

**“Necessary and Appropriate”:  
The Inaccessibility of Accessible Medical Diagnostic Equipment**

A Research Paper submitted to the Department of Engineering and Society

Presented to the Faculty of the School of Engineering and Applied Science  
University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements for the Degree  
Bachelor of Science, School of Engineering

**Ashtin Jannuzzi**

Spring 2025

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Advisor

Karina Rider, Department of Engineering and Society

## **“Necessary and Appropriate”: The Inaccessibility of Accessible Medical Diagnostic Equipment**

In the current U.S. medical system, healthcare disparities impact millions every day. A 2022 national telephone interview found that 12.2% of U.S. adults (over 34 million) reported having a mobility disability, which correlates with poorer health outcomes and higher rates of chronic conditions (CDC, 2022; Mitra et al., 2022). It's believed that these conditions are tied, in part, to inadequate examinations at healthcare facilities. While non-disabled individuals may have regular check-ups on an exam table, people with mobility issues are examined in wheelchairs or office chairs, pointedly off the exam table. Examinations performed on a table allow the provider to check overall patient health and detect early signs of disease; when done off-table, examinations are less thorough and do not provide as much essential health information, allowing diseases to progress and affect patients longer. These variable practices contribute to overall poorer health outcomes and are examples of the health inequities people with disabilities face.

For many years, disability advocates demanded improvements to medical equipment standards that, until recently, were not required to be accessible. Many justified the decision based on cost; accessible medical diagnostic equipment (MDE) is more expensive, would benefit a limited number of patients, and would not be a good use of resources. Within the medical community, the use of accessible MDE (even when present) is uncommon since disability is considered a thing to cure, and solutions that don't further that effort (e.g. using accessible exam tables) are secondary. These conventions have contributed to a widespread (and paradoxical) belief that individuals with disabilities have a lower quality of life than those not disabled, subsequently leading to poorer health outcomes for patients overall (Iezzoni, Rao, Ressler, Bolcic-Jankovic, Agaronnik, et al., 2021).

A poor perception of disability in combination with an aversion to spending money on costly regulations can have a system-wide impact on providing accessible MDE. To this, I believe that the drive for efficiency within the U.S. healthcare system acts as a barrier and excuse to perpetuate health inequities experienced by people with disabilities. In an effort to save time and money, patients who require accommodation and understanding are relegated to second-class healthcare. To make lasting changes in providing accessible MDE and improving overall care, a social shift must first occur: healthcare must shift its focus from efficiency and a desire to *cure* a patient to understanding and a desire to *accept* a patient, with or without disabilities. In this research paper I ask: what factors are preventing accessible medical examination tables from being implemented nationwide and what changes can be made to eliminate these factors? The answers lie in wider social change rather than distribution of a product. Health policy researchers have advocated these points for years and in their research, they provide varied solutions to these questions.

To answer these questions, I performed a meta-review of health policy research and legislation surrounding healthcare inequities experienced by those with mobility disabilities due to the absence of accessible diagnostic equipment. I analyzed studies on regulations for accessible MDE, current practices and standards of care, perceptions of providers on disability, and recommendations made to improve these systems. Using Latour's actor-network theory, I also explained how disability is framed in the medical community.

Change, both in a regulatory and social sense, is slow and ongoing even 30 years after the landmark act for disability rights, the Americans with Disabilities Act (ADA), was passed. These prolonged oversights and the persistent inequities felt are indicative of how much of society – policymakers and healthcare providers specifically – perceive disability protections and those

who have these conditions: as nonessential regulations and suffering patients to fix. Through a change of perspective, an improvement to provider education, and a shift in public acceptance, accessible diagnostic equipment can improve health outcomes for those with disabilities.

## **Background**

Medical diagnostic equipment refers to a wide range of devices used by healthcare providers for diagnostic purposes. Equipment such as examination beds and weight scales may come into mind, but this classification also includes imaging devices, mammography equipment, examination chairs, and any manner of new device with this intended use. They are life-changing devices, used to carry out in-depth examinations and allow practitioners a detailed look of or into a patient's body – that is, if the device can accommodate.

MDE manufacturers commonly make models of their products that have adjustable features meant to be more accommodating for patients with limited mobility. In 2017 a series of guidelines, called *Standards for Accessible Medical Diagnostic Equipment*, were published to suggest the criteria for accessible medical equipment. They designated that for examination tables and chairs to be accessible, they must be able to lower to a height of 17 inches from the ground to allow for patient transfer and have elements to stabilize a patient, such as handrails or straps (ADA, 2017).

These designs, though more accessible, are more complex and expensive due to additional hardware and electronics. For example, the most common examination table is a fixed-height exam table, also called a “box table” (Fig. 1). This style of table has minimal electronic components and its height fixed at 32 inches. The estimated price differential per unit is \$1,867;

inaccessible units have an average price of \$2,334, accessible units are prices at \$4,201 on average (Eastern Research Group Inc., 2024).

**Figure 1**

*Ritter® 204 Manual Examination Table*



*Note.* A common box table model

*(Ritter® 204 Manual Examination Table, n.d.)*

Within the US, regulations for healthcare settings and private practices are set by government departments; most operate under the Department of Health and Human Services (HHS) such as the Center for Disease Control and Prevention (CDC), which spreads public health information, and the Food and Drug Administration (FDA), which regulates medical devices. Other departments and offices play a role; the Architectural and Transportation Barriers Compliance Board (US Access Board) was created in 1973 to develop accessibility standards and the Department of Justice (DOJ) serves to enforce regulations put forth.

These regulations are subject to change and have, within recent memory, aligned with the goals of the current administration. Legislation, rulings, and acts are expected to lengthen as time goes on, adding to the protections they afford. For example, the original Rehabilitation Act of 1973 prohibits discrimination on the basis of disability in various contexts. The act was amended in 2010 to include standards that set out minimum technical criteria for MDE used in medical settings and broadened in 2024 to include more extensive healthcare settings (Iezzoni & Stein, 2024; NCD, 2021). Without these requirements, the presence of accessible MDE would be at the discretion of healthcare facilities and practices where they could be overlooked or written off for any number of reasons. Later, the progression of disability laws and protections will be expounded upon.

It is widely accepted, and felt by those with disabilities, that the level of care given to people with disabilities is lower than those without disabilities. In one survey of California healthcare settings, only 8.4% of offices had an accessible, height-adjustable exam table, with even less having an accessible weight scale (Iezzoni, McKee, et al., 2022). Another study gives a more generous figure of 40.3% of providers who report “always” or “usually” using accessible exam tables or chairs based on patient need, though this is still quite low (Iezzoni, Rao, Ressler, Bolcic-Jankovic, Donelan, et al., 2021). Information on this topic is also vastly underreported, especially since it would be patients experiencing and doing this reporting. Currently, the frequent practice is to lift a patient onto a fixed-height table, either with patient lifts or with the help of a nurse. Other times, patients are only examined from their mobility aids. This is not equitable care and could cause easily detectable issues to go unnoticed, leading to poorer health outcomes for people with disabilities. The absence of accessible MDE, particularly exam tables, is a significant contributing factor to this lesser level of care.

This leads into my research question: what factors are preventing accessible medical examination tables from being implemented nationwide, and what changes can be made to eliminate these factors? Fortunately, these are not new questions; many health policy researchers have dedicated their lives to tracking and commenting on the effects of policy and regular practices on people with disabilities. The goal of this paper is to analyze their findings and recommendations, discuss the changes in regulation that have occurred in the past year, and predict impacts on future healthcare practices in the US.

## **Methods**

To answer these questions, I performed a meta-review on health policy research, opinions from prominent researchers, and legislation surrounding accessible MDE. I began by searching

online “why are there no accessible examination tables in doctor offices” and “physician perceptions of people with disabilities” which delivered a mix of news articles, blogs, and studies available on PubMed. Through their references, I found many studies came from the online journal *Health Affairs*; using the advanced search feature with keywords “disparities”, “health policy”, “accessibility”, “equipment”, “ADA”, “disabilities”, and “equitable care” on their website, I was able to discover additional journal articles and opinion pieces specific to these topics. Several news articles, published on *Disability Scoop* and *New Mobility*, were discussions of recent studies by prominent disability health researchers and led me to their similarly themed publications.

I did not initially intend to focus on legislation for this review but as more journal articles mentioned regulations and DOJ ruling on medical standards, I felt a discussion of legislation would be beneficial. Beginning with the rulings referenced in studies, I found the federal rulings, decisions, and executive orders themselves on the electronic Code of Federal Regulations. Since prominent acts can be hundreds of pages long and have years of revisions, I used news articles and policy research studies intended for physicians to determine what the laws implied, who they protected, and how they were enforced.

A research study needed to be published in a peer-reviewed and trusted medical journal (JAMA, NEMJ, Healthy Affairs, etc.) for it to be included as a source. Opinion pieces and briefs from health policy researchers were also included if published in such a journal. I limited my scope to articles published after the ADA revision in 2008 since it could have impacted accepted practices. Other sources (news articles, fact sheets, legislation) I included were not limited to these criteria since they provide context for these findings. Similarly, information on healthcare systems and physician practices was included to provide a baseline for physician-patient

interactions and was not limited to a date range. Statistics, fact sheets, and legislation were taken from official U.S. government websites and publications related to accessible MDE and healthcare for those with disabilities.

## **Findings & Discussion**

### **A History of Accessible Equipment Legislation**

Accessible MDE isn't widely present because until recently, it *wasn't* a requirement. Paired with the fact that accessible tables are more expensive, practices were not required by law to have them and therefore did not purchase them. Recent changes have made this a requirement for public health settings, with private sectors expected to follow suit.

The foundation for disability rights in the U.S. started long before the first laws were passed; the movement culminated in 1973, demanding legal protections for people with disabilities who had been excluded from previous civil rights acts. This social movement resulted in the Rehabilitation Act of 1973, prohibiting discrimination on the basis of disability in various contexts, including federal employment settings and federally funded programs. Section 502 established the U.S. Access Board, responsible for enforcing early accessibility laws within federal agencies and proposing solutions to environmental barriers. Section 504 prohibits discrimination from programs or activities that receive federal financial assistance, which includes private and public (Medicare, Medicaid, etc.) healthcare settings. Like other acts, the Rehabilitation Act is continually amended to add further legal protections and regulations.

Though the Rehabilitation Act was groundbreaking as the first federal legislation securing disability civil rights, it lacked power to implement changes eliminating architectural and communication barriers (Mayerson, 2017). Research and solutions proposed following the act



served as foundation for the ADA. First passed in 1990, and later revised in 2008, it extended disability civil rights and protection from discrimination. It separated regulations for programs and services by “public” and “private”: Title II described federal, state, and local government services, including federal healthcare providers, while Title III described businesses and nonprofits open to the public, including private healthcare providers. The ADA was a significant advancement and secured both civil rights protections and accessibility standards but its scope was limited to structures and buildings, meaning that while accessible ramps and automatic doors in healthcare facilities were under their regulations, the equipment used inside was not.

To combat this limitation, part of the Patient Protection and Affordable Care Act (ACA) addressed creating guidelines for accessible medical diagnostic equipment. The ACA made sweeping healthcare changes across the U.S., notably expanding health insurance coverage, disability rights, and standards of care. Section 1557 reinforces protections from discrimination on the basis of disability in health programs and activities that receive any funding from HHS (Rights (OCR), 2016). Further, the ACA added Section 510 to the Rehabilitation Act in March 2010, calling on the Access Board to issue “standards that set out minimum technical criteria for MDE used in medical settings,” which were created in consultation with the FDA and MDE manufacturers (Iezzoni & Pendo, 2018; NCD, 2021). This multiyear process began in July 2010, with the release of an advance notice of proposed rulemaking (ANPRM) by the DOJ titled “*Nondiscrimination on the Basis of Disability by State and Local Governments and Places of Public Accommodation; Equipment and Furniture.*” The initial ruling proposed changes to requirements informed by the *Standards* under Titles II and III of the ADA, ensuring equipment and furniture used in public programs and services would be accessible to individuals with disabilities (Equipment and Furniture, 2010).

As the Access Board was finalizing their proposed standards, a change in political power shifted policy goals. In January 2017, on the platform of improving the nation's economy and cutting federal misspending, President Donald Trump took office and shortly after issued Executive Order 13771. Titled *Reducing Regulation and Controlling Regulatory Costs*, it implemented a bold new policy that "the total incremental cost of all new regulations, including repealed regulations, to be finalized this year shall be no greater than zero [dollars]." It was also planned that each year thereafter, each agency would be held to a budget for proposed legislation, and "no regulations exceeding the agency's total incremental cost allowance will be permitted in that fiscal year" (*Executive Order 13771*, 2017). It should be recognized that executive orders cannot override federal laws or statutes and cannot work outside of the power of the executive branch. Rather, they are policy directives ordering government agencies to take specific actions within their power to achieve a certain agenda and ensure all other laws are faithfully executed (Anders, 2025). The intention behind this executive order was clear; it aimed to cut government spending by means of limiting the number and extent of regulations proposed in perpetuity, repealing any regulations that would cost money to implement.

The following month, the Access Board published their final ruling on accessibility standards for MDE, plainly titled "*Standards for Medical Diagnostic Equipment*." Within, they established minimum technical criteria (height and seat area requirements for exam tables and chairs, transfer heights, rails and other support features, etc.) for MDE to be "accessible" and operational guides for patients independently transferring into and out of the equipment. These proposed guidelines, intended to be implemented in Title II and III healthcare facilities, did not impose any mandatory requirements on health care providers or medical device manufacturers directly. Rather, they would allow other enforcing authorities and agencies to establish protocols

and formal legislation according to the standards (Standards for Accessible Medical Diagnostic Equipment, 2017). At the time the Access Board's ruling was published, they had no force or effect on the law, and it was only suggested in the DOJ's ANPRM that these would be regulatory standards. The final step would require the DOJ to issue new ADA rules incorporating the *Equipment and Furniture* ruling, as well as addressing public and private health settings where accessible MDE was required (Iezzoni & Pendo, 2018).

In December 2017, the DOJ announced the withdrawal of four previously announced ANPRMs pertaining to Titles II and II of the ADA, including *Equipment and Furniture*. The reason cited followed the policy directives stated in Executive Order 13771: "The [DOJ] is reevaluating whether regulation of the accessibility of non-fixed equipment and furniture is necessary and appropriate. Accordingly, the Department is withdrawing the previously announced ANPRM." Paradoxically, Section 4203 of the ACA required studies conducted on a national level to assess access to care, determining the number of providers with accessible facilities and MDE; however, these studies had not yet been carried out and could possibly have lent further credence to the point that they are necessary and appropriate (Iezzoni & Pendo, 2018). Health policy researchers and the public expressed their disappointment over the announcement and displeasure with the standard of care that would persist. Though the *Notice of Withdrawal* stymied the required adoption of the Standards, select Medicaid programs across the U.S. created similar guidelines based on the Access Board's work; besides these specific locations, however, regulations and practices remained as they were (Bluth, 2018).

In 2024 – after a change in administration, research on health inequalities felt by people with disabilities, and the increased demands for disability healthcare reform – the DOJ issued another ruling: *Nondiscrimination on the Basis of Disability: Accessibility of Medical Diagnostic*

*Equipment of State and Local Government Entities*. This ruling requires state and federal healthcare facilities to adopt the Access Board's *Standards* and scoping requirements for newly purchased MDE. After October 8, 2024, it was required that more than 10% (or at least one unit, whichever more) of MDE in Title II healthcare facilities be in accordance with the 2017 *Standards*. By August 9, 2026, facilities would be compelled to purchase a certain amount of accessible MDE if they had not already done so. Although these regulations only currently apply to Title II settings, it's believed private healthcare settings will soon adopt these standards as well (Wesley & Raizman, 2024).

Additional legislation was passed in conjunction with *Accessibility of Medical Diagnostic Equipment of State and Local Government Entities*, reinforcing these regulations. Section 504 of the Rehabilitation Act was updated to include more specific healthcare settings, as well as "extensive provisions requiring accessible MDE" (Iezzoni & Stein, 2024). Regulations 45 CFR § 84.91 – 84.94 were codified in the federal register as general and permanent rules, defining scoping requirements on newly acquired MDE, MDE training for staff at Title II facilities, protections so individual could not be denied services due to inaccessible MDE, and eliminating loopholes that could be exploited (Iezzoni & Stein, 2024).

From 1973 to 2024, disability rights and protections have made slow but steady progress forwards. Early laws focused on civil rights and architectural requirements so people with disabilities were protected from targeted discrimination and had access to buildings. In the late 2000s, efforts to create standardized guidelines for accessible MDE began and stretched into the 2010s. Once these standards were formalized, it took several years and a narrowing of their scope to only public health facilities for them to be accepted on a national scale. Additional regulations were published alongside, requiring public health facilities to either have or acquire

new equipment that fit the *Standards*. Though these regulations are not required in private healthcare practices, using accessible MDE is considered the best practice and future regulations may require them to abide by them in due time.

Although these regulations are now in place, there exists the chance that they are repealed or revoked in the name of reducing regulations. Thankfully this is an extensive process enacted by multiple powers; however, with widespread coordination, these laws can be dismantled. The return of a former administration and their goals has already thrown the HHS into turmoil, especially for disability protections tied to disparate laws that are difficult to track. At the time of writing, two distinct cases are occurring. The DOJ recently withdrew certain ADA-compliance guidelines in the name of allowing businesses “to deliver price relief to consumers by avoiding confusion and reducing the time spent understanding ADA compliance.” The withdrawn guidelines clarified a business’s responsibilities under the ADA, as well as policies securing disability rights during COVID (Alexander W. Bogdan & Ryan W. Lee, 2025; Diamant, 2025). Additionally, a lawsuit from 17 states threatens to repeal Section 504 of the Rehabilitation Act in its entirety, which would eliminate the foundational protections prohibiting discrimination against those with disabilities (“Section 504 Is Under Attack,” 2025). These cases are ongoing and research will need to continue, not only to stay informed of laws at risk, but to advocate for new laws and protections to make sure accessible MDE is in place for people to use.

## **Healthcare Practices**

Healthcare inequities are known to and felt by people with disabilities every day. These have been widely categorized into six main areas: disability data gaps, accessible communication, home and community support, non-discriminatory health insurance benefit design, physical

access to care, and competency training for providers (Buning et al., 2024). Of these, my research mainly focuses on the latter two.

Physical access to healthcare includes more than access to a network or entry to buildings. As mentioned, the ADA dictates buildings and structures must be able to accommodate mobility aids and newer guidelines – too recent to have extensive research on their impact – promise to regulate diagnostic equipment within select facilities. For a long while, what accessible equipment existed was not standardized and was an unobligated purchase by a healthcare system or an individual practice. Feedback from providers could have influenced decisions to acquire accessible MDE.

As we've seen, choices to include accessible MDE were not made; a majority of offices do not have these accessible tables or scales. Patient transfers onto the table can be attempted but often are not due to staff not being trained to transfer patients, fear of injury to staff, and fear of harming the patient (Iezzoni, 2008; Iezzoni, Rao, Ressler, Bolcic-Jankovic, Donelan, et al., 2021; Lagu et al., 2013, 2022). A patient may be expected to transfer themselves or that they'll bring their own means of transfer, which are the responsibility of the practice and provider (Gilmer, 2013; Iezzoni, 2008). Even if a patient is capable of transferring onto a fixed-height table, patients report they feel less safe even sitting at that height (Fragala et al., 2017). These reasons are commonly used to justify examining a patient off the table, usually in the patient's mobility device or an office chair. Even if an accessible table is present, providers may not elect to use it and cite time constraints in an already hectic schedule as the reasoning (N. Agaronnik et al., 2019a; Lagu et al., 2022; Morris et al., 2017).

This raises concerns about health equity, notably that these irregular examinations are not the same for non-disabled individuals and commonly results in unmet health needs (Singer &

Dickman, 2017). For example, proper positioning on a exam table allows a provider to view and manipulate a patient's body, detecting early indicators of disease. The positions patients take for proper examination cannot be performed in an office chair. Pelvic exams are usually not performed on people with disabilities because providers assume they are asexual (a sexual orientation, not a physical trait or condition) or, at the very least, not sexually active (N. Agaronnik et al., 2019b; Iezzoni, Rao, Ressler, Bolcic-Jankovic, Agaronnik, et al., 2021; Iezzoni, McKee, et al., 2022; Morris et al., 2017; Wen, 2014). In lieu of taking weight measurements, patients are asked to provide their weight, often inaccurate due to the prolonged gaps between formal weighing. This can have major ramifications such as BMI misclassification, inaccurate medication dosage, compromised weight management treatments, and flawed prenatal care interventions (Iezzoni, Rao, Ressler, Bolcic-Jankovic, Donelan, et al., 2021). Without a proper examination of a patient's body and weight, early signs of illness can go unnoticed and progress, highlighting the importance of this often-trivialized tool for care.

Assumptions about patients with disabilities have major health ramifications. A provider can assume pain is the result of mobility impairment when it is the indicator for disease. Sexual orientation or activity are disregarded and assumed as none, so pelvic exams are not performed. Even quality of life is assumed and has been the principal justification used by providers to terminate life support. The reason standardized examinations exist and are used in medicine is to act preemptively to catch disease, investigating indicators and proving – not assuming – that a patient is healthy. None of these assumptions would be made for a person without a disability, exposing the extreme level of health inequalities at the point of care faced by those with disabilities.

This assumes patients are even afforded a doctor's visit. It is frequent practice for providers to refuse to see patients or attempt to discharge them due to their disability, citing time constraints, limited resources, and not providing their own means of transfer. Providers with private practices admitted to saying they no longer accepted new patients or the patient's insurance was not accepted when neither may be true. These discriminatory practices are illegal, though some providers use these plausible excuses to protect themselves from legal retaliation (N. D. Agaronnik et al., 2019). From the point of a provider, denying care on these terms minimizes their chance of being sued should a patient report them for refusal. Some practitioners felt that since a patient was disabled, they "couldn't control the situation enough to do [a procedure] properly", or a procedure (implied to be a pelvic exam) was not necessary due to a patient's disability (Gilmer, 2013; Lagu et al., 2022). These accounts were directly from providers in researchers' interviews; from their willingness to discuss these practices, it indicates that many providers are not aware that they are illegal. Some providers admit to being unsure of the legality but engaging anyway, stating they were untrained and uneducated on regulations surrounding care for those with mobility disabilities (Lagu et al., 2014; Weil, 2022).

How providers perceive their patients directly influences care. One study found "82% of doctors surveyed believe patients with disabilities have lesser quality of life than nondisabled patients", which inherently impacts the level of care provided (Iezzoni, Rao, Ressler, Bolcic-Jankovic, Agaronnik, et al., 2021). Perceived quality of life has been used to justify denying or delaying medical care. Prominent examples from the recent COVID pandemic include patients with complex disabilities being last to receive ventilators or other limited supplies, and one account of patient death following denial of life-sustaining treatments (tube-feeding and water) due to their quadriplegia (Gilmer, 2023). This thinking follows what providers are taught in



medical school and the wider perception of disability. Within the medical community, the medical model of disability sees disabilities as abnormalities meant to be cured, not accepted, leading providers to downplay the use of accessible MDE that plays no role in “fixing” the patient (N. Agaronnik et al., 2019b; Gilmer, 2013). This is contrasted to the social model of disability, which views the physical and social environment as responsible for barriers. Many researchers believe that the only way to implement lasting changes for disability healthcare is through a shift to this social model.

Health policy researchers have identified “physician lack of training” as one main reason for disability health inequities. One study found around 36% of providers self-reported as knowing little to nothing of their responsibilities under the ADA and “71.2% responded incorrectly about who determines reasonable accommodations for patients with disabilities” (Iezzoni, Rao, et al., 2022). Some doctors were practicing before the ADA was passed and could not have been educated on their obligations, but even providers who went to medical school after did not receive education on these subjects. Providers also express ignorance of how to care for people with disabilities, this being the leading self-reported reason to excuse insufficient amenities and knowledge gaps.

## **Discussion**

Actor-network theory can be used to explain how disability is framed in medicine and healthcare. Latour’s theory states that everything – providers, patients, and society, even equipment and healthcare systems – is an actor within a network (Latour, 1992). Within a doctor’s office, an examination table is an actor with a role (supporting a patient during examination) and individual agency. Ideally, the actor would be performing the same role for everyone; however, only people who can ascend the table benefit from the table’s presence. An

examination table takes on the role of positioning patients, with a design that positions patients for providers to examine correctly, relieving the provider of this role. However, for people who cannot access the table, the responsibility returns to the provider, who often forgoes the duty entirely by opting to examine a patient in a sitting position. For those with mobility disabilities, a fixed-height table is a poor actor with an unsatisfying role. In actuality, the actor (a fixed-height exam table) is not the universal tool it means to be and another, more accessible, actor would be better suited. In the absence of a more accessible device that would enable patients with limited mobility, they are underserved by the equipment present and labeled “disabled.”

Since examination tables are seen as an actor with a unifying role, the inaccessible design of the table communicates that people who cannot access this table are not worthy of the role it provides. This extends further than just accessible MDE and devices – the entire healthcare system seeks to streamline care, and those who require additional accommodations are underserved by the present systems. Instead of recognizing that the technology people created should be fixed or exchanged, providers seek to fix patients instead, changing the human rather than the nonhuman actor. This is how care is seen under the medical model of disability; a provider should cure someone so they may access a specific actor. The first step to improving care for people with disabilities or any who require accommodations, we must first accept that the actors we’ve cast are performing poorly.

Each study, opinion piece, and news article I’ve read acknowledges that care for people with disabilities is not equitable, and the ADA was only a first step for further legal protection. When interviewing and surveying practitioners, it was clear that they were not thoroughly educated on the protections the ADA or other legislation afforded people with disabilities, what obligations a practice has to patients requiring accommodations, or even how to care for those with

disabilities. Many accounts cite a lack of education on disabilities in medical school and the pervyance of the medical model of disability as contributing factors. Physician bias and discriminatory practices (not admitting people with disabilities into their practice, finding reasons to discharge them from care, using outdated and insensitive practice, etc.) are also major contributors to the poor level of care people with disabilities receive. A common theme is the demand for medical education reform, with a guide published by the Nisonger Center listing proposed changes to medical curriculum to include core disability competencies.

However, these guides and recommendations are unlikely to be taken up by many healthcare systems and practices, who wish to save time and money, without legal requirements from federal regulations. Laws passed before 2000 were originally passed with a focus on disability civil rights protections and structural design; laws for equipment were only seen later. Accessible (or at least, more accommodating) models of MDE did exist before the *Standards* were a requirement, but these were virtually absent outside care centers specifically for patients with disabilities. Voluntary acquisition of accessible MDE is ineffective on a national scale for our current for-profit healthcare system. And it has been known, by hundreds of health policy researchers and millions of patients, that the level of care provided to people with disabilities is poorer than that provided to those without. In the face of questioning the necessity of these protections and equipment, it's shown that they are necessary and appropriate to provide more equitable care.

Although we can celebrate these laws and the steps we've taken forward, we cannot stand idly, as these issues are ongoing. At the time of writing, the installation of a new presidential administration has created major changes in the federal government, especially surrounding the HHS and funding for public health programs. Assessments of federal spending driven by the

personal proclivities of prominent politicians (and notable private citizens) have resulted in massive layoffs, decreased resources, and an environment where publishing research using taboo words such as “accessible”, “disability”, and “equitable” decreases funding chances (Yourish et al., 2025). Legislature and legal protections that have been in place for years are “re-examined” and cut with the same deftness that past proposed MDE standards were halted – including ADA guidance for businesses, practices established during the COVID-19 pandemic, and (potentially) Section 504 in its entirety – the basis of disability civil rights (Alexander W. Bogdan & Ryan W. Lee, 2025; Diament, 2025; “Section 504 Is Under Attack,” 2025). Hard-won civil rights battles and recently enacted regulations could be struck down in the name of savings. As seen, it is only at the behest of these legal requirements that accessible devices are present. With the returning administration implementing their previous goal of reducing regulations, with past actions directly delaying the adoption of MDE accessibility standards, and with the widespread anticipation and uncertainty this entails, all should be concerned about the fate of disability protections.

Still, the narrative of one administration cannot change the fact that research surrounding disabilities and health is lacking. There is a clear and visible need for further research into specific topics of healthcare: quality of care in rural areas, current proportion of facilities with accessible MDE, nationwide surveys of providers on their ADA knowledge or perception of disability, etc. Through this necessary first step, the voices of patients and practitioners with disabilities can be elevated so more people can understand the need for improvement and acceptance. Changes to medical school curriculum, including required courses such as caring for individuals with disabilities and responsibilities under healthcare laws, could help to inform future providers. One method of teaching bedside manners at some schools incorporates actors

and focused communication; a similar curriculum could be implemented to ensure medical school students gain this knowledge and experience to care for people with disabilities (Swanson, 2018). Hospital systems could also require specific courses to be taken by family medicine providers as part of their continuing medical education that includes these topics.

## **Conclusion**

The factors inhibiting the nationwide presence of accessible MDE aren't of distribution, they're of realizing its necessity. The healthcare systems currently in place and the education given to providers contribute to this oversight, focusing instead on efficiency and "curing" a patient's disability. Without legislature requiring accessible MDE to be present, efficiency that only benefits a for-profit system wins out and leaves an already marginalized patient group without care. Expanding education and upkeeping regulations are the first steps the US medical system can take to improve health outcomes for people with disabilities.

In deepening our understanding about current health practices, more people can recognize inequities and demand improvement. Often, laws are instated and remain only because there is a societal demand for them; without that backing, they wither – or would've never been instated. A constant awareness and demand for improved care for people with disabilities is necessary to power these laws, which can only exist through wider social acceptance. The first steps to solve this twofold problem would be instilling social acceptance of disability through improving provider education and demanding further legal protections, though social change can only be attempted – never forced. Once it is achieved over time, it can allow for a shift from the medical model of disability to the social model and assurance of accessible MDE in healthcare facilities, leading to better health outcomes for those with disabilities.

## References

- ADA. (2017). *Accessible Medical Examination Tables and Chairs* | *ADA National Network* [Fact sheet]. <https://adata.org/factsheet/accessible-medical-examination-tables-and-chairs>
- Agaronnik, N., Campbell, E. G., Ressalam, J., & Iezzoni, L. I. (2019a). Accessibility of Medical Diagnostic Equipment for Patients with Disability: Observations from Physicians. *Archives of Physical Medicine and Rehabilitation*, 100(11), 2032. <https://doi.org/10.1016/j.apmr.2019.02.007>
- Agaronnik, N., Campbell, E. G., Ressalam, J., & Iezzoni, L. I. (2019b). Exploring Issues Relating to Disability Cultural Competence Among Practicing Physicians. *Disability and Health Journal*, 12(3), 403–410. <https://doi.org/10.1016/j.dhjo.2019.01.010>
- Agaronnik, N. D., Pendo, E., Campbell, E. G., Ressalam, J., & Iezzoni, L. I. (2019). Knowledge Of Practicing Physicians About Their Legal Obligations When Caring For Patients With Disability. *Health Affairs*, 38(4), 545–553. <https://doi.org/10.1377/hlthaff.2018.05060>
- Alexander W. Bogdan & Ryan W. Lee. (2025, March 28). Department of Justice Loosens the Requirements of the Americans With Disabilities Act. *Fox Rothschild*. <https://www.foxrothschild.com/publications/department-of-justice-loosens-the-requirements-of-the-americans-with-disabilities-act>
- Anders, C. (2025, February 4). What Is an Executive Order and How Does it Work? | ACLU. *American Civil Liberties Union*. <https://www.aclu.org/news/privacy-technology/what-is-an-executive-order-and-how-does-it-work>

- Bluth, R. (2018, October 31). Trump Rollback Of Disability Rules Can Make Doctor's Visits Painstaking. *KFF Health News*. <https://kffhealthnews.org/news/trump-rollback-disability-rules-ada-health-care-hurdles/>
- Buning, G. E., James, T. G., Richards, B., & McKee, M. M. (2024). Self-Reported Accommodation Needs for Patients with Disabilities in Primary Care. *Joint Commission Journal on Quality and Patient Safety*, 50(1), 59–65.  
<https://doi.org/10.1016/j.jcjq.2023.10.012>
- CDC. (2022). *Disability and Health Data System (DHDS) Data* [Dataset]. <https://dhds.cdc.gov>
- Diamant, M. (2025, March 20). Trump Administration Withdraws ADA Guidance. *Disability Scoop*. <https://www.disabilityscoop.com/2025/03/20/trump-administration-withdraws-ada-guidance/31368/>
- Eastern Research Group Inc. (2024). *Nondiscrimination on the Basis of Disability; Accessibility of Medical Diagnostic Equipment of State and Local Government Entities (RIN 1190-AA78)—Final Regulatory Impact Analysis* (pp. 26–28). Department of Justice, Civil Rights Division. <https://www.ada.gov/assets/pdfs/mde-fria.pdf>
- Executive Order 13771*. (2017, January 30). 82 FR 9339.  
<https://www.govinfo.gov/content/pkg/FR-2017-02-03/pdf/2017-02451.pdf>
- Fragala, G., Labreche, M., & Wawzynieki, P. (2017). Benefits Achieved for Patients Through Application of Height-Adjustable Examination Tables. *Journal of Patient Experience*, 4(3), 138. <https://doi.org/10.1177/2374373517706835>

Gilmer, T. (2013, July 1). Equal Health Care: If Not Now, When? *New Mobility*.

<https://newmobility.com/equal-health-care-if-not-now-when/>

Gilmer, T. (2023, April 25). Doctors Still Have No Idea How to Treat People with Disabilities.

*New Mobility*. <https://newmobility.com/doctors-still-have-no-idea-how-to-treat-people-with-disabilities/>

Iezzoni, L. I. (2008). Blocked. *Health Affairs*, 27(1), 203–209.

<https://doi.org/10.1377/hlthaff.27.1.203>

Iezzoni, L. I., McKee, M. M., Meade, M. A., Morris, M. A., & Pendo, E. (2022). Have Almost

Fifty Years Of Disability Civil Rights Laws Achieved Equitable Care? *Health Affairs*, 41(10), 1371–1378. <https://doi.org/10.1377/hlthaff.2022.00413>

Iezzoni, L. I., & Pendo, E. (2018). Accessibility of Medical Diagnostic Equipment—Implications for People with Disability. *New England Journal of Medicine*, 378(15), 1371–1373.

<https://doi.org/10.1056/NEJMp1800606>

Iezzoni, L. I., Rao, S. R., Ressler, J., Bolcic-Jankovic, D., Agaronnik, N. D., Donelan, K., Lagu, T., & Campbell, E. G. (2021). Physicians’ Perceptions Of People With Disability And Their Health Care. *Health Affairs*, 40(2), 297–306.

<https://doi.org/10.1377/hlthaff.2020.01452>

Iezzoni, L. I., Rao, S. R., Ressler, J., Bolcic-Jankovic, D., Agaronnik, N. D., Lagu, T., Pendo, E., & Campbell, E. G. (2022). US Physicians’ Knowledge About The Americans With Disabilities Act And Accommodation Of Patients With Disability. *Health Affairs*, 41(1), 96–104. <https://doi.org/10.1377/hlthaff.2021.01136>



- Iezzoni, L. I., Rao, S. R., Ressalam, J., Bolcic-Jankovic, D., Donelan, K., Agaronnik, N., Lagu, T., & Campbell, E. G. (2021). Use of Accessible Weight Scales and Examination Tables/Chairs for Patients with Significant Mobility Limitations by Physicians Nationwide. *The Joint Commission Journal on Quality and Patient Safety*, 47(10), 615–626. <https://doi.org/10.1016/j.jcjq.2021.06.005>
- Iezzoni, L. I., & Stein, M. A. (2024). New Rules Requiring Accessible Medical Diagnostic Equipment—Updates to Section 504 Disability Civil Rights Regulations. *JAMA*, 332(8), 617–618. <https://doi.org/10.1001/jama.2024.10984>
- Lagu, T., Hannon, N. S., Rothberg, M. B., Wells, A. S., Green, K. L., Windom, M. O., Dempsey, K. R., Pekow, P. S., Avrunin, J. S., Chen, A., & Lindenauer, P. K. (2013). Access to Subspecialty Care for Patients With Mobility Impairment. *Annals of Internal Medicine*, 158(6), 441–446. <https://doi.org/10.7326/0003-4819-158-6-201303190-00003>
- Lagu, T., Haywood, C., Reimold, K., DeJong, C., Walker Sterling, R., & Iezzoni, L. I. (2022). ‘I Am Not The Doctor For You’: Physicians’ Attitudes About Caring For People With Disabilities. *Health Affairs*, 41(10), 1387–1395. <https://doi.org/10.1377/hlthaff.2022.00475>
- Lagu, T., Iezzoni, L. I., & Lindenauer, P. K. (2014). The Axes of Access—Improving Care for Patients with Disabilities. *New England Journal of Medicine*, 370(19), 1847–1851. <https://doi.org/10.1056/NEJMs1315940>
- Latour, B. (1992). Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts. In W. Bijker & J. Law, *Shaping Technology / Building Society: Studies in Sociotechnical Change* (pp. 225–258). MIT Press.

Mayerson, A. (2017, October 17). *The History of the Americans with Disabilities Act*. DREDF.

<https://dredf.org/the-history-of-the-americans-with-disabilities-act/>

Mitra, M., Long-Bellil, L., Moura, I., Miles, A., & Kaye, H. S. (2022). Advancing Health Equity And Reducing Health Disparities For People With Disabilities In The United States.

*Health Affairs*, 41(10), 1379–1386. <https://doi.org/10.1377/hlthaff.2022.00499>

Morris, M. A., Maragh-Bass, A. C., Griffin, J. M., Finney Rutten, L. J., Lagu, T., & Phelan, S.

(2017). Use of Accessible Examination Tables in the Primary Care Setting: A Survey of Physical Evaluations and Patient Attitudes. *Journal of General Internal Medicine*, 32(12), 1342–1348. <https://doi.org/10.1007/s11606-017-4155-2>

NCD. (2021). *Enforceable Accessible Medical Equipment Standards: A Necessary Means to Address the Health Care Needs of People with Mobility Disabilities*. National Council on Disability.

[https://www.ncd.gov/assets/uploads/reports/ncd\\_medical\\_equipment\\_report\\_508.pdf](https://www.ncd.gov/assets/uploads/reports/ncd_medical_equipment_report_508.pdf)

Nondiscrimination on the Basis of Disability by State and Local Governments, Etc.: Equipment and Furniture, Department of Justice, 28 C.F.R. pts. 35, 36 (2010).

<https://www.govinfo.gov/content/pkg/FR-2010-07-26/pdf/2010-18331.pdf>

Rights (OCR), O. for C. (2016, August 25). *Section 1557: Ensuring Effective Communication with and Accessibility for Individuals with Disabilities* [Page]. <https://www.hhs.gov/civil-rights/for-individuals/section-1557/fs-disability/index.html>

Ritter® 204 Manual Examination Table. (n.d.). [Graphic]. Retrieved April 7, 2025, from

<https://www.midmark.com/medical/products/manual-examination-tables/detail/ritter-204-examination-table>

Section 504 is Under Attack. (2025, February 14). *New Mobility*.

<https://newmobility.com/section-504-is-under-attack/>

Singer, R., & Dickman, A. R. (2017). *Increasing the Physical Accessibility of Health Care Facilities* [Issue Brief]. CMS Office of Minority Health.

<https://www.cms.gov/sites/default/files/repo-new/23/Issue-Brief-Increasing-the-Physical-Accessibility-of-Health-Care-Facilities.pdf>

Standards for Accessible Medical Diagnostic Equipment, Architectural and Transportation

Barriers Compliance Board, 36 CFR Part 1195 (2017). <https://www.access-board.gov/mde/preamble/>

Swanson, D. (2018, January 10). How Medical and Nursing Schools are Teaching Bedside

Manner Today [Daily Nurse]. *Daily Nurse*. <https://www.dailynurse.com/medical-nursing-schools-teaching-bedside-manner-today/>, <https://www.dailynurse.com/medical-nursing-schools-teaching-bedside-manner-today/>

Weil, A. R. (2022). Disability And Health. *Health Affairs*, 41(10), 1365–1365.

<https://doi.org/10.1377/hlthaff.2022.01200>

Wen, L. S. (2014). A Simple Case Of Chest Pain: Sensitizing Doctors To Patients With

Disabilities. *Health Affairs*, 33(10), 1868–1871. <https://doi.org/10.1377/hlthaff.2013.1371>

Wesley, M. B., & Raizman, D. (2024, November 12). Justice Department Rule on Accessible

Medical Diagnostic Equipment Carries Broad Implications for Healthcare Industry.

*Ogletree*. <https://ogletree.com/insights-resources/blog-posts/justice-department-rule-on-accessible-medical-diagnostic-equipment-carries-broad-implications-for-healthcare-industry/>

Yourish, K., Daniel, A., Datar, S., White, I., & Gamio, L. (2025, March 7). These Words Are Disappearing in the New Trump Administration. *The New York Times*.

<https://www.nytimes.com/interactive/2025/03/07/us/trump-federal-agencies-websites-words-dei.html>