, developers had to decide not only *whether* to comply with the WCAG but also with which version and to what extent. Unfortunately, when people are confronted with too many options, they may experience choice overload and simply give up.[169] It is entirely possible that well-meaning developers who knew that the standards existed were unsure how to approach compliance. In fact, one author declared the WCAG 2.0 "nearly impossible for a working standards-compliant developer to understand."[170] Thankfully, the new rules offer some much-needed clarity. They adopt WCAG 2.1 as the technical standard and require covered providers to meet Level A and Level AA success criteria.[171] Thus, the regulations should lower the costs of designing accessibly by reducing the ambiguity that developers currently face.

The rules also build in some flexibility around what constitutes accessibility, ensuring that the perfect will not be the enemy of the good. Accessibility standards are notorious for their precision. Because of the level of detail involved, disability rights scholar Sam Bagenstos has described the core issues of many physical accessibility cases as "mind-numbingly boring."[172] The difference between violating the ADA and complying with the ADA could come down to a matter of millimeters.[173] And while noncompliance results in exclusion for people with disabilities, it may strike others—including judges—

166. Amanda Krupa, Jill B. Roark & Kirsten Barrett, *The Critical Role of Web Accessibility in Health Information Access, Understanding, and Use*, AM. HEALTH INFO. MGMT. ASS'N FOUND. (Nov. 3, 2022), https://ahimafoundation.ahima.org/research/the-critical-role-of-web-accessibility-in-health-information-access-understanding-and-use [https://perma.cc/AT93-CKRG]. The same numbers hold true outside of health care. *See The WebAIM Million*, WEBAIM (Mar. 28, 2024), https://webaim.org/projects/million [https://perma.cc/GYE8-74FK] (reporting that 95.9% of home pages across the top one million websites had WCAG 2.0 failures).

167. The WCAG are written in terms of design principles to give developers discretion regarding how they might comply. *WCAG 2 at a Glance*, W3C (Nov. 29, 2023), https://www.w3.org/WAI/standards-guidelines/wcag/glance [https://perma.cc/4VUK-V3WB]. While this flexibility certainly has its upsides, it also creates uncertainty.

168. *Translations of Current W3C Standards and Drafts*, W3C, https://www.w3.org/Translations [https://perma.cc/4Q5S-6M35].

169. BARRY SCHWARTZ, THE PARADOX OF CHOICE: WHY MORE IS LESS 126 (2004) (finding that when individuals are presented with too many decisions, each involving trade-offs, they avoid making any decision at all).

170. Joe Clark, *To Hell with WCAG 2*, A LIST APART (May 23, 2006), https://alistapart.com/article/tohellwithwcag2 [https://perma.cc/L8QT-V7VY].

171. Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities, 89 Fed. Reg. 31320, 31337 (Apr. 24, 2024) (to be codified at 28 C.F.R. pt. 35); Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance, 89 Fed. Reg. 40066, 40193 (May 9, 2024) (to be codified at 45 C.F.R. pt. 84).

172. Bagenstos, *supra* note 149, at 23.

173. *See* 28 C.F.R. pt. 36.

as trivial or inconsequential.[174] Digital accessibility is no different. Font sizes and contrast levels may seem just as dull and tedious as door thresholds and toilet heights. However, for patients with disabilities they can mean the difference between being able to access their test results or order their prescriptions and not.

Promoting innovation is central. Innovators will not innovate if the accessibility guidelines are too rigid. And if those regulations are outdated, they may lead providers to adopt technology that is out of step with the current state of the art. Recognizing that the goal of the new rule should be usability and not technical compliance, DOJ and HHS included provisions on equivalent facilitation. They provide that "[n]othing in this subpart prevents the use of designs, methods, or techniques as alternatives to those prescribed, provided that the alternative designs, methods, or techniques result in substantially equivalent or greater accessibility and usability of the web content or mobile app."[175] The agencies have explained that they intend the provision "to encourage flexibility and innovation."[176] In other words, the rules will allow technology to adapt in new ways that improve accessibility. Both developers and providers can then prioritize usability and not be bogged down by technical compliance.

Another benefit of the rules is that they take provider resources into account. As noted, smaller providers have an additional year to comply. All providers, regardless of size, do not need to fundamentally alter their programs and services or take on undue burdens. Yet even in such cases, covered entities "shall take any other action that would not result in such an alteration or such burdens but would nevertheless ensure that individuals with disabilities receive the benefits or services provided by the recipient to the maximum extent possible."[177]

While HHS declined to adopt a specific digital accessibility standard in its new Section 1557 rule,[178] the agency maintained its position that the provision requires "information and communication technology" to be accessible.[179]

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174. *See* Bagenstos, *supra* note 149, at 24 (making this point with reference to federal judges).

175. Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities, 89 Fed. Reg. at 31338; Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance, 89 Fed. Reg. at 40194.

176. Discrimination on the Basis of Disability in Health and Human Service Programs or Activities, 88 Fed. Reg. 63392, 63443 (Sept. 14, 2023) (to be codified at 45 C.F.R. pt. 84); Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities, 89 Fed. Reg. at 31384.

177. Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities, 89 Fed. Reg. at 31338; Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance, 89 Fed. Reg. at 40194. Providers also have the option of using conforming alternate versions if necessary due to technical or legal limitations, such as copyright restrictions. Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance, 89 Fed. Reg. at 40193–94.

178. Nondiscrimination in Health Programs and Activities, 89 Fed. Reg. 37522, 37590 (May 6, 2024) (to be codified at 45 C.F.R. in multiple pts.) (explaining that the agency "has decided not to adopt specific accessibility standards . . . at this time").

179. *Id.* at 37700.

Like the Title II and Section 504 regulations, the Section 1557 rule includes exceptions for undue financial or administrative burdens and for fundamental alterations.[180] Again covered entities must take whatever action that they can to "ensure that, to the maximum extent possible, individuals with disabilities receive the benefits or services of the health program or activity."[181] To harmonize the Section 1557 rule with the other recent regulations on digital accessibility, HHS also included a provision stating that "A recipient or State Exchange shall ensure that its health programs and activities provided through websites and mobile applications comply with the requirements of section 504 of the Rehabilitation Act, as interpreted consistent with title II of the ADA."[182]

These new federal regulations are a substantial win for digital accessibility. Detailed regulations were crucial to improving physical accessibility under the Rehabilitation Act and the ADA, so hopefully the same will be true in the digital sphere.[183] While none of the rules target developers directly, the Title II and Section 504 rules clarify providers' obligations and adopt clear yet flexible standards for compliance. Ideally, the regulations should produce a demand for accessible virtual health care products and services. However, there is reason to believe that even these well-crafted rules may fail.

2. Why Antidiscrimination Law Fails

Although this Author remains optimistic that the proposed rule could raise the demand for accessible technologies, those regulations alone may not have a meaningful impact.[184] As a threshold matter, disability rights statutes and accessibility rules have not worked particularly well in general. Despite the existence of these laws for decades, people with disabilities continue to experience significant exclusion, discrimination, and stigma.[185]

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180. *Id.*

181. *Id.*

182. *Id.*

183. Buccafusco, *supra* note 105, at 998.

184. Although the 2024 rules are an exciting development for patients with disabilities, HHS has, at least in theory, already required federally funded providers to make virtual health care accessible for several years. In 2016, the agency informally took the position that Section 504 applies to those technologies. U.S. DEP'T OF HEALTH & HUM. SERVS., OFF. FOR C.R., GUIDANCE AND RESOURCES FOR ELECTRONIC INFORMATION TECHNOLOGY: ENSURING EQUAL ACCESS TO ALL HEALTH SERVICES AND BENEFITS PROVIDED THROUGH ELECTRONIC MEANS 2 (2016). Thus, these obligations are not entirely new.

185. *See* Justin H. Park, Jason Faulkner & Mark Schaller, *Evolved Disease-Avoidance Processes and Contemporary Anti-Social Behavior: Prejudicial Attitudes and Avoidance of People with Physical Disabilities*, 27 J. NONVERBAL BEHAV. 65, 65–67 (2003). *See generally* Prado Silván-Ferrero, Patricia Recio, Fernando Molero & Encarnación Nouvilas-Pallejà, *Psychological Quality of Life in People with Physical Disability: The Effect of Internalized Stigma, Collective Action and Resilience*, 17 INT'L J. ENV'T RSCH. & PUB. HEALTH 1802 (2020) (describing the effects of the internalized stigma experienced by people with disabilities).

This reality holds true in health care, where hospitals, clinics, and medical equipment remain physically inaccessible.[186] All the participants in the focus group from the previous Section openly acknowledged that their facilities and equipment were inaccessible.[187] Thus, if legal mandates have not resulted in accessible in-person health care, it is not terribly surprising that they have not led to accessible virtual health care. While a full accounting of why antidiscrimination laws have failed people with disabilities is outside the scope of this Article,[188] the following sub-Sections offer some explanations.

i. Ignorance or Indifference to the Law

Ignorance or indifference to the law contributes to inaccessibility. First, individual physicians may not fully understand their legal obligations to patients with disabilities. One study, which consisted of in-depth interviews of twenty doctors across a variety of specialties, found that most of the participants had superficial or incorrect knowledge of the ADA.[189] Notably, physicians who attended medical school before the ADA passed and physicians who attended after reported the same level of ignorance about what the law requires.[190] This finding implies that medical school curriculum fails to educate future doctors about their legal obligations to patients with disabilities.[191] Similarly, participants in the focus group study indicated that they received little to no training on the ADA.[192] One specialist stated that they were aware of "conferences and lectures" on the topic but that "this is a personal choice if you want to take it or not."[193]

Another possibility is that physicians might have a sense of their obligations but choose to disregard them. One focus group participant stated that:

> I truthfully think the [ADA] makes the disabled person more of a target and doesn't help them but hurts them. Because a lot of us, me personally, are afraid to treat them . . . . You just don't want to deal with them, and that's what the [ADA] is all about.[194]

186. Lagu et al., *supra* note 143, at 1387 (attributing at least some of the health disparities faced by people with disabilities to inaccessible facilities).

187. *Id.* at 1389–90.

188. For a broader discussion of the ADA's shortcomings and a way forward, see generally Samuel R. Bagenstos, *Disability Rights and the Discourse of Justice*, 73 SMU L. REV. F. 26 (2020) (arguing that the ADA failed to meet its goals because its passing relied on discourse about costs and benefits, not discourse about social justice).

189. Nicole D. Agaronnik, Elizabeth Pendo, Eric G. Campbell, Julie Ressalam & Lisa I. Iezzoni, *Knowledge of Practicing Physicians About Their Legal Obligations When Caring for Patients with Disability*, 38 HEALTH AFFS. 545, 552 (2019).

190. *Id.* at 548.

191. *See id.* Only one of the twenty interviewees reported having disability training in medical school. *Id.*

192. Lagu et al., *supra* note 143, at 1392.

193. *Id.*

194. *Id.* at 1390.

Thus, some doctors might try to avoid treating patients with disabilities to bypass their legal obligations. Alternatively, they may know about the law but not believe compliance is worth it, given the small percentage of patients with disabilities in their practices.[195]

However, doctors' ignorance or indifference is at best a partial explanation. Recall that most physicians in the United States work for hospitals or other corporations. Surely, those entities have well-informed general counsel. Perhaps the lawyers in those offices are unaware of issues in digital accessibility[196] or are not involved in the purchasing of virtual health care products and services. Yet even if they are aware and involved, general counsel may still not be pushing providers to adopt accessible technology because, as explained below, the threat of liability is relatively low.

ii. Underenforcement

Litigation enforcing disability rights laws would quickly address both ignorance and voluntary noncompliance.[197] Given the prevalence of inaccessibility, both on- and offline, plaintiffs should have no shortage of opportunities to take providers to court. However, these laws frequently go underenforced.[198]

Most scholars attribute the underenforcement of disability rights statutes to their limited remedies.[199] In many accessibility cases, digital and otherwise,

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195. *Id.* at 1391–92.

196. Disability law is not a required class in law school. Thus, many lawyers graduate with no knowledge of these legal requirements.

197. *See* Bagenstos, *supra* note 149, at 8–9 (explaining that, if business owners believe, correctly or incorrectly, that the costs of accessibility do not justify its benefits, they will not remove barriers without a threat of liability).

198. *Id.* at 6 (describing Title III of the ADA as "massively underenforced"); *see also* Ruth Colker, *ADA Title III: A Fragile Compromise*, 21 BERKELEY J. EMP. & LAB. L. 377, 379 (2000); Elizabeth F. Emens, *Disability Admin: The Invisible Costs of Being Disabled*, 105 MINN. L. REV. 2329, 2371 (2021); Leslie Lee, Note, *Giving Disabled Testers Access to Federal Courts: Why Standing Doctrine Is Not the Right Solution to Abusive ADA Litigation*, 19 VA. J. SOC. POL'Y & L. 319, 340–42 (2011); Alex B. Long, *Reasonable Accommodation as Professional Responsibility, Reasonable Accommodation as Professionalism*, 47 U.C. DAVIS L. REV. 1753, 1804 (2014); Robyn M. Powell, Erin E. Andrews & Kara B. Ayers, *Becoming a Disabled Parent: Eliminating Access Barriers to Health Care Before, During, and After Pregnancy*, 96 TUL. L. REV. 369, 381 n.54 (2022); R. Cameron Saenz, Note, *Enforcing the ADA and Stopping Serial Litigants: How the Commercial Real Estate Industry Can Play This Key Role*, 6 TEX. A&M J. PROP. L. 607, 608 (2020); Michael Waterstone, *The Untold Story of the Rest of the Americans with Disabilities Act*, 58 VAND. L. REV. 1807, 1835 (2005).

Notably, Titles II and III are underenforced compared to Title I, the ADA's employment provision. *See* Ruth Colker, *The Americans with Disabilities Act: A Windfall for Defendants*, 34 HARV. C.R.–C.L. L. REV. 99, 100 n.7, 107 tbl.I (1999) (finding that 475 ADA Title I cases and 23 ADA Title III cases during the same six-year period); *see also* Waterstone, *supra*, at 1835 (stating that there have been "dramatically fewer Title II and III cases as compared to Title I").

199. *See* Bagenstos, *supra* note 149, at 6 (asserting that "[t]he ADA's public accommodations title is massively underenforced, and the limitations on remedies for violations of that title are the most likely culprit"); *see also* Colker, *supra* note 198, at 381; Lee, *supra* note 198, at 321, 341; Nicole Buonocore Porter, *Relieving (Most of) the Tension: A Review Essay of Samuel R. Bagenstos, Law and the Contradictions of the Disability Rights Movement*, 20 CORNELL J.L. & PUB. POL'Y 761, 789

plaintiffs are not entitled to monetary relief. Courts have interpreted Section 1557 to offer compensatory damages only in cases of intentional violations,[200] and even those remedies could be largely unavailable due to a recent Supreme Court decision.[201] Similarly, plaintiffs may also need to prove discriminatory intent to receive compensatory damages in lawsuits under Section 504 and Title II.[202] These intent requirements cast a long shadow because inaccessibility is often the result of ignorance or indifference, not animus.[203] And unfortunately for Title II plaintiffs, a substantial portion of those claims are against state actors,[204] who can assert sovereign immunity to avoid damages altogether.[205] Lastly, Title III offers plaintiffs no money damages at all, regardless of intent.[206]

Without the possibility of a payout, prospective plaintiffs and their attorneys may deem these claims not worth the effort or the expense. To start, lawsuits are costly and time-consuming, and people with disabilities frequently lack resources.[207] Thus, individuals with disabilities may be less able to invest in private enforcement. Moreover, the absence of damages means that they will not be compensated for their trouble.[208] Yet should someone decide that they

(2011). Ruth Colker has cited difficulty in filing class actions as alternative explanation. *See* Colker, *supra* note 198, at 379 n.19.

200. Section 1557 incorporates the remedies of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, or section 794 of Title 29. *See* 42 U.S.C. § 18116(a).

201. *See* Cummings v. Premier Rehab Keller, P.L.L.C., 596 U.S. 212, 229–30 (2022) (finding damages for emotional distress unavailable under Section 504 and Section 1557); *see also* Mary Anne Pazanowski, *SCOTUS Ruling Curtailing Bias Remedies Goes Beyond Health Care*, BLOOMBERG L. (Apr. 29, 2022, 10:11 AM), https://news.bloomberglaw.com/litigation/scotus-ruling-curtailing-bias-remedies-goes-beyond-health-care (on file with the *Iowa Law Review*).

202. *See* AM. L. REPS., AVAILABILITY OF DAMAGES UNDER § 504 OF REHABILITATION ACT (29 U.S.C.A. § 794) IN ACTIONS AGAINST PERSONS OR ENTITIES OTHER THAN FEDERAL GOVERNMENT OR AGENCIES THEREOF § 5 (1998) (describing how courts may require intent or deliberate indifferences to award damages in Section 504 cases); Waterstone, *supra* note 198, at 1863 (finding that most courts require Title II plaintiffs to demonstrate a discriminatory intent to receive compensatory damages).

203. *See supra* Section II.B.2.a.

204. Waterstone, *supra* note 198, at 1861–62 (finding that almost a third of the cases in Title II study were against state actors).

205. *But see* Tennessee v. Lane, 541 U.S. 509, 533 (2004) (holding that Congress effectively abrogated Eleventh Amendment sovereign immunity with respect to Title II, if the claim implicates a plaintiff's fundamental rights).

206. *See* 42 U.S.C. § 12188(a); 28 C.F.R. § 36.501 (stating that prevailing plaintiffs in Title III cases can receive injunctive relief and attorneys' fees).

207. Press Release, Nat'l Council on Disability, Highlighting Disability / Poverty Connection, NCD Urges Congress to Alter Federal Policies that Disadvantage People with Disabilities (Oct. 26, 2017), https://www.ncd.gov/2017/10/26/highlighting-disability-poverty-connection-ncd-urges-congress-to-alter-federal-policies-that-disadvantage-people-with-disabilities [https://perma.cc/J7HP-7ELK] (finding people with disabilities twice as likely to live in poverty). For a recent discussion of the costs of being disabled, see Emens, *supra* note 198, at 2371.

208. Even if they were compensated, that compensation would not reflect the true value of enforcement. *See* Bagenstos, *supra* note 149, at 9 (explaining that, because accessibility is a public good because and all subsequent users with similar disabilities will benefit, individual plaintiffs cannot personally reap all the benefits of their actions).

would like to sue, that person may have difficulty finding counsel willing to represent them. Even with the possibility of attorneys' fees,[209] few private lawyers find accessibility cases worth the effort because they would end up getting paid less,[210] or perhaps not at all.[211]

Further driving home this point, insofar as lawsuits exist, they tend to be in jurisdictions that offer generous remedies under state law.[212] And those cases are frequently brought by "testers" or "serial litigants," people with disabilities who act as professional plaintiffs, filing and settling multiple lawsuits at a time.[213] A relatively small but active subset of highly specialized lawyers and law firms serve these clients.[214] But when these cases settle, that money often goes to the plaintiff and their lawyer, not to removing the accessibility barriers.[215] The result is that many entities may remain inaccessible, even after being sued.[216] Relevant to this Article, inaccessible websites and apps have given testers even more opportunities to identify violations, but this time, from the comfort of their own homes.[217] In October 2023, the Supreme Court heard arguments in a case regarding whether testers have standing to sue for inaccessible websites when the plaintiff has no intention of actually

209. 29 U.S.C. § 794(a)(2) (showing that remedies for Section 504 are the same as in the Civil Rights Act of 1964); 42 U.S.C. § 2000e-5(g)(2)(B)(i) (showing that attorney's fees are available under the Civil Rights Act of 1964); 42 U.S.C. § 12205 (showing that attorney's fees are available under the ADA).

210. *See* Bagenstos, *supra* note 149, at 11 (noting that, due to how courts calculate attorneys' fees, "plaintiffs' lawyers in statutory fee cases, who get paid only for hours expended in cases they win, are paid for those hours at the same hourly rate as lawyers with fee-paying clients, who get paid for all of the hours they work, win or lose"). Lawyers will then rationally prefer to take fee-paying clients or to file cases where they can recover contingent fees. *Id.* at 13.

211. *Id.* at 11–12 (removing the accessibility barriers during litigation moots the case and the plaintiff's lawyer recovers no fees).

212. *See generally* Casey L. Raymond, Note, *A Growing Threat to the ADA: An Empirical Study of Mass Filings, Popular Backlash, and Potential Solutions Under Titles II and III*, 18 TEX. J. ON C.L. & C.R. 235 (2013) (finding large volumes of cases filed in California, Florida, and New York); *see also* Colker, *supra* note 198, at 400 (noting that "Title III may be effective, particularly when supplemental state actions are available"). For a table of the remedies available against public accommodations engaged in disability discrimination, see Colker, *supra* note 198, at 407 tbl.I.

213. Lee, *supra* note 198, at 321, 342–46.

214. *See* Bagenstos, *supra* note 149, at 12–15 (explaining that, once a lawyer learns the accessibility standards, specialization in this area can lead to significant economies of scale, as well as higher fees and greater success rates).

215. Lee, *supra* note 198, at 321, 343–44.

216. Unfortunately, serial litigation may be ineffective at achieving compliance. *See* Raymond, *supra* note 212, at 252–54 (explaining the issue in terms of optimal deterrence).

217. *See* Minh Vu, Kristina Launey & Susan Ryan, *ADA Title III Federal Lawsuit Filings Hit an All Time High*, SEYFARTH SHAW LLP (Feb. 17, 2022), https://www.adatitleiii.com/2022/02/ada-title-iii-federal-lawsuit-filings-hit-an-all-time-high [https://perma.cc/MHG4-NSFL] (showing the number of Title III lawsuits filed annually: 2,722 in 2013, 4,436 in 2014, 4,789 in 2015, 6,601 in 2016, 7,663 in 2017, 10,163 in 2018, 11,053 in 2019, 10,982 in 2020, 11,452 in 2021); *see also* Daniel Sorger, Note, *Writing the Access Code: Enforcing Commercial Web Accessibility Without Regulations Under Title III of the Americans with Disabilities Act*, 59 B.C. L. REV. 1121, 1140–44 (describing the trend toward serial litigation in digital accessibility cases).

patronizing the offending establishment.[218] However, the plaintiff dropped her suit before the Court decided the case, leading to a dismissal for mootness.[219]

Lastly, it is worth noting that, while plaintiffs bring the majority of disability rights claims, agencies may also enforce these laws.[220] In 2021, the DOJ settled with Rite Aid after suing the pharmacy because its online vaccine portal was inaccessible.[221] Some commentators proposed that the lawsuit indicated that the DOJ would increase its enforcement of the ADA online.[222] However, the agency did not file any digital accessibility cases in 2023.[223] Yet even if the DOJ prioritized this issue, agencies have limited resources and can only take a small number of cases.[224]

Because of this underenforcement, inaccessible virtual health care may well go unchallenged. Without lawsuits, providers (and their lawyers) who are unaware of their legal obligations to patients with disabilities will have no occasion to learn. And those with knowledge of the law may opt to roll the dice and hope that no one sues. Thus, even with multiple, overlapping disability rights laws and unequivocal agency interpretations, much inaccessibility—physical and digital, in and out of health care—remains untouched. Law- and policymakers may then want to adopt different strategies.

* * *

Accessible virtual health care could vastly improve the lives of people with disabilities, as well as generate other social benefits. Yet, despite these upsides, providers have not demanded accessible products and services from developers. From an economic perspective, this lack of demand is not terribly surprising. The value of accessible virtual health care may not be great enough to impact providers' bottom lines. Furthermore, negative attitudes toward

218. Acheson Hotels, LLC v. Laufer, 601 U.S. 1, 1 (2023). Standing is also an issue in physical accessibility claims. *See* Lee, *supra* note 198, at 329–32 (explaining that cases get thrown out because the plaintiff does not have a genuine intent to return and therefore has no threat of being injured in the future).

219. *Acheson Hotels*, 601 U.S. at 5 (vacating and remanding with instructions to dismiss as moot).

220. *See* U.S. DEP'T OF JUST. C.R. DIV., FY 2022 PERFORMANCE BUDGET 31 (2022), https://www.justice.gov/jmd/page/file/1398356/dl [https://perma.cc/C7WE-XV39] (showing that the DOJ enforces the ADA and Section 504); *Section 1557 Final Rule: Frequently Asked Questions*, U.S. DEP'T HEALTH & HUM. SERVS. (May 20, 2024), https://www.hhs.gov/civil-rights/for-individuals/section-1557/1557faqs/index.html [https://perma.cc/7NC2-G8HG] (describing the administrative enforcement of Section 1557).

221. *Department of Justice Settlement with Rite Aid Corporation Signals New Wave of ADA Website Accessibility Litigation*, PR NEWSWIRE (Dec. 1, 2021, 9:21 AM), https://www.prnewswire.com/news-releases/department-of-justice-settlement-with-rite-aid-corporation-signals-new-wave-of-ada-website-accessibility-litigation-301429229.html [https://perma.cc/Y7WR-YQSL].

222. *Id.*

223. The DOJ posts its recent disability-related cases on https://www.justice.gov/crt/disability-rights-cases. The Author checked that website on January 17, 2024 and found no complaints related to digital accessibility.

224. *See* Bagenstos, *supra* note 149, at 9 (stating that, due to limited resources, the "government cannot be counted on to fill the gap" in Title III enforcement).

patients with disabilities may lead providers to deprioritize the needs of that population. However, several federal antidiscrimination statutes apply to health care, requiring providers to offer accessible, nondiscriminatory health care. Since those obligations may extend online, one would expect them to create a demand for accessible virtual health care technologies. However, perhaps due to ignorance, indifference, and underenforcement, that has not been the case. The following Part turns to ways that law- and policymakers might encourage accessible design in this area using both antidiscrimination law and other tools of innovation policy.

III. ENCOURAGING ACCESSIBLE INNOVATION

To sum up so far, inaccessible virtual health care represents an innovation failure. Regardless of the benefits, health care providers are not demanding accessibility in the products and services that they purchase. Often the solution to this type of problem involves using law or policy to create the necessary incentives to facilitate the desired outcome. Yet the puzzle for inaccessible virtual health care is that legal interventions already exist. Since current protections have failed, law- and policymakers interested in improving accessibility in virtual health care must think outside the box.

Several options exist for reform. First, law- and policymakers could extend antidiscrimination protections to developers. In fact, both scholars and legislators have considered iterations of this approach. Second, they could strengthen the existing accessibility-related laws and regulations to encourage compliance. Unfortunately, whether expanding coverage or increasing enforcement, conservative law- and policymakers may react to strengthening antidiscrimination laws with disdain, making congressional action unlikely. Alternatively, law- and policymakers could adopt other tools of innovation policy to inspire developers to design accessibly. These include supply-side incentives, demand-side incentives (apart from antidiscrimination law), and even innovation sticks. Some of these options offer promising alternatives to antidiscrimination law that could unite both sides of the aisle. For liberals, investing in accessible virtual health care means promoting equity and inclusion. For conservatives, it represents partnering with the private sector to create technology that reduces costs and generates profits. Framed this way, accessible virtual health care can be a win for everyone.

A. ANTIDISCRIMINATION LAW

Despite their underenforcement, antidiscrimination laws, like the ADA and Section 1557, have traditionally been the legal tools for increasing access. Thus, law- and policymakers may consider expanding or strengthening those laws and regulations to address digital inaccessibility.

1. Expanding Coverage to Developers

Although providers have clear obligations to make their practices accessible to patients with disabilities, what the law requires of developers is far less clear. To start, many developers are private companies that do not accept federal

funding, making them outside the scope of Section 504, Section 1557, and Title II of the ADA. Title III—the provision of the ADA that applies to public accommodations—requires businesses to ensure that people with disabilities have full and equal enjoyment of their goods and services.[225] Thus, it might seem that, by designing inaccessible technologies, developers are discriminating against users with disabilities. Yet the extent to which Title III applies to third-party developers or to what they sell remains unclear.

First, recall that the developers discussed in this Article sell their technologies to providers, not patients. Title III's list of covered entities includes only businesses that sell products and services to the end users.[226] Given how courts have interpreted standing under Title III,[227] plaintiffs must be the defendants' customers.[228] Thus, while Title III could apply to developers that sell directly to consumers with disabilities, it does not reach third-party developers. A patient could, of course, sue their provider using one of the provisions described in Part II. However, they probably could not likewise sue the developer who created the inaccessible technology.

Second, under its current interpretation, Title III does not require businesses to offer products and services that are equally useful for everyone. Covered entities must only give people with disabilities the same opportunity to buy things as afforded to customers without disabilities.[229] Bagenstos has called this characteristic of disability rights law the "access/content distinction."[230] Although the law requires that people with disabilities have access to products and services, it does not entitle them to request different content, regardless of whether they derive less relative value from what is being sold. For example, the Seventh Circuit famously held that an insurance company did not discriminate against people with HIV/AIDS by capping coverage for that condition.[231] Customers with and without HIV/AIDS had access to the same set of products, health insurance plans with HIV/AIDS

225. 42 U.S.C. § 12182(a).

226. 42 U.S.C. § 12181(7).

227. *See* sources cited *supra* note 218.

228. Title III does not explicitly require plaintiffs to be the defendants' customers. However, litigants have argued that their status as consumers (as opposed to employees, independent contractors, or businesses) gives them standing. *See* PGA Tour, Inc. v. Martin, 532 U.S. 661, 678–79 (2001) (explaining petitioner's argument and tracking with the dissenting opinion by Justice Scalia); Molski v. M.J. Cable, Inc., 481 F.3d 724, 732–33 (9th Cir. 2007) (discussing the defense's argument).

229. In an early ADA case, Judge Posner opined:

> The common sense of the statute is that the content of the goods or services offered by a place of public accommodation is not regulated. A camera store may not refuse to sell cameras to a disabled person, but it is not required to stock cameras specially designed for such persons.

Doe v. Mut. of Omaha Ins. Co., 179 F.3d 557, 560 (7th Cir. 1999).

230. SAMUEL R. BAGENSTOS, LAW AND THE CONTRADICTIONS OF THE DISABILITY RIGHTS MOVEMENT 69–72 (2009).

231. *See Doe*, 179 F.3d at 563–64 (holding that a provider does not discriminate by limiting the content of their goods).

caps. In other words, it is perfectly legal to sell products and services that don't offer people with disabilities a comparable benefit.

And finally, the extent to which Title III applies to websites and apps at all has been a major source of debate. The statute itself is silent on this question,[232] and the DOJ has not offered any formal guidance,[233] leaving courts to decide this issue on largely their own. Unfortunately, there has not been a clear consensus regarding the extent to which Title III, which refers to "*place*[*s*] of public accommodation,"[234] applies online. At present, there is effectively a three-way circuit split. Some circuits have held that "a place of public accommodation" must be an actual, brick-and-mortar structure.[235] Some have explicitly rejected that interpretation.[236] And two circuits fall

232. *See* Annaswamy et al., *supra* note 17, at 2; *see also Americans with Disabilities Act: Sixteen Years Later: Hearing Before the Subcomm. on the Const. of the H. Comm. on the Judiciary*, 109th Cong. 14 (2006) (statement of the Honorable Tony Coelho, Chair, Epilepsy Found.); *id.* at 924 (prepared statement of Day Al-Mohamed, Director of Advoc. & Governmental Affs., Am. Council of the Blind); Smith & Inazu, *supra* note 10, at 721–22 & nn.9–11 (collecting the cases and scholarly articles exploring this issue in the early 2000s); Areheart & Stein, *supra* note 94, at 468–69 (citing Lawrence Lessig, *The Death of Cyberspace*, 57 WASH. & LEE L. REV. 337, 337 (2000)); Richard E. Moberly, *The Americans with Disabilities Act in Cyberspace: Applying the "Nexus" Approach to Private Internet Websites*, 55 MERCER L. REV. 963, 979 (2004); Michael O. Finnigan, Jr., Brian C. Griffith & Heather M. Lutz, *Accommodating Cyberspace: Application of the Americans with Disabilities Act to the Internet*, 75 U. CIN. L. REV. 1795, 1817–23 (2007).

233. Despite its longstanding informal position that both Titles II and III of ADA apply online, see *Guidance on Web Accessibility and the ADA*, ADA.GOV (Mar. 18, 2022), https://www.ada.gov/resources/web-guidance [https://perma.cc/G3XJ-D498], the DOJ has not yet taken formal action on digital accessibility in public accommodations. It has, however, recently issued a final rule on digital accessibility for state and local government entities. *See* Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities and Public Accommodations, 89 Fed. Reg. 31320 (codified at 28 C.F.R. pt. 35).

234. 42 U.S.C. § 12182(a) (emphasis added).

235. *See* Andrews v. Blick Art Materials, LLC, 268 F. Supp. 3d 381, 388 (E.D.N.Y. 2017) (explaining that in the Third, Sixth, Ninth, and Eleventh Circuits "the only goods and services" people with disabilities have "a 'full and equal' right to enjoy" are those offered at a physical location); *see also* Gil v. Winn-Dixie Stores, Inc., 993 F.3d 1266, 1277 (11th Cir. 2021), *vacated on reh'g*, 21 F.4th 775 (11th Cir. 2021) (concluding "public accommodations are limited to actual, physical places"). Yet most of the key cases dealt with whether an insurance plan was a place of public accommodation—not a website or mobile application.

236. *See* Carparts Distrib. Ctr., Inc. v. Auto. Wholesaler's Ass'n of New Eng., Inc., 37 F.3d 12, 19 (1st Cir. 1994) (holding that "place of public accommodation" under Title III "is not limited to actual physical structures"); Doe v. Mut. of Omaha Ins. Co., 179 F.3d 557, 559 (7th Cir. 1999) (finding that Title III requires "that the owner or operator of a store, hotel, restaurant, dentist's office, travel agency, theater, Web site [sic], or other facility (whether in physical space or in electronic space) . . . that is open to the public cannot exclude disabled persons"); *see also* Morgan v. Joint Admin. Bd., 268 F.3d 456, 459 (7th Cir. 2001) (refusing to interpret "public accommodation" literally, so as to require "a physical site"). Again, the leading cases dealt with insurance, not web-based or mobile technology. Nevertheless, plaintiffs at the district court level in these jurisdictions have successfully argued that websites and apps must be accessible. *See, e.g.*, Nat'l Ass'n of the Deaf v. Netflix, Inc., 869 F. Supp. 2d 196, 201–02 (D. Mass. 2012).

somewhere in the middle, requiring a connection between the virtual products or services and the products or services offered in physical locations.[237]

Given these gaps and ambiguities, both academics and legislators have advocated imposing clear accessibility obligations directly on developers. These proposals, which frequently take the form of amending existing statutes, have sought to improve digital accessibility in- and outside health care. For example, Thiru Annaswamy, Monica Verduzco-Gutierrez, and Lex Frieden assert that "[t]echnology companies that design and distribute telemedicine products must be subject to [Section 504 and Section 1557], by considering them and their products as health care—not technological—organizations and products."[238] Beyond health care, Johanna Smith and John Inazu suggest targeting design services, communication platforms, and online mediators because those entities are best positioned to bear the costs of accessible design and to generate impactful solutions.[239] And Blake Reid advocates applying disability rights laws to the "application layer" of technology development, which encompasses the technology responsible for delivering content to users, including email, videoconferencing, and messaging software.[240]

Legislative proposals have also focused on extending accessibility obligations to developers. For example, the Medical Device Nonvisual Accessibility Act, proposed in 2021 and then reintroduced in 2023 by Representative Janice Schakowsly, would have amended the Federal Food, Drug, and Cosmetic Act to require certain types of medical devices that rely on digital interfaces to be accessible to users with vision disabilities.[241] The bill specifically mentioned inaccessible remote patient monitoring technologies.[242] Its findings stated that "[m]edical devices designed for use in the home are being increasingly utilized to lessen the cost of inpatient care for consumers," and "[d]evices such as blood pressure monitors, sleep apnea machines, and in-home chemotherapy treatments generally lack nonvisual accessibility."[243] The law would have required the companies that produce moderate and high-risk medical devices to comply with new digital accessibility standards.[244]

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237. *Compare* Robles v. Domino's Pizza, LLC, 913 F.3d 898, 905 (9th Cir. 2019) (citing 42 U.S.C. § 12181(7)(B)) (adopting the nexus test), *with Winn-Dixie Stores, Inc.*, 993 F.3d at 1281 (rejecting the nexus test and adopting the intangible barriers test).

238. Annaswamy et al., *supra* note 17, at 2.

239. Smith & Inazu, *supra* note 10, at 774–80.

240. Blake E. Reid, *Internet Architecture and Disability*, 95 IND. L.J. 591, 612 (2020).

241. Medical Device Nonvisual Accessibility Act of 2021, H.R. 4853, 117th Cong. (2021); Medical Device Nonvisual Accessibility Act of 2023, H.R. 1328, 118th Cong. (2023); Medical Device Nonvisual Accessibility Act of 2024, S. 3621, 118th Cong. (2024) (introduced by Sen. Hassan); Press Release, Jan Schakowsky, Schakowsky Reintroduces Legislation to Guarantee Home-Use Medical Devices Are Accessible to Blind and Low Vision Americans (Mar. 1, 2023), https://schakowsky.house.gov/media/press-releases/schakowsky-reintroduces-legislation-guarantee-home-use-medical-devices-are [https://perma.cc/J6UK-YUFP].

242. H.R. 4853.

243. *Id.*

244. *Id.*

2. Increasing Enforcement

However, for antidiscrimination laws to generate accessible technology, someone must enforce them. Part II demonstrates that many of these protections go un- or underused, despite widespread physical and digital inaccessibility. Whether drafting new legislation or amending existing provisions, governments will need to invest in enforcement at either the federal or state levels.

Insofar as noncompliance results from ignorance, the solution could simply be better education. Recall from Part II that many physicians are unaware of their legal obligations to patients with disabilities. And the lack of demand even from large hospital systems implies that general counsels are either similarly uninformed or not involved in purchasing technology. Thus, one strategy would be to educate the people who buy virtual health care products and services that the law requires them to shop for accessibility. This education could include some combination of teaching accessibility requirements and cultural competence toward people with disabilities to medical professionals,[245] encouraging law students to learn disability rights law, or simply HR training for the employees who are responsible for purchasing virtual health care products and services. However, given that the threat of litigation is quite low, providers may not invest in educating their employees. Thus, the solution may be to increase the stakes of noncompliance. Specifically, Congress could raise the damages available to plaintiffs in federal digital accessibility cases or allocate funding for more aggressive agency enforcement.

i. Increasing Private Enforcement

Lawmakers are currently considering more generous damages for disability-rights plaintiffs. Representative John Sarbanes and Senator Tammy Duckworth introduced the Websites and Software Applications Accessibility Act, in September 2023.[246] The bill would create—and vigorously enforce—uniform digital accessibility standards for the entities covered by the ADA, including health care providers.[247] In addition to injunctive relief, litigants would also have access to compensatory and punitive damages.[248] The availability of monetary relief could make potential plaintiffs more willing to sue, as well as make lawyers more interested in taking these cases. If plaintiffs receive hefty damages or settlements, those outcomes would increase the incentive for providers to comply with the law.

245. For a discussion of cultural competence, see *supra* note 144.

246. Websites and Software Applications Accessibility Act of 2023, H.R. 5813, 118th Cong. (2023); *see also* Websites and Software Applications Accessibility Act of 2023, S. 2984, 118th Cong. (2023) (stating that the goal of the legislation is "[t]o establish uniform accessibility standards for websites and applications of employers, employment agencies, labor organizations, joint labor-management committees, public entities, public accommodations, testing entities, and commercial providers, and for other purposes").

247. H.R. 5813; S. 2984.

248. H.R. 5813; S. 2984.

ii. Increasing Agency Enforcement

With respect to agencies, underenforcement is most likely due to a lack of resources. Law- and policymakers who would like to increase enforcement could then allocate more resources for pursuing those actions. When Congress sought to improve HIPAA compliance, it increased HHS's funding to enforce the law. Congress could likewise increase the resources for pursuing digital accessibility claims. Notably, the Sarbanes–Duckworth bill earmarks funding for both private and administrative enforcement.[249]

In addition to HHS and DOJ, the Centers for Medicare and Medicaid Services ("CMS") could also enforce digital accessibility rules. When providers accept those funds, they agree to comply with federal law, which includes Section 1557 and Section 504.[250] Because people with disabilities require accessible technologies, relying on inaccessible products and services could deny those patients medically necessary health care.[251] CMS would then be within its authority to defund providers that use inaccessible technology. But again, the issue is with enforcement. In reality, the agency only rarely claws back funding or denies reimbursement and has never done so to enforce civil rights.[252] CMS has been more active with its enforcement in other areas, such as "never events" and readmissions within thirty days.[253] In those instances, the care is both costly and low quality. If digital inaccessibility reduces the quality of care and wastes government resources, CMS could likewise take an interest in this area, apart from the potential antidiscrimination violations.

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249. The bill also included provisions on rulemaking, creating a standing advisory committee and providing technical assistance. *See* H.R. 5813; S. 2984.

250. *Are You Ready for Nondiscrimination and LEP Posting Requirements?*, HEALTH COMPLIANCE PROS, https://www.healthcarecompliancepros.com/blog/are-you-ready-for-nondiscrimination-and-lep-posting-requirements [https://perma.cc/BJJ5-EDF4] ("While the final rule applies only to HHS and the health programs and activities it funds, the Section 1557 statute applies more broadly to health programs and activities that receive financial assistance from any Federal department or agency.").

251. For Medicare purposes, medically necessary means "[s]ervices or supplies that meet accepted standards of medical practice to diagnose or treat your medical condition." *What Part B Covers*, MEDICARE.GOV, https://www.medicare.gov/providers-services/original-medicare/part-b [https://perma.cc/JQZ9-X7PS]. States may have their own definitions of medical necessity for Medicaid purposes. *State Definitions of Medical Necessity Under the Medicaid EPSDT Benefit*, NAT'L ACAD. FOR STATE HEALTH POL'Y (Apr. 23, 2021), https://nashp.org/state-tracker/state-definitions-of-medical-necessity-under-the-medicaid-epsdt-benefit [https://perma.cc/83TQ-KYDF].

252. *See* David Kwok, *Controlling Excessive Off-Label Medicare Drug Costs Through the False Claims Act*, 27 HEALTH MATRIX 185, 213 (2017) (showing that CMS is unmotivated to conduct audits necessary to carry out claw backs or deny reimbursement).

253. *Never Events*, PSNET (Sept. 7, 2019), https://psnet.ahrq.gov/primer/never-events [https://perma.cc/22WE-B4R9] ("The Centers for Medicare and Medicaid Services (CMS) announced in August 2007 that Medicare would no longer pay for additional costs associated with many preventable errors, including those considered Never Event. . . . Since February 2009, CMS has not paid for any costs associated with wrong-site surgeries."); *Hospital Readmissions Reduction Program (HRRP)*, CMS.GOV (Sept. 6, 2023, 4:51 PM), https://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/value-based-programs/hrrp/hospital-readmission-reduction-program [https://perma.cc/W6EZ-KNBG] (showing that CMS readjusts payments when patients are readmitted "within 30 days of discharge").

Moreover, patients with disabilities depend on both Medicare and Medicaid,[254] making CMS a powerful stakeholder. Although this approach would only reach providers who accept federal insurance dollars, private insurers often follow the government's lead when designing their policies.[255] But even if the private health insurance industry did not follow suit, practically all large hospital systems accept Medicare,[256] and their compliance could be enough to substantially improve digital accessibility.

iii. Leading by Example

It is also worth noting that strategic enforcement by either litigants or agencies could have an industry-wide impact. Consider the role that large-scale scandals had on corporate compliance. In the 1960s, when judges fined companies millions of dollars and sent several executives to jail, businesses throughout the United States instituted their own corporate antitrust compliance programs.[257] Thus, a relatively small amount of enforcement had far-reaching implications. Of course, no one would go to jail for inaccessible virtual health care, but increasing the price of noncompliance and targeting large hospital systems with deep pockets could encourage other providers to take digital accessibility requirements more seriously. Thus, agencies and litigants may not need to police every single provider. Going after a few, high-profile defendants for large sums could inspire compliance all the way down the line.

B. INNOVATION POLICY

Although antidiscrimination law has been the primary mechanism for increasing accessibility, innovation policy offers additional strategies for reform, including (1) supply-side incentives, (2) demand-side incentives (distinct from run-of-the-mill antidiscrimination law), and (3) innovation sticks.

254. Kennedy et al., *supra* note 1, at 4 ("Those with disabilities are much more likely to rely on Medicaid (37.7% vs 10.0%), Medicare (27.1% vs 0.5%), or military benefits (6.0% vs 2.3%), and less likely to have private insurance coverage than their nondisabled counterparts (36.1% vs 73.1%). Notably, if working-age adults with disabilities were privately insured, they were more likely to report purchasing their coverage in a state marketplace (11.8% vs 6.6%).").

255. *See generally* Jeffrey Clemens & Joshua D. Gottlieb, *In the Shadow of a Giant: Medicare's Influence on Private Physician Payments*, 125 J. POL. ECON. 1 (2017) (documenting Medicare's influence with respect to payment structures).

256. *See Fact Sheet: Majority of Hospital Payments Dependent on Medicare or Medicaid*, AM. HOSP. ASS'N (May 6, 2024), https://www.aha.org/fact-sheets/2022-05-25-fact-sheet-majority-hospital-payments-dependent-medicare-or-medicaid [https://perma.cc/3WWD-W4ZH].

257. Todd Haugh, *The Criminalization of Compliance*, 92 NOTRE DAME L. REV. 1215, 1225–26 (2017). However, the extent to which anticorruption laws have actually worked in the United States may be up for debate. *See generally* Miriam Hechler Baer, *Governing Corporate Compliance*, 50 B.C. L. REV. 949, 965 (2009) (questioning whether the corporate compliance industry has affected meaningful change).

1. Supply-Side Incentives

One class of interventions is what Buccafusco calls supply-side incentives. Supply-side incentives are the traditional tools of innovation policy.[258] They compensate innovators for their trouble by offsetting some of the associated costs.[259] Thus, the target of these incentives would be developers, not providers. Examples include patents, grants, prizes, and tax incentives.[260] Given that patents are already available but have not spurred accessible innovation,[261] law- and policymakers should focus on other supply-side incentives. Grants, prizes, and tax incentives could all encourage developers to design accessible virtual health care technology.

i. Grants

The federal government currently offers grants for entrepreneurs with disabilities[262] and for technology start-ups.[263] Grants are distinctive as innovation incentives because, unlike patents and prizes, they fund innovation, opposed to rewarding successful innovators after the fact.[264] Grants give potential innovators capital to invest in creating their desired products and services. In addition to the existing incentive programs, Congress or agencies could create a program that funds developers committed to serving people with disabilities to help offset some of the initial costs of accessible design. Notably, the Sarbanes–Duckworth bill described in the previous Section designates funding for government contracts or grants to support "development, establishment, and procurement of accessible websites and applications."[265] While the bill

258. Buccafusco, *supra* note 105, at 954.

259. *See* Daniel J. Hemel & Lisa Larrimore Ouellette, *Beyond the Patents–Prizes Debate*, 92 TEX. L. REV. 303, 304–23 (2013); *see also* Buccafusco, *supra* note 105, at 962–63.

260. *See* Hemel & Ouellette, *supra* note 259, at 304–23; Buccafusco, *supra* note 105, at 962–63.

261. Patents grant market exclusivity, so if the underlying market seems small or unprofitable, the patent will not provide an incentive. *See* Buccafusco, *supra* note 105, at 1006–07. Perhaps, developers do not believe the value of the patent is worth the time and resources necessary for designing accessibly. Notably, Electronic Arts, a videogame company, had patents on certain accessibility-related technology that it currently offers to the game-development community royalty-free "to make sure that gaming is inclusive for everyone." *Our Patent Pledge for Increasing Accessibility*, ELEC. ARTS (Dec. 2, 2023), https://www.ea.com/commitments/positive-play/accessibility-patent-pledge [https://perma.cc/C2D4-5CTG].

262. *Self-Employment & Entrepreneurship*, U.S. DEP'T LAB., OFF. DISABILITY EMP. POL'Y, https://www.dol.gov/agencies/odep/program-areas/employers/self-employment-entrepreneurship [https://perma.cc/L52V-3JUU]; Janet Gershen-Siegel, *The Best Funding Resources for Entrepreneurs with Disabilities*, ENTREPRENEUR (July 1, 2024), https://www.entrepreneur.com/article/344596 [https://perma.cc/7CRU-4CJD].

263. Small Business Innovation Research ("SBIR") and Small Business Technology Transfer ("STTR") programs. *About SBIR and STTR*, AM.'S SEED FUND: SBIR–STTR, https://www.sbir.gov/about [https://perma.cc/X6VK-NJ4R].

264. Hemel & Ouellette, *supra* note 259, at 327; *see also* Natalie Ram, *Innovating Criminal Justice*, 112 NW. U. L. REV. 659, 708 (2018).

265. Websites and Software Applications Accessibility Act, H.R. 9021, 117th Cong. § 9(b) (2022); *see also* Websites and Software Applications Accessibility Act, S. 4998, 117th Cong. (2022) (creating grants to further develop equal access technology).

would support accessible innovation generally, law- and policymakers could also establish programs that specifically target developers interested in designing health technology.

ii. Prizes

Prizes offer another strategy.[266] In 2020, the Department of Transportation ("DOT") created the Inclusive Design Challenge.[267] DOT asked competitors to create "innovative design solutions to enable people with physical, sensory, and cognitive disabilities to use automated driving systems . . . to access jobs, healthcare, and other critical destinations."[268] Semifinalists and winners won a total of five million dollars in prizes over the course of the competition.[269]

More recently, the General Services Administration ("GSA") instituted a design challenge called "Access for All": Universal Design in Federal Facilities.[270] The agency "invite[d] students in architectur[al] and design programs to apply universal design ideas to reimagine a federal workspace that provides an accessible, barrier-free, and all-inclusive experience."[271] GSA encouraged entrants to consider accessibility and inclusivity in the design of bathrooms, food service and eating areas, secure entrances, signage and pathways, and conference rooms and other communal workspaces.[272] However, the prizes in this competition were far more modest. Winners received $2,000 for first place, $1,500 for second place, and $1,000 for third place.[273]

While these two challenges focused on physical accessibility, HHS could fund a similar initiative for designing accessible virtual health care technologies. Teams of developers could submit proposals and create prototypes for cash prizes. Criteria for winning would include compliance with digital accessibility rules, usability, and other relevant factors, such as the potential to impact health care delivery.

iii. Tax Incentives

Finally, the federal government could encourage innovation through tax incentives. Options include either "expensing" certain kinds of research and

266. Prizes, as used in the innovation policy literature, typically denote a contest with a specific outcome in mind, such as an astronaut glove or an LED light bulb. *See* Hemel & Ouellette, *supra* note 259, at 317–19. Thus, the Inclusive Design Challenge is not a traditional prize because, instead of rewarding a particular innovation, the objective of the contest is developing technologies that remove access barriers in transportation.

267. Innovators from a variety of backgrounds formed design teams and competed in two different stages: a proof-of-concept stage and a prototype/demonstration stage. *Inclusive Design Challenge*, U.S. DEP'T TRANSP., https://www.transportation.gov/accessibility/inclusivedesign [https://perma.cc/RWJ6-NTC7].

268. *Id.*

269. *Id.*

270. *"Access for All" Universal Design in Federal Facilities*, CHALLENGE.GOV, https://www.challenge.gov/?challenge=access-for-all [https://perma.cc/PE8X-8UQS].

271. *Id.*

272. *Id.*

273. *Id.*

development costs by deducting them over comparatively shorter periods of time[274] or by offering tax credits for specific types of research expenses.[275] These strategies encourage innovators to spend more on research and development by giving innovation favorable tax status.[276] And while health tech companies stand to benefit from these kinds of incentives, they are not industry specific.

Notably, the federal government has already adopted certain tax incentives to improve accessibility in the physical world. A tax credit exists to help small businesses meet their obligations under Title III of the ADA.[277] Eligible expenditures include providing readers for customers with vision disabilities, providing sign language interpreters, purchasing adaptive equipment, producing accessible materials, removing architectural barriers, and consulting fees.[278] Additionally, businesses of any size may deduct certain expenses associated with removing architectural and transportation barriers.[279] Thus, tax incentives to promote innovation and accessibility are already in the government's policy toolkit.

2. Demand-Side Incentives

As explained in Part II, Buccafusco frames disability rights law as a demand-side innovation incentive because it creates markets for assistive devices and accessible products and services. However, antidiscrimination law is but one type of demand-side incentive. Law- and policymakers could also use administrative carrots and sticks or health insurance reform to generate demand from providers.

i. Administrative Carrots and Sticks

The federal government has already used administrative action to incentivize health care providers to adopt certain technology. The HITECH Act included both carrots and sticks encouraging providers to adopt HIPAA-compliant EHRs. First, it offered financial rewards for taking patient files online.[280] Providers who showed "meaningful use" of EHRs were eligible for fairly substantial payments.[281] Second, the law adopted steeper penalties

274. 26 U.S.C. § 174; *see* Hemel & Ouellette, *supra* note 259, at 322–23, 345; Ram, *supra* note 264, at 712. Notably, section 174 is not as generous as it once was. Prior to 2022, taxpayers could deduct the entire amount in a single tax year. CHANGES IN ACCOUNTING PERIODS AND IN METHODS OF ACCOUNTING, IRS 2–4 (2023), https://www.irs.gov/pub/irs-drop/rp-23-08.pdf [https://perma.cc/JMF7-MRNB].

275. Hemel & Ouellette, *supra* note 259, at 323–24; *see* Ram, *supra* note 264, at 712.

276. Hemel & Ouellette, *supra* note 259, at 324.

277. *See* 26 U.S.C. § 44.

278. ADAPTIVE ENV'TS CTR., INC., FACT SHEET 4: TAX INCENTIVES FOR IMPROVING ACCESSIBILITY 2 (1992), https://archive.ada.gov/archive/taxpack.pdf [https://perma.cc/8FSP-46VR].

279. 26 U.S.C. § 190.

280. Alder, *supra* note 118.

281. N. Anumula & P.C. Sanelli, *Meaningful Use*, 33 AM. J. NEURORADIOLOGY 1455, 1455 (2012). Some hospitals are excluded from the incentive program. For instance, psychiatric, long-

for HIPAA violations and, as noted, expanded funding to HHS for enforcement.[282] These measures seem to have been quite effective.

Before the law, less than ten percent of hospitals had moved to EHRs because they were prohibitively expensive.[283] By offsetting some of the costs of going digital, the HITECH Act motivated healthcare providers to use new technology.[284] Now more than eighty percent of hospitals use some form of EHR.[285] While some studies have shown that providers were already investing in EHRs before the HITECH Act,[286] commentators nonetheless believe that the law's incentives sped up adoption of these technologies.[287] Regardless, we now have a robust market for HIPAA-complaint EHR software and services.

Law- and policymakers can take a lesson from this success story. The carrots and sticks both functioned as demand-side incentives for HIPAA-compliant EHR technology. The carrots rewarded providers for the effort it took to move to EHRs, while the sticks raised the stakes for failing to sufficiently safeguard patient data. The result was that providers wanted private, secure EHR technology and badly. Once the demand existed, developers responded enthusiastically with a variety of products and services.

One could imagine a similar regime for digital accessibility. Similar to the HITECH Act, it could include both a tiered compensation system (with increasing obligations and diminishing payouts) and heightened penalties for failing to meet federally set digital accessibility standards. Incentives are a crucial aspect of this strategy. Like the move to HIPAA-compliant EHRs, adopting accessible technologies will come with costs.[288] As a general matter, providers would like financial help in making their practices accessible.[289] Payments could offset the expense of purchasing accessible technology, which

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term care, and rehabilitation hospitals. *See* 42 C.F.R. § 412.23. After updates in 2017, eligible professionals and entities are now subject to a "meaningful use" penalty. *Meaningful Use: Electronic Health Record (EHR) Incentive Programs*, AM. MED. ASS'N, https://www.ama-assn.org/practice-management/medicare-medicaid/meaningful-use-electronic-health-record-ehr-incentive [https://perma.cc/XGP2-538M].

282. Alder, *supra* note 118.

283. *See* Julia Adler-Milstein & Ashish K. Jha, *HITECH Act Drove Large Gains in Hospital Electronic Health Record Adoption*, 36 HEALTH AFFS. 1416, 1420 (2017).

284. *See id.*

285. A Jay Holmgren, Jessica Phelan, Ashish K. Jha & Julia Adler-Milstein, *Hospital Organizational Strategies Associated with Advanced EHR Adoption*, 57 HEALTH SERVS. RSCH. 259, 260 (2022). The term Electronic Health Record ("EHR") is synonymous with EHRs. *See id.*

286. Christopher Jason, *New Data Shows Heavy EHR Adoption Investment Prior to HITECH Act*, TECHTARGET (July 1, 2020), https://ehrintelligence.com/news/new-data-shows-heavy-ehr-adoption-investment-prior-to-hitech-act (on file with the *Iowa Law Review*).

287. Adler-Milstein & Jha, *supra* note 283, at 1421 ("[F]inancial incentives tied to technology adoption are likely to substantially speed uptake across a range of hospital types."). *But see* Jason, *supra* note 286.

288. *See* Valdez et al., *supra* note 17, at 390 (identifying the potential need for training or additional personnel).

289. *See* Agaronnik et al., *supra* note 189, at 551 (explaining the desire for financial support in complying with the ADA's physical accessibility requirements).

may initially come with an accessibility premium.[290] At the same time, higher penalties increase the costs of noncompliance, ensuring that providers take the accessibility requirement seriously and purchase carefully. As providers begin to shop for accessible products and services, developers should innovate to respond to that demand.

ii. Health Insurance Reform

Another possibility for raising the demand for accessible virtual health care would be through health insurance reform. Recall that insurers, not patients, pay most of the health care costs in the United States. Not surprisingly then, increasing coverage leads to greater use.[291] Law- and policymakers could therefore offer more coverage or greater reimbursement rates for using accessible technology. For example, Daniel J. Hemel and Lisa Larrimore Ouellette argue that tying Medicaid and Medicare reimbursement rates to social value instead of private-sector prices would increase pharmaceutical innovation.[292] Regulators could also adopt value-based reimbursement for virtual health care. Imagine that a doctor wishes to send a patient home with a remote monitoring device. Instead of reimbursing at the market rate, Medicare and Medicaid would instead reimburse based on the device's relative social value. The government could then ensure that those reimbursement rates account for accessibility. In other words, it could reimburse at higher rates if the innovation meets certain accessibility standards.

Alternatively, states could subsidize accessible virtual health by covering some—or even all the costs—of those services. Imagine that a state offers to split the costs of accessible health care services with insurers by paying half. Under such a policy, the insurer would be responsible for the full amount of a covered video appointment done on an inaccessible platform, but only half the amount of that same appointment, if the provider uses accessible videoconferencing software. Insurers, who will want to enjoy the cost savings associated with accessibility, would in turn adopt policies to encourage providers to use accessible tools and providers would respond by demanding accessible products and services from developers.

3. Innovation Sticks

In addition to incentives, regulators could employ innovation sticks to spur accessible design. Ian Ayres and Amy Kapczynski argue that punishing the creators of technology for failing to meet certain standards promotes innovation.[293] In the case of fuel efficiency, automotive markets grossly

290. For a discussion of accessibility premiums, see *supra* notes 153–54.

291. *See* Stefan Boes & Michael Gerfin, *Does Full Insurance Increase the Demand for Health Care?*, 25 HEALTH ECON. 1483, 1490–91, 1494 (2016).

292. Daniel J. Hemel & Lisa Larrimore Ouellette, *Valuing Medical Innovation*, 75 STAN. L. REV. 517, 524–25 (2023). Specifically, they advocate using cost-effectiveness to set the drug prices that the federal government is willing to pay. *Id.* at 525.

293. Ian Ayres & Amy Kapczynski, *Innovation Sticks: The Limited Case for Penalizing Failures to Innovate*, 82 U. CHI. L. REV. 1781, 1783–85 (2015).

undervalue the importance of reducing pollution, a design consideration with clear social value.[294] Congress responded by enacting fuel-economy standards.[295] Manufacturers that fail to comply must pay civil penalties.[296] Thus, instead of rewarding fuel efficient design, Congress punishes fuel inefficiency by making it more costly. Importantly, when setting these aspirational standards, the National Highway Traffic Safety Administration considers four factors: "[t]echnological feasibility, economic practicability, the effect of other standards of the Government on fuel economy, and the need of the nation to conserve energy."[297]

It is worth noting that whether something qualifies as a demand-side incentive or as an innovation stick depends primarily on who will be doing the innovating. Consider the federal regulations adopting the WCAG 2.1 requirements. There, the government sets the standard, informing covered entities that they must comply or face consequences. By declining to provide an exception for external mobile apps, the rules acknowledge that many providers rely on third-party companies to develop virtual health care technologies. In those instances, the proposed rule functions as a demand-side incentive. Holding providers liable should cause them to shop for accessibility when they purchase products and services from third parties. However, for providers who develop their own tech in-house, the proposed rule would function as an innovation stick. Those providers must take it upon themselves to innovate accessibly or face the consequences. Unlike the emission standards, the enforcement mechanism is not a civil penalty but rather the threat of litigation or agency enforcement.

Because technology companies are the source of so much innovation and innovation sticks theoretically already exist for providers who self-innovate, adopting this approach would likely require imposing accessibility requirements directly on developers. Congress could come in and create penalties for failing to meet federally set accessibility rules, thus pushing—rather than encouraging—developers to design accessibly.[298] This strategy is arguably distinct from expanding disability rights laws to apply to developers, as discussed above, because the offending conduct is not "discrimination" but "noncompliance." Like car manufacturers, developers could submit accessibility reports to HHS, not wait for the agency or private litigants to discover violations and take action.

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294. *See id.* at 1785.

295. *Id.* at 1813.

296. *Id.*

297. *Id.* at 1814 (quoting 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62624, 62627 (Oct. 15, 2012) (to be codified at 40 C.F.R. in multiple pts. & 49 C.F.R. in multiple pts.)).

298. Congress would have to structure those penalties carefully. *See* Ayres & Kapczynski, *supra* note 293, at 1786–87 (arguing that "undercompensation of innovative efforts in the long run may lead innovators to exit from an industry"); Alberto Galasso & Hong Luo, *When Does Product Liability Risk Chill Innovation? Evidence from Medical Implants* 2 (Harvard Bus. Sch. Strategy Unit, Working Paper No. 19-002, 2021) ("[H]igher liability may reduce innovation incentives by raising the costs of or chilling the demand for new technologies associated with greater risk.").

C. *STRATEGIES FOR REFORM*

Law- and policymakers have several options for encouraging accessible innovation. However, some of the possibilities are more promising than others. This Section considers which of the strategies outlined above will be both effective and politically feasible. It concludes that certain tools of innovation policy could unite conservatives and liberals, by encouraging developers to design technology that is both profitable and inclusive. Framing these initiatives in terms of supporting industry and requiring compliance, instead of promoting equity and mandating accessibility, could make them more politically palatable for conservative law- and policymakers who might otherwise resist antidiscrimination reform.

1. Challenges of Antidiscrimination

As explored throughout, the lack of accessible virtual health care is puzzling not only because those technologies could generate significant welfare but because the current law requires providers to practice medicine equitably and accessibly. The issue is not so much that we need a new law but rather that we need the laws that we already have to work better. Recall from earlier in this Part that reformers have suggested two strategies: (1) applying federal disability rights laws directly to developers and (2) strengthening enforcement. Unfortunately, this Author is not optimistic about either.

While expanding antidiscrimination law to developers is a popular suggestion, the complexity of the technological landscape may render this strategy ineffective. Directly regulating developers and the technologies that they create is, by its very nature, quite complicated. As Reid explains, digital technology is multi-layered, including content, application, network, and physical elements.[299] This complex ecosystem makes it difficult to identify who is responsible for the inaccessibility.[300] And that ambiguity, in turn, complicates whom to regulate and thereby hold liable. While developers may design websites and apps, their products and services must work within existing technological frameworks, like universal web browsers.[301]

And much like boilerplate language in legal documents, developers often build off existing code, rather than starting from scratch.[302] A single inaccessible website is thus often the result of several cumulative design choices, made over time by various third parties. As a result, digital technology presents challenging issues for regulation.

Another way to think about this issue is in terms of supply and demand. Requiring developers to design accessibly could increase the supply of accessible technologies. Yet most regulators are not technology experts, so they will be unaware that inaccessibility is baked into so many products and

299. Reid, *supra* note 240, at 610.

300. *Id.* at 614–15.

301. *Id.* at 616.

302. James Bessen, *What Good Is Free Software?*, *in* GOVERNMENT POLICY TOWARD OPEN SOURCE SOFTWARE 12, 14 (Robert W. Hahn ed., 2002).

services because of earlier design decisions by unknown third parties. Figuring out whom to regulate and where in the design process may thus be more complicated than it initially appears. Law- and policymakers may then want to avoid intervening on the supply side.

Focusing on the demand side avoids these issues. Regulating demand, instead of supply, allows the technology industry to react and decide on its own the most efficient way to design accessibly without the interference of law- and policymakers. However, the preceding Part illustrates that, in their present form, accessibility mandates have failed to generate the expected demand from providers, most likely due to underenforcement, which leads to the second suggestion for antidiscrimination reform: increasing opportunities for enforcing existing protections.

Federal disability-rights laws like the ADA usually include provisions for private and administrative enforcement, both of which go underutilized. Strengthening either will require congressional action and, because of our divided Congress, bipartisan support. However, legislative efforts to address digital accessibility typically die in committee.[303] Perhaps these failed attempts are part of the growing hostility to antidiscrimination law generally.[304] Republicans in particular, who are prone to reject any measure that might be perceived as "woke,"[305] may be hostile to strengthening protections for disability rights. The current political climate thus renders federal disability rights reform highly unlikely in the near-term.

Law- and policymakers committed to the antidiscrimination paradigm may then have more success at the state or local levels.[306] And state- or local-

303. The recent Sarbanes–Duckworth bill has been referred to the Committee on Education and the Workforce and the Judiciary Committee in the House and to the Committee on Health, Education, Labor, and Pensions in the Senate. Websites and Software Applications Accessibility Act of 2023, H.R. 5813, 118th Cong. (2023); *see also* Websites and Software Applications Accessibility Act of 2023, S. 2984, 118th Cong. (2023). The 2022 version was stuck in committee after its introduction. Websites and Software Applications Accessibility Act, H.R. 9021, 117th Cong. (2022); Websites and Software Applications Accessibility Act, S. 4998, 117th Cong. (2022); *see also* Online Accessibility Act, H.R. 8478, 116th Cong. (2020).

304. This hostility has been around for decades. *See, e.g.*, Kevin M. Clermont, Theodore Eisenberg & Stewart J. Schwab, *How Employment-Discrimination Plaintiffs Fare in the Federal Courts of Appeals*, 7 EMP. RTS. & EMP. POL'Y J. 547, 547–48, 566–67 (2003) (finding judicial bias against employment discrimination plaintiffs).

305. *See* Domenico Montanaro, *Republicans Can't Stop Using the Word 'Woke'. But What Does It Really Mean?*, NPR (July 21, 2023, 5:00 AM), https://www.npr.org/2023/07/21/1189016049/woke-desantis-trump-black-culture [https://perma.cc/4PGQ-TFPC].

306. For example, California, Colorado, Maryland, and San Francisco have all adopted their own digital accessibility requirements. Melanie A. Conroy, Vivek J. Rao & Ariel Pardee, *What Businesses Need to Know About State Consumer Privacy Laws and Digital Accessibility*, NAT'L L. REV. (Aug. 24, 2023), https://www.natlawreview.com/article/what-businesses-need-to-know-about-state-consumer-privacy-laws-and-digital [https://perma.cc/VR59-2J4C]; *Why State and Local Governments Are Adopting Accessibility Mandates*, LEVEL ACCESS (Mar. 28, 2023), https://www.levelaccess.com/blog/why-state-and-local-governments-are-adopting-accessibility-mandates [https://perma.cc/J53B-VF95]; Keely Quinlan, *The ADA Needs an Update for the Digital Era, but Some States Are Ahead of the Curve*, STATESCOOP (Apr. 4, 2023), https://statescoop.com/digital-accessibility-mandates-state-government [https://perma.cc/LPF2-3RDU]; *Digital Accessibility and Inclusion Standard*, SF.GOV

level reform could be particularly impactful in this area because technology often transcends state lines, creating the opportunity for spillover effects in other jurisdictions. Of course, whether this strategy is politically feasible will depend heavily on the state in question.

2. Promise of Innovation Policy

As compared to antidiscrimination law, other tools of innovation policy would have greater traction politically. As explained in Part I, accessible design has the power to generate significant welfare and to improve the lives of all users, not just patients with disabilities.[307] While the appeal of accessible virtual health care is apparent to liberals who rally around equity and inclusion, conservatives may also have much to like about supporting innovation in this area.

Specifically, accessible virtual health care is good for the economy. These technologies could reduce health care costs and even increase profitability for providers. Because people with disabilities consume more health care, ensuring that those products and services are accessible will amplify those positive impacts. Providers could then offer more efficient, higher quality, and more profitable health care.

And accessible virtual health care would also benefit developers. As noted, designing accessibly can lead to better technology for everyone. At present, developers don't have the necessary incentives to invest their time and resources in accessibility. However, certain innovation policy measures could offset those costs. Once developers create accessible virtual health care, they can use that knowledge to design more products and services and even innovate in other sectors. And because accessible technology will have positive spillover effects for users without disabilities, those innovations could be more profitable for developers, generating greater revenues. Innovation policy interventions might then appeal to conservatives as pro-industry and pro-economic growth. This Author hopes that understanding accessible virtual health care as an opportunity for investment that could increase efficiency, reduce health care spending, generate better technology, and lead to greater profits will appeal to more business-minded members of Congress, who would otherwise be hostile to accessibility mandates.

Yet not all innovation policy solutions are created alike. Supply-side incentives, like grants and prizes, will most likely be the easiest sell because they inject capital directly into the private sector. Tax breaks could likewise be construed as stimulating the economy through investing in research and development. However, Congress has dialed back its support for those types of initiatives recently. The Tax Cuts and Jobs Act of 2017 introduced a

(Sept. 15, 2022), https://sf.gov/reports/november-2021/digital-accessibility-and-inclusion-standard [https://perma.cc/UPM2-CF8N]. HHS notes that at least four states have adopted WCAG 2.1 as the standard for their web content. Discrimination on the Basis of Disability in Health and Human Service Programs or Activities, 88 Fed. Reg. 63392, 63427 (Sept. 14, 2023) (to be codified at 45 C.F.R. pt. 84).

307. *See supra* Section I.B.2.

significant change regarding the deduction of research and experimental expenses.[308] Because many technology companies availed themselves of those benefits, tax experts warn that the new law could greatly impact that industry,[309] and even now uncertainty remains around the statute's implementation.[310] Moreover, disability-specific tax incentives, like those associated with the ADA, could face the same obstacles as antidiscrimination law. Thus, tax incentives are probably not the best approach.

Demand-side incentives, apart from antidiscrimination law, have some potential but could still be met with resistance. With respect to administrative carrots and sticks, framing the reform in terms of "compliance" rather than "antidiscrimination" would make it more politically palatable. The new federal digital accessibility standards digital accessibility regulations as part of its final rule, then those requirements could be the basis of a compliance program, similar to the one in the HITECH Act. Giving an agency funds to spend is several degrees removed from actively approving antidiscrimination legislation. Instead of enacting its own antidiscrimination legislation, Congress could simply pass a law to enforce providers' obligations as determined by HHS.

Reforming insurance to increase the demand for accessible virtual health care might also face significant hurdles. Although there has been some bipartisan interest in the move toward value-based care,[311] health care reform has always been a hot-button issue in the United States.[312] And with today's divisive political climate, even historically popular public programs may be in danger due to congressional infighting.[313] Thus, we may not see meaningful changes to Medicare or Medicaid anytime soon. If law- and policymakers want

308. Tax Cuts and Jobs Act, Pub. L. No. 115-97, § 13206, 131 Stat. 2054, 2111–13 (2017); Megan Lisa Jones, *Start-Up Opportunities: The Internal Revenue Code Permits the Exclusion of Certain Gains from Qualified Small Business Stock*, L.A. LAW., Feb. 2018, at 25, 28–29. Previously, companies could deduct those expenditures immediately, as a lump sum in a single tax year. *See* 26 U.S.C. § 174 (2012), *amended by* Tax Cuts and Jobs Act § 13206; Jones, *supra*, at 28–29. Pursuant to the change, which took effect in January 2022, taxpayers must now capitalize those expenses annually, either over a five- or fifteen-year period. *See* 26 U.S.C. § 174 (2018); Jones, *supra*, at 28–29.

309. Shaune Scutellaro, *The Looming Tax Law That Technology Companies Should Prepare for*, FORBES (May 3, 2022, 6:02 AM), https://www.forbes.com/sites/forbesfinancecouncil/2022/04/29/the-looming-tax-law-that-technology-companies-should-prepare-for (on file with the *Iowa Law Review*).

310. Shaune Scutellaro, *Uncertainty Surrounds Treatment of Section 174 Expenses*, FORBES (Sept. 5, 2023, 7:30 AM), https://www.forbes.com/sites/forbesfinancecouncil/2023/09/05/uncertainty-surrounds-treatment-of-section-174-expenses (on file with the *Iowa Law Review*).

311. Value in Health Care Act of 2023, H.R. 5013, 118th Cong. (2023); Kevin B. O'Reilly, *New Bipartisan Bill a Crucial Boost to Medicare Value-Based Care*, AM. MED. ASS'N (Aug. 21, 2023), https://www.ama-assn.org/practice-management/payment-delivery-models/new-bipartisan-bill-crucial-boost-medicare-value-based [https://perma.cc/YYS4-8XZV].

312. *See generally* Jonathan Oberlander, *Unfinished Journey – A Century of Health Care Reform in the United States*, 367 NEW ENG. J. MED. 585 (2012) (cataloging over a hundred years of health care debates in the United States).

313. *See* Casey Schwarz, *Action Alert: Tell Congress Not to Drop Critical Medicare Outreach Funding and Authorization*, MEDICARE RTS. CTR. (Nov. 30, 2023), https://www.medicarerights.org/medicare-watch/2023/11/30/action-alert-tell-congress-not-to-drop-critical-medicare-outreach-funding-and-authorization [https://perma.cc/4RKP-46GB].

to address inaccessible virtual health care through insurance policy, reform at the state level would probably be the best approach.

Innovation sticks also have some potential shortcomings as a strategy for encouraging accessible virtual health care. To start, enforcement would be challenging. Consider fuel-emission standards. The Environmental Protection Agency calculates the fuel economy of each car manufacturer in one of two ways, either by using data provided by the manufacturer or by directly testing the manufacturer's vehicles.[314] Notably, there are a relatively small number of car manufacturers, dominated by a handful of familiar brands. By contrast, there are more than a thousand companies developing virtual health care, which will make agency oversight of this industry considerably more burdensome.[315] Thus, insofar as regulators want to use innovation sticks on developers, they would need a workable means of oversight and enforcement. Here, perhaps technology could afford a solution. Algorithms or AI could be responsible for screening the accessibility reports for compliance or possible fraud.[316] Actual humans working in the agency would then only have to review the flagged reports. Effectively regulating this industry without the help of such technologies would be a Herculean task.

Yet even if the government could streamline enforcement, political feasibility is still an issue. Congress adopted the fuel-economy standards described above, so it could also theoretically adopt a similar regime for digital accessibility. As already explained at length, getting legislative approval for digital accessibility standards has proven difficult. Like for the administrative carrots and sticks, Congress could frame its actions in terms of enforcing agency-made digital accessibility standards promulgated under existing statutes rather than creating a new legal obligation. Hopefully, this framing could bypass the animosity currently associated with antidiscrimination legislation. Nonetheless, other tools of innovation are probably preferable.

In sum, innovation policy could promote accessibility without inciting the political backlash that now comes with antidiscrimination law. Grants and

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314. *See, e.g.*, Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks for Model Years 2027 and Beyond and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans for Model Years 2030 and Beyond, 89 Fed. Reg. 52540, 52919 (June 24, 2024) (to be codified at 49 C.F.R. in multiple pts.) ("The EPA-verified data is based on information from NHTSA's testing, its own vehicle testing, and FMY data submitted by manufacturers to EPA . . . ." (footnote omitted)).

315. *See Telehealth Services in the US — Number of Businesses*, IBISWORLD (Feb. 15, 2024), https://www.ibisworld.com/industry-statistics/number-of-businesses/telehealth-services-united-states [https://perma.cc/JCY5-7GB2] ("There are 1,306 Telehealth Services businesses in the US as of 2023, an increase of 27.4% from 2022.").

316. Darrell M. West, *Using AI and Machine Learning to Reduce Government Fraud*, BROOKINGS INST. (Sept. 10, 2021), https://www.brookings.edu/articles/using-ai-and-machine-learning-to-reduce-government-fraud [https://perma.cc/8BK9-SEYX] (showing how government agencies use AI to detect fraud, including the Internal Revenue Service, the Securities and Exchanges Commission, CMS, and the U.S. Department of the Treasury); Sandy Fliderman, *Will AI Help Companies with Compliance?*, FORBES (Mar. 28, 2023, 10:15 AM), https://www.forbes.com/sites/forbestechcouncil/2023/03/28/will-ai-help-companies-with-compliance (on file with the *Iowa Law Review*) (showing how AI can be used for compliance).

prizes, which directly benefit the private sector, seem particularly promising, as conservatives could support these measures as pro-business and pro-economic growth. Administrative carrots and sticks also have some promise because they could be framed in terms of compliance but, in this Author's opinion, remain a second-best option.

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Neither the market nor existing antidiscrimination laws, have generated accessible virtual health care. Law- and policymakers must take additional action for us to realize the promise of these technologies. Regulators have a variety of options, including expanding accessibility mandates to developers; increasing the enforcement of existing laws and regulations; offering grants, prizes, or tax incentives for accessible design; compensating providers for complying while increasing agency oversight; and even punishing developers for inaccessible design. Considering that disability rights laws go underenforced and accessibility advocates may lack the political power to strengthen those protections, innovation policy offers the best avenue for reform, specifically through grants and prizes. Even conservative law- and policymakers may be able to rally around these interventions, given their support for private industry and economic benefits.

CONCLUSION

At its best, virtual health care facilitates access, increases quality, and lowers costs. These improvements could lead to better care and improved outcomes across populations, thus promoting health equity. They could also increase efficiency and generate revenue. At its worst, virtual health care could further exclude patients with disabilities, lowering the quality of care that they receive and exacerbating existing health disparities. However, neither possibility would occur in a vacuum. In fact, the effect of virtual health care on people with disabilities will depend—at least in part—on a variety of other factors apart from the accessibility of the technology itself.

People with disabilities face challenges with respect to their health care unrelated to technology. Certain tests, examinations, and treatments require patients to physically travel to their providers. Even in a world of fully accessible virtual health care, traditional analog barriers will remain. In-person care will still require potentially time-consuming and costly transit, Deaf patients will still need sign language interpreters, and exam tables and scales will still be largely inaccessible. Perversely, too much reliance on technology might disincentivize addressing accessibility issues that affect in-person care. If a clinic has taken a significant portion of its practice online, it may take longer to repair a broken elevator or choose to reduce the hours of its onsite sign language interpreters to save money. Thus, to achieve true

equity and inclusion, we cannot abandon efforts to reform conventional, in-person health care.[317]

Likewise, accessible virtual health care alone will not remedy current disparities in access to technology.[318] While Americans with disabilities have comparable broadband access to Americans without disabilities,[319] they are less likely to own technology and, perhaps as a result, to use the internet.[320] For the issue of technology ownership, law- and policymakers could pass measures to enable people with disabilities to acquire devices affordably. Members of Congress have proposed legislation that would provide better access to technology for people with disabilities.[321] As for the issue of internet usage, research may be necessary to determine why people with disabilities use the internet at such comparatively low rates. The Federal Communications Commission's Connect2Health Task Force explores the role of broadband technology in promoting health.[322] That body (or other agencies or organizations) could investigate the infrastructure issues that prevent people with disabilities from going online and seek to address them.

Given these other barriers, why should law- and policymakers focus their attention on accessible virtual health care? One reason is that virtual health care is relatively new. Hospitals, courthouses, bus stops, and movie theaters all predate major disability rights legislation. By contrast, the internet went live to the public a year *after* Congress passed the ADA. When Congress amended the ADA in 2008, the iPhone had existed for only one year, and most apps were a thing of the future. Developers were effectively designing from scratch. With sufficient demand, they could have created inclusive technologies. As argued throughout, neglecting to prioritize accessibility has harmed people with disabilities, particularly in the context of virtual health care. While most health care providers have already adopted EHRs, they are still figuring out how to integrate technology into their practices long-term. If we act swiftly, we can reverse course and ensure that, going forward, providers and developers

317. In fact, simply the move from traditional health care to virtual health care could negatively impact people with disabilities who are more likely to require in-person care. Valdez et al., *supra* note 17, at 391.

318. *See* Hoffman, *supra* note 17, at 353–54; *see also* Mofokeng, *supra* note 65, at 15–16 (identifying the digital divide as a barrier to a right to health).

319. Andrew Perrin & Sara Atske, *Americans with Disabilities Less Likely Than Those Without to Own Some Digital Devices*, PEW RSCH. CTR. (Sept. 10, 2021), https://www.pewresearch.org/fact-tank/2021/09/10/americans-with-disabilities-less-likely-than-those-without-to-own-some-digital-devices [https://perma.cc/VYV7-SFCX].

320. *Id.*

321. The Access Technology Affordability Act, reintroduced in January 2021 by Representative Mike Thompson, would have provided refundable tax credits to people who are blind and their families in the amount that they paid for "qualified access technology." Access Technology Affordability Act of 2021, H.R. 431, 117th Cong. § 2(a) (2021). The covered technologies would have included both hardware and software. *Id.* Congress could consider a similar initiative to lower the costs of obtaining the devices required for accessing virtual health care.

322. *Connect2HealthFCC*, FED. COMMC'NS COMM'N, https://www.fcc.gov/about-fcc/fcc-initiatives/connect2healthfcc [https://perma.cc/QG3G-UASS].

alike are working to build a more accessible, inclusive world. In short, there is less entrenchment and more opportunity for innovation and change.

Not only does prioritizing accessibility in the near-term promote equity, it could also save money. Retrofitting—whether physically or digitally—is more expensive than building accessibly in the first place. If providers have already integrated inaccessible technology into their practices, there will certainly be switching costs to adopting accessible products or services. The sooner virtual health care becomes accessible the lower these costs will be.

Inaccessible virtual health care represents the intersection of two extremely important areas for reform that have far-reaching impacts on Americans with disabilities: health care and technology. It is my hope that, by addressing this problem, we can encourage accessibility and inclusivity more broadly, moving us that much closer to a just and equitable world.