DEPARTMENT OF HEALTH AND HUMAN SERVICES

Office for Civil Rights

Section 504 of the Rehabilitation Act of 1973 Final Rule

45 CFR Part 84

RIN: 0945-AA15

Regulatory Impact Analysis

1. Background

a. Statement of need.

In this final rule, the Department revises its existing section 504 regulation on nondiscrimination obligations for entities that receive Federal financial assistance from the Department (recipients). More than 40 years have passed since the Department originally issued regulations implementing section 504, with only limited changes in the decades since. During that time, major legislative and judicial developments have shifted the legal landscape of disability discrimination protections under section 504. These developments include statutory amendments to the Rehabilitation Act, the enactment of the Americans with Disabilities Act (ADA), the ADA Amendments Act of 2008, the Affordable Care Act, and Supreme Court and other significant court cases. This final rule ensures that section 504 is updated and interpreted

consistently with these developments and overlapping laws in order to bring the regulations into conformity with current law and to protect against discrimination on the basis of disability.

b. Public comments.

Comment: OCR did not receive any comments providing detailed, relevant feedback about the data and methodologies the proposed RIA adopted to quantify costs and benefits. Several commenters argued the Department failed to adequately estimate the costs of the integration provision as proposed in the Regulatory Impact Analysis. Further, some State officials worried about the impact that the integration provision, specifically the codification of the "at serious risk of institutionalization" principle, would have on States.

In addition, the Department received conflicting comments concerning the costs and challenges that small recipients would face in order to comply with the proposed rule. Although some commenters believe that recipients with fewer than fifteen employees have budgets that will be significantly constrained by requirements to make the web content and mobile apps they use compliant with WCAG 2.1 and suggest that small recipients should be held to a less demanding standard than larger (and thus more sophisticated) recipients, other commenters state that small recipients do not face insurmountable costs because advances in technology and the services offered to make web content accessible have made compliance much more attainable for even the smallest recipient.

Response: As explained in the final rule's preamble discussion of the integration provision at § 84.76, application of the integration mandate's protection to individuals "at serious risk of institutionalization" in the absence of community-based services is a well-established

principle. That is, the final rule does not create new obligations for State and local governments, or other recipients of Federal financial assistance, but instead explicates longstanding requirements in the existing section 504 regulations that prohibit recipients from providing services to qualified persons with disabilities in a manner that does not provide equal opportunities for such persons to gain the same benefits. Given the existing recipient integration obligations under section 504 and the same preexisting integration obligations under title II for public entities, the final rule's integration provision places no additional costs on recipients.

With respect to the compliance burdens faced by small recipients in making the web content and mobile apps they use compliant with WCAG 2.1, the Department believes that the final rule strikes the appropriate balance by requiring small recipients to comply with the same technical standard as larger recipients while giving small recipients additional time to do so. Furthermore, the final rule includes exceptions meant to ease the burden on small recipients and does not require recipients to take any action that would result in a fundamental alteration in the nature of a program or activity or cause the recipients to incur undue financial and administrative burdens. As noted by some State officials, OCR quantified other costs and benefits through "substantive analysis." This final RIA finalizes the quantification of costs and benefits contained in the proposed RIA, and now reports costs and benefits in 2022 dollars (instead of 2021 dollars).

Subpart I monetized costs and benefits in this final RIA (and hence total costs and benefits) differ from those reported in the preliminary RIA because monetized benefits and costs estimates in DOJ's final web accessibility RIA have changed. As the dollar figures from DOJ's final web accessibility RIA are used in part to calculate costs and benefits in this RIA, Subpart I

monetized costs and benefits in this RIA (output of the calculations) have changed, as documented in detail below.

c. Overall impact.

We have examined the impacts of the final rule under Executive Order (E.O.) 12866, as amended by E.O. 14094; E.O. 13563; the Regulatory Flexibility Act (5 U.S.C. 601–612); the Small Business Regulatory Enforcement Fairness Act (also known as the Congressional Review Act, 5 U.S.C. 801 et seq.); and the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4). E.O. 12866 and E.O. 13563 direct us to assess all costs and benefits of available regulatory alternatives and, when regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity). This final rule is a significant regulatory action under section 3(f)(1) of E.O. 12866, as amended by Executive Order 14094. Pursuant to Subtitle E of the Small Business Regulatory Enforcement Fairness Act of 1996 (also known as the Congressional Review Act, 5 U.S.C. 801 et seq.), OMB's Office of Information and Regulatory Affairs has determined that this final rule does meet the criteria set forth in 5 U.S.C. 804(2).

The Regulatory Flexibility Act requires us to analyze regulatory options that would minimize any significant impact of a rule on small entities. The Department deems that a final rule has a significant economic impact on a substantial number of small entities whenever the

rule generates a change in revenues of more than 3% for at least 5% of small recipients.[1] Here, OCR has concluded that the costs of the final rule are small relative to the revenue of recipients, including covered small entities. OCR has concluded that even the smallest affected entities are unlikely to face a significant impact. We therefore certify that the final rule will not have a significant economic impact on a substantial number of small entities.

The U.S. Small Business Administration (SBA) maintains a Table of Small Business Size Standards Matched to North American Industry Classification System (NAICS) Codes.[2] In our analysis, we used 2019 firm counts (*see* Table 12 below). For consistency, we used SBA yearly

[1] "HHS uses as its measure of significant economic impact on a substantial number of small entities a

[2] The most current version became effective on October 1, 2022. *See* U.S. Small Bus. Admin., Table of Size Standards (last updated Oct. 1, 2022), https://www.sba.gov/document/support-table-size-standards. In our analyses, which use 2019 data, we used the version effective in the 2019 calendar year. We note that the distribution of covered entities by size—namely, the fraction of covered entities that are small by SBA standards—did not change in any meaningful way in the past decades.

revenues thresholds for 2019, which for recipients ranged between $8 million[3] and $41.5 million.[4]

As reported below in this Regulatory Impact Analysis (RIA), 97.4% of all firms in the Health Care and Social Assistance sector (NAICS 62) are small. With the exception of Hospitals (Subsector 622), at least 9 out of 10 of all recipients within each Health Care and Social Assistance NAICS code are small. Most firms — 98.3% — in the Pharmacies and Drug Stores (NAICS 446110) group are small as well. About 60% of Direct Health and Medical Insurance Carriers (NAICS 524114) are small. About 60% of Colleges, Universities, and Professional Schools (NAICS 611310) are small. Hence, almost all non-government recipients (i.e., private firms) under the scope of the final rule are small businesses.

Moreover, the fraction of total small firms in each NAICS code that falls in the smallest size group (fewer than 5 employees) is greater than 5% for all relevant NAICS.

As a consequence, it is sufficient to investigate the impact of the final rule on the average recipient in the smallest size group to determine whether the final rule may generate a change in

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[3] A 2019 yearly revenue threshold of $8 million applied to several NAICS codes, including 621340, Offices of Physical, Occupational and Speech Therapists and Audiologists, and 624410, Child Day Care Services. Higher yearly revenue thresholds applied for three NAICS codes: 621340, Offices of Physical, Occupational and Speech Therapists and Audiologists (to $11 million); 621399, Offices of All Other Miscellaneous Health Practitioners (to $ 9 million); and 624410, Child Day Care Services (to 8.5 million).

[4] The $41.5 million yearly 2019 revenue threshold applies to Hospitals (NAICS 622), Direct Health and Medical Insurance Carriers (NAICS 524114) and Kidney Dialysis Centers (NAICS 621492). These thresholds have not changed in SBA's October 1, 2022 update. The $41.5 million yearly revenue threshold remains the highest value for recipients considered in our analyses.

revenues of more than 3%. We need to determine whether the average firm in the smallest size group will experience a reduction in net revenues greater than 3%.

We base our conclusion that firms in the smallest groups will not experience a 3% reduction in revenues on several factors: With the exception of a handful of HMO Medical Centers (NAICS 621491) and about 24,500 Child Day Care Services (NAICS 624410) firms, the yearly average revenue (in 2022 dollars) for a recipient belonging to the smallest size group — for each 6-digit NAICS code considered separately — is $190,000 or more. Three percent of this sum is about $5,700 (2022 dollars), which, based on our review of data on prices for medical diagnostic equipment (MDE) as well as incremental costs for ensuring qualified staff, we deem is an amount sufficient to finance purchase of the limited set of inexpensive MDE the smallest entities typically need as well as to ensure qualified staff.

Considering the smallest recipient groups among each of the 6-digit NAICS groups that private recipients belong to, the typical yearly average revenue is about $354,000. That represents the median of average revenues across all relevant 6-digit NAICS codes. Podiatrists' offices' average yearly revenue is at the median, but general hospitals have the highest average yearly revenue among the relevant NAICS codes at $20 million, and Child Day Care Services have the lowest average yearly revenue among the relevant NAICS codes at $116,000. Thus, in many cases the 3% revenue threshold is about $10,000. Costs of the final rule are mostly proportional to the size of the recipient, and typical recipients in the smallest size group (fewer than 5 employees) are not expected to incur $10,000 incremental costs.

In addition, we estimate that the obligation to ensure that web content and mobile applications for the Department's recipients that are small providers will be less than 3% of their revenues. We note that the vast majority of the Department's recipients are small providers and estimate that most of these small providers (approximately 85.9%) have websites. The websites of these small providers are typically one domain with up to a few thousand pages and limited visitors per month. The Department estimates that for a cost of approximately $440 per year[5] these recipients will be able to ensure that their websites can be made accessible and kept accessible each year.

We also note that the phase-in time periods for compliance with the Department's final rule provide additional time for the small recipients to plan and fund their expenses. Small entities that use medical equipment in their practice will have two years to purchase or lease accessible medical examination tables or weight scales, for instance, and small entities that have websites or use mobile apps in their practice will have three years to make them accessible and then small annual expenses to keep them accessible.

Finally, the final rule includes exemptions meant to ease burdens on small firms, including when incremental compliance costs result in an undue financial burden, and it permits

[5] The $440 per year estimate is based on an average of prices that competing web accessibility IT service providers quote on their websites for small clients (typically, those clients with one domain, up to a few thousand pages on their websites, and no more than a few hundred thousand visitors per month).

small firms to meet accessibility requirements via alternative, inexpensive methods (like reassignment of services to alternate accessible locations or home visits for MDE requirements).

Consequently, we certify that the final rule will not have a significant economic impact on a substantial number of small entities.

The Unfunded Mandates Reform Act of 1995 (Section 202(a)) generally requires the Department to prepare a written statement, which includes an assessment of anticipated costs and benefits, before proposing "any rule that includes any Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more (adjusted annually for inflation) in any one year." This final rule is not subject to the Unfunded Mandates Reform Act because it falls under an exception for regulations that establish or enforce any statutory rights that prohibit discrimination on the basis of race, color, religion, sex, national origin, age, handicap, or disability.[6]

The Congressional Review Act (CRA) defines a "major rule" as "any rule that the Administrator of the Office of Information and Regulatory Affairs (OIRA) of the Office of Management and Budget finds has resulted in or is likely to result in—(A) "an annual effect on the economy of $100,000,000 or more"; (B) "a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions"; or (C) "significant adverse effects on competition, employment, investment, productivity,

[6] 2 U.S.C. 1503(2).

innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic and export markets." 5 U.S.C. 804(2). OMB's Office of Information and Regulatory Affairs has determined that this final rule does meet the criteria set forth in 5 U.S.C. 804(2). The Department will comply with the CRA's requirements to inform Congress.

The Background and Overview of the Final Rule sections at the beginning of the final rule's preamble contain a summary of this final rule and describe the reasons it is needed. More information can also be found in the NPRM preamble, particularly under "Reasons for the Final Rule."

d. Summary of Costs and Benefits.

Section 504 has applied to medical care providers that receive Federal financial assistance from the Department for fifty years. The Department issued regulatory language detailing specific requirements for health care providers in 1977.[7] The health care sector in the United States is quite broad, encompassing about 490,000 providers of ambulatory health care services and 3,044 hospitals. It includes 168,459 offices of physicians, 124,384 offices of dentists, 141,853 offices of other health care practitioners, 7,192 medical and diagnostic laboratories, 24,619 home health care service providers, and 19,625 outpatient care centers. Not

[7] For example, all recipients have been required to construct new facilities and alter existing facilities in an accessible manner, make changes to ensure program accessibility, provide alternate means of communication for persons who are blind, deaf, have low vision, or are hard of hearing (e.g., sign language interpreters, materials in Braille or on tape). They are prohibited from denying or limiting access to their health care programs or from otherwise discriminating against qualified persons with a disability in their health care programs or activities.

all of these entities receive Federal financial assistance, but most do. For example, the Department estimates that approximately 92% of doctors, 43% of dentists, and all hospitals receive Federal financial assistance from the Department and are thus subject to section 504. The Department's section 504 final rule applies to this universe of recipients, updating the Department's original regulation and adding new provisions in several areas. This section 504 final rule does not apply to health care programs and activities of the Federal Government itself. Those programs and activities are covered by Part 85 of section 504, which covers federally conducted (as opposed to federally assisted) programs or activities.[8] While a majority of the estimated costs associated with this final rule concern health care providers, the final rule covers all recipients of HHS funding.

This analysis considers the various sections of the final rule and quantifies several categories of costs that we anticipate recipients may incur.

First, we consider costs associated with new provisions that we expect will result in the greatest costs to recipients under this final rule. Provisions concerning web, mobile, and kiosk accessibility under subpart I include costs pertaining to testing, remediating, and operating accessible websites, mobile applications (apps), kiosks, as well as school course remediation costs.

[8] 45 CFR 85.

Second, we consider costs associated with provisions concerning accessible medical diagnostic equipment (MDE) under subpart J. These costs include costs pertaining to acquiring new MDE and ensuring staff are able to successfully operate accessible MDE.

Next, we consider costs associated with new provisions that we expect will have limited costs for recipients, including § 84.56 on medical treatment, § 84.57 on value assessment methods, and § 84.60 on child welfare. These costs include limited revisions to policies and procedures and training for employees on the new provisions that largely restate existing obligations and explicitly apply them to specific areas of health and human services.

Finally, we consider the provisions of the final rule that ensure the regulation is consistent with the ADA and ADA Amendments Act, statutory amendments to the Rehabilitation Act, the ACA, and Supreme Court and other significant court cases, while updating outdated terminology and deleting regulatory provisions no longer relevant to recipients of the Department's funding. Because the substance of these "consistency" provisions already applies to almost all of the Department's recipients, these provisions will likely result in no additional costs to recipients.

We conclude that the final rule results in annualized costs of $1,302.1 million or $1,326.1 million ($778.4 million or $776.4 million, if limited to costs that do not overlap with DOJ's final web accessibility rule under title II of the ADA), corresponding to a 3% or a 7% discount rate. We separately report a full range of cost estimates of about $1,047.5 million to $1,765.6 million at a 3% discount rate, and a full range of cost estimates of about $1,072.9 million to $1,798.8 million at a 7% discount rate.

We quantify benefits from web, mobile, and kiosk accessibility and accessible school courses. These benefits come from time savings and better education outcomes for both people with disabilities and people without disabilities. We conclude that the final rule yields benefits of $1,311.8 million/year at a 3% discount rate or $1,265.6 million/year at a 7% discount rate ($84.0 million or $77.4 million, if limited to benefits that do not overlap with DOJ's web accessibility final rule).

This analysis also quantifies benefits people with disabilities are expected to receive thanks to higher percentages of accessible MDE yielding improved health outcomes at recipients' locations. We conclude that the final rule yields $145.5 million/year in cancer-associated benefits. We separately report a range of quantifiable cancer-associated benefit estimates of $97.0 million to $193.9 million per year.

Total quantified benefits from subpart I and subpart J provisions are thus estimated to exceed corresponding costs. Total annualized benefits are estimated to be $1,457.3 million at a 3% discount rate and $1,411.1 million at a 7% discount rate ($229.4 million or $222.8 million, if limited to benefits that do not overlap with DOJ's web accessibility final rule).

We believe that, in addition to these quantifiable benefits, there will be significant unquantifiable benefits from this final rule. Examples include, the benefits realized from: successful drug dosing for persons with disabilities who will now be able to be weighed and given proper non-cancer drug regimens due to accessible weight scales; expectant parents being able to quickly receive the results of a prenatal blood test through an accessible mobile app or

patient portal and adjust behavior accordingly; and patients with disabilities being able to schedule vaccine appointments electronically to avoid preventable illnesses.

A number of commenters provided input on their experiences and the types of barriers they encounter in trying to access health care. For example, a commenter who identified as having a disability described obstacles encountered when seeking access to health care, including multiple refusals by hospitals to provide an interpreter or to allow the person's own interpreter to accompany them, including for a two-week stay following major surgery, impeding access to food, proper medication, and the ability to communicate with hospital staff. Another commenter described the specific obstacles she encountered when seeking health care, including an inaccessible scale and exam table, and being unable to access gynecological care based on her disability. Another commenter described feeling humiliation when seeking medical care. Another commenter, who self-identified as a "disabled minor," described worrying every day about how to lead a safe, happy, and healthy life in a world that is so often hostile to people like them, and urged codification of these regulations so that their rights would be protected.

Public commenters who identified as individuals with disabilities stressed that they encountered a sense of diminished social standing when seeking medical care. One commenter described their unwillingness to notify health care providers of their disability, concerned that they would be treated differently, and their care would be deprioritized. Another commenter, a chronically ill scientist, stressed the benefits that protections against discrimination would have on their access to health services because he could have honest conversations with his doctor while knowing that he is being protected from medical discrimination. As discussed in specific

detail in the provision on accessible web content, this rule will result in substantial health benefits for people with disabilities who otherwise would not be able to access recipient programs and activities or would experience limited access to recipient programs and activities.

In addition to the unquantified benefits, various costs have not been quantified, including transition costs associated with § 84.57 (Value Assessment Methods) and costs of increasing compliance with existing non-discrimination requirements that are reaffirmed by § 84.60 (Child Welfare). Unquantified effects also include the shift in longer and more productive lives to persons with disabilities who will no longer be denied organ transplants for which they are eligible from the individuals who would receive those organs in the absence of this final rule.

Summary Table A. All Costs and Benefits of the Final Rule

Benefit type	Total annualized costs in 2022 dollars (millions)	Total annualized benefits in 2022 dollars (millions)
Lower bound at a 3% discount rate	1,047.5	1,401.2
Base estimate at a 3% discount rate	**1,302.1**	**1,457.3**
Upper bound at a 3% discount rate	1,765.6	1,590.3
Lower bound 7% discount rate	1,072.9	1,355.2
Base estimate 7% discount rate	**1,326.1**	**1,411.1**
Upper bound 7% discount rate	1,798.8	1,541.8

Note: Some effects of this rule overlap with DOJ's final rule under title II of the ADA. See Summary Table C for quantified overlapping costs and benefits.

Summary Table B. ANNUALIZED VALUE OF MONETIZED BASE COSTS AND BENEFITS

[In 2022 dollars (millions)]

Section/Subpart	Costs, 7 % discount rate	Costs, 3 % discount rate	Benefits, 7 % discount rate	Benefits 3 % discount rate
Subpart I: Information and Communication Technology, Web and Mobile Accessibility	934.7	916.9	1,265.6	1,311.8
Subpart J – Accessible Medical Equipment	377.4	371.6	145.5	145.5
§ 84.56– Medical Treatment	14.0	13.6	unquantified	unquantified
§ 84.57 – Value Assessment Methods	0.1	0.1	unquantified	unquantified
§ 84.60 – Child Welfare	0.1	0.1	unquantified	unquantified
TOTAL	**1,326.1**	**1,302.1**	**1,411.1**	**1,457.3**

Notes: Totals may not sum due to rounding. Some effects of this rule overlap with the effects of DOJ's final rule under title II of the ADA; see Summary Table C for quantified overlapping costs and benefits.

Regarding *Subpart I – Web, mobile, and kiosk accessibility*, there is overlap in the recipients covered by this final rule (i.e., recipients of HHS funds) and entities subject to DOJ's recent final rule on accessibility of Web information and services of State and local government entities under title II of the ADA.[9] Overlaps occur when recipients of HHS funds are also public entities under title II.

The table above reports subpart I costs and benefits including overlapping entities (recipients that are also public entities). The table below reports subpart I costs and benefits for recipients excluding those recipients that are also public entities under title II (row 2). In Section 2, the Department calculates costs for all recipient (including overlaps) and provides details (in

[9] Proposed rule available at 88 FR 51948 (Aug. 4, 2023).

footnotes) on how overlapping costs and benefits that are excluded in the table below are calculated for each type of recipient.

Summary Table C. Annualized value of monetized base costs and benefits excluding those associated with recipients that are public entities covered by DOJ Title II Web accessibility final rule in 2022 dollars (millions)

Subpart I costs and benefits	Costs, 7 % discount rate	Costs, 3 % discount rate	Benefits, 7 % discount rate	Benefits 3 % discount rate
(1) All recipients	**934.7**	**916.9**	**1,265.6**	**1,311.8**
(2) Excluding recipients that are also public entities under title II	384.9	393.2	77.4	84.0

Because of a lack of available data, our analysis is static, meaning that it is a snapshot based on the most current information and not based on trends. Trends cannot be reliably measured due to the required information being either not available across different periods or, when available, not comparable because collection methodologies are different across periods. In addition to these quantified cost estimates, the analyses include discussions of costs that we do not quantify, and discussions of the potential benefits under the rule (such discussions are both qualitative and quantitative). Generally, we anticipate that the final rule will result in a myriad of benefits for individuals with disabilities as a result of greater access to necessary health and human service programs and activities.[10]

[10] Because of extensive distortions in the provision of health care and other services relevant to this final rule, markets cannot necessarily yield optimal outcomes, thus creating the potential for positive net benefits due to government intervention.

2. Subpart I – Web, mobile, and kiosk accessibility.

a. Introduction.

The Department is adding a subpart that requires recipients to ensure that web content, mobile content, and kiosks that recipients provide or make available, directly or through contractual, licensing, or other arrangements, are readily accessible to and usable by individuals with disabilities. The subpart sets forth technical standards for ensuring web and mobile app accessibility. Web content, as defined in § 84.10, means the information and sensory experience to be communicated to the user by means of a user agent, including code or markup that defines the content's structure, presentation, and interactions. This includes text, images, sounds, videos, controls, animations, and conventional electronic documents. The Department adopts an internationally recognized accessibility standard for web access, the Web Content Accessibility Guidelines (WCAG) 2.1,[11] as the technical standard for website and mobile app accessibility under section 504. The Department requires that recipients comply with the WCAG 2.1 Level AA success criteria and conformance requirements. The applicable technical standard will be referred to hereinafter as "WCAG 2.1." The applicable conformance level will be referred to hereinafter as "Level AA."

The final rules extend to recipients the technical requirements that DOJ is issuing in its final rule, *Nondiscrimination on the Basis of Disability; Accessibility of Web Information and*

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[11] *See* W3C, *Web Content Accessibility Guidelines 2.1* (June 5, 2018), https://www.w3.org/TR/2018/REC-WCAG21-20180605/ and https://perma.cc/UB8A-GG2F.

Services of State and Local Government Entities (hereinafter, "DOJ Web Accessibility final rule"), revising the regulation implementing title II of the ADA to establish specific requirements, including the adoption of specific technical standards, for making accessible the services, programs, and activities offered by State and local government entities to the public through web content and mobile applications.[12]

Under the final rule, a recipient with 15 or more employees must ensure the web content and mobile apps it provides or makes available, directly or through contractual, licensing, or other arrangements, comply with WCAG 2.1 Level AA success criteria and conformance requirements within two years after the publication of the final rule. A recipient with fewer than 15 employees has three years to comply with these requirements.

The DOJ Web Accessibility final rule contains a Regulatory Impact Analysis ("DOJ Final RIA") to estimate the potential costs and benefits associated with the technical requirements for public entities.[13]

In what follows, we estimate the final rule's costs and benefits for recipients by adopting the DOJ Web Accessibility final rule methodology and results to the maximum extent possible.

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[12] Proposed rule available at 88 FR 51948 (Aug. 4, 2023).
[13] DOJ calculated a variety of estimated costs, including: (1) one-time costs for familiarization with the requirements of the rule; (2) testing, remediation, and operating and maintenance (O&M) costs for websites (including costs of third-party websites that provide services on behalf of public entities); (3) testing, remediation, and O&M costs for mobile apps; and (4) school course remediation costs. The remediation costs include both time and software components.

Annualized costs and benefits are calculated over a 10-year period that includes both the three-year implementation period and the seven years post-implementation, as the DOJ Web Accessibility final rule does.

The Department has relied on the analyses and detailed calculations contained in DOJ's Final RIA.[14] We also include a summary of DOJ's analyses and calculations below.

As several recipients are also public entities (PEs) — for instance, county hospitals or State colleges — the chosen approach enhances consistency between the Department's Web, Mobile, and Kiosk Accessibility Regulatory Impact Analysis and DOJ's Final RIA.

Quantified costs and benefits for recipients include both those for *recipients that are not PEs* (e.g., a private hospital) and for *recipients who are also PEs*; these latter recipients are a subset of those reported in the DOJ Final RIA since PEs in the DOJ Final RIA may not be recipients.

Recipients are assigned to one of five groups based on the North American Industry Classification System (NAICS), listed below in ascending NAICS code order:[15]

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[14] U.S. Dep't of Justice, Title II Web and Mobile App Access FRIA 04-08-2024, https://www.ada.gov/assets/pdfs/web-fria.pdf.

[15] NAICS is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. *See* U.S. Census Bureau, Introduction to NAICS, https://www.census.gov/naics/ (last visited Feb 7, 2024).

1. Pharmacies and Drug Stores (NAICS 45611);[16]
2. Direct Health and Medical Insurance Carriers (524114);
3. Postsecondary, secondary and elementary education institutions (belonging to NAICS Sector 61, Education);
4. Providers of Health Care and Social Assistance (Sector 62), such as hospitals, nursing homes, doctors' offices, and several other types of establishments; and
5. State and local governments (belonging to Sector 92, Public Administration).

For both costs and benefits, we present analyses and results separately for each of the five groups starting from those for which the DOJ Web Accessibility final rule can be most readily and easily extended to recipients; that is recipients in Sector 61 (Education), 92 (Public Administration) and 62 (Health Care and Social Assistance). Analyses for Pharmacies and Drug Stores and Direct Health and Medical Insurance Carriers are presented next.

b. DOJ's methodologies and results from their title II Web Access Final RIA

DOJ states that requiring State and local government websites and mobile apps to comply with WCAG 2.1 Level AA will result in costs for State and local government entities to remediate and maintain their websites and mobile apps to meet the WCAG 2.1 Level AA success

[16] The operation of a pharmacy may not be the recipient's primary activity (for instance, a recipient hospital may operate a pharmacy). This group consists of recipients who are primarily engaged in retailing prescription or nonprescription drugs and medicines ("standalone pharmacies").

criteria. Recipient websites and mobile apps will incur similar costs to remediate and maintain their websites and mobile apps.

DOJ estimates that a total number of 109,893 State and local government websites and 8,805 State and local government mobile apps will be affected by the rule. These websites and mobile apps provide services on behalf of and are managed by 91,489 State and local governments that will incur these costs. These costs include one-time costs for familiarization with the requirements of the rule; testing, remediation, and operating and maintenance (O&M) costs for websites; testing, remediation, and O&M costs for mobile apps; and school course remediation costs. The remediation costs include both time and software components. Initial familiarization, testing, and remediation costs of the final rule occur over the first two or three years (two years for large public entities and three years for small public entities).

Using our own analyses of public data, we estimate that a total number of 453,084 recipients will be affected by this rule and incur initial familiarization, testing, and remediation costs of the final rule over the first two or three years (two years for large recipients and three years for small recipients).

DOJ combines initial and recurring costs and calculates annualized costs over the 10-year time horizon. Annualized costs over this 10-year period are estimated at $3.3 billion assuming a 3 percent discount rate or $3.5 billion assuming a 7 percent discount rate. This includes $17.0 billion in implementation costs accruing during the first three years (the implementation period), undiscounted, and $2.0 billion in annual O&M costs during the next seven years. All values are presented in 2022 dollars.

Under our final RIA, annualized costs for recipients are estimated at $934.7 million assuming a 7 percent discount rate and $916.9 million assuming a 3% discount rate.

DOJ concludes that benefits will generally accrue to all individuals who access State and local government websites and mobile apps, and additional benefits will accrue to individuals with certain types of disabilities. The WCAG 2.1 Level AA standards for website and mobile app accessibility primarily benefit individuals with vision, hearing, cognitive, and/or manual dexterity disabilities because accessibility standards are intended to address barriers that often impede access for people with these disability types. Using the U.S. Census Bureau's Survey of Income and Program Participation (SIPP) 2022 data, DOJ estimates that 5.5 percent of adults have a vision disability, 7.6 percent have a hearing disability, 11.3 percent have a cognitive disability, and 5.8 percent have a manual dexterity disability. Due to the incidence of multiple disabilities, the total share with at least one of these disabilities is 21.3 percent.

DOJ monetized benefits for both people with these disabilities and people without disabilities, based on a benefits literature review. In this final RIA, we assume the same proportions of individuals with and without disabilities will benefit from accessible recipient websites and mobile apps as DOJ estimated in the DOJ Final RIA.

DOJ quantifies benefits from time savings for current users of State and local government websites via a 5-step approach: 1) gather website traffic data; 2) determine the share of website visits conducted by each group of individuals; 3) determine the amount of time spent on a

website for each group of individuals; 4) determine the amount of time saved; and 5) monetize the time savings using an hourly rate.[17]

Under its preliminary RIA, DOJ quantified time savings for new users of State and local government websites, and cost savings to governments from reduced contacts. Total benefits also included separately quantified time savings to mobile app users. In its final RIA, DOJ notes that it now excludes quantified benefits from new users of government websites from its estimate of monetized benefits because, "although significant" (about $1.7 billion after full implementation of the rule), DOJ was "unable to quantify these benefits with appropriate certainty." These significant benefits from accessible government websites were included as an input in our Preliminary RIA calculations. In this final RIA, we follow DOJ's approach, and we remove these benefits from the inputs we use (i.e., assign them a monetized benefit equal to $0), which results in a significant reduction of quantified benefits as compared to our Preliminary RIA.

As for benefits associated with accessible web-based education materials, DOJ quantified benefits from time savings for higher-education students; time savings for elementary and secondary school students and parents; and benefits of greater educational attainment in the form of higher earnings. In its final RIA, DOJ noted that it now excludes quantified benefits from time savings associated with accessible web-based education materials from its estimate of monetized

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[17] *See* U.S. Dep't of Justice, Title II Web and Mobile App Access FRIA 04-08-2024, 124-29, https://www.ada.gov/assets/pdfs/web-fria.pdf.

benefits because, “although significant” (about $5.4 billion after full implementation of the rule), they were “unable to quantify these benefits with appropriate certainty.” These significant educational time benefits were included as an input in our Preliminary RIA calculations. In this final RIA, we follow the DOJ’s approach, and we remove these benefits from the inputs we use (i.e., assign them a monetized benefit equal to $0), which results in a significant reduction of quantified benefits as compared to our Preliminary RIA.

DOJ estimates annual benefits, beginning once the title II Web Access rule is fully implemented, total $5.2822billion. Because individuals generally prefer benefits received sooner, future benefits need to be discounted to reflect the lower value due to the wait to receive them. OMB guidance states that annualized benefits and costs should be presented using real discount rates of 3 and 7 percent. Benefits annualized over a 10-year period that includes both three years of implementation and seven years post-implementation total $5.2295 billion per year, assuming a 3 percent discount rate, and $5.0292 billion per year, assuming a 7 percent discount rate.

We use the same methodology for benefits associated with time savings from accessible recipient websites and mobile apps in this final RIA and estimate an annual benefit of $1,311.8 million per year assuming a 3% discount rate and $1,265.6 million per year assuming a 7% discount rate (2022 dollars).

Comparing annualized costs and benefits, monetized benefits to society outweigh the costs.

c. Cost-Benefit analysis.

i. Postsecondary institutions and elementary and secondary schools.

In a recent Final Rule — Protecting Statutory Conscience Rights in Health Care; Delegations of Authority, 84 FR 23170 (May 5, 2019) — the Department estimated that 12.86% of all postsecondary institutions (i.e., regardless of whether they are PEs or not) are recipients. We used the same methodology applied to postsecondary institutions to calculate the 12.86% figure above to estimate that about 1% of secondary and elementary education institutions are recipients.[18]

According to the 2022 Occupational Employment and Wage Survey (OEWS), public entities account for 89.16% of total employees of Elementary and Secondary Schools (NAICS 6111) and 64.51% of total employees in postsecondary institutions (i.e., Junior Colleges (6112) and Colleges, Universities, and Professional Schools (6113) combined).[19]

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[18] Using the "Advanced Search" function in the HHS Tracking Accountability in Government Grants System (TAGGS) website (https://taggs.hhs.gov/, last visited Apr. 1, 2023), we identified, on a yearly basis for calendar years 2017 through 2022, how many individual Elementary and Secondary Schools (including Educational Departments of local governments) received HHS grant funds. On average, these recipients represent about 1% of the total number of entities (private schools, school boards and school districts) that Census reports under NAICS 6111 (Elementary and Secondary Schools) — a number that has remained virtually constant for the past several years.

[19] OEWS 2022 data available at: U.S. Bureau of Labor and Statistics, Occupational Employment and Wage Statistics (released April 25, 2023). May 2022 National Occupational Employment and Wage Estimates United States, https://www.bls.gov/oes/tables.htm. In the analysis, total employment is defined as the sum of employees for employer ownership type "Private, State, and Local Government." The Department computes subpart I costs and benefits excluding recipients that are also public entities under title II of the ADA by excluding 89.16% of costs and benefits associated with elementary and secondary schools, and by excluding 64.51% of costs and benefits associated with postsecondary institutions.

Figures for recipients as a share of all entities (public or private) and for PEs as a share of all entities (public or private) can be readily leveraged to compute web accessibility costs and benefits for recipients based on web accessibility costs and benefits for PEs reported in the DOJ Web Accessibility final rule. For postsecondary institutions, costs and benefits need to be first divided by 64.51% (to compute the value of the relevant cost or benefit if applied to all postsecondary institutions, whether private or public) and then multiplied by 12.86% to estimate the value for the subset that qualify as recipients.

In other words, costs and benefits for postsecondary institutions receiving HHS funds are 19.93% (=12.86% / 64.51%) of corresponding values in the DOJ Web Accessibility final rule; the conversion factor for secondary and elementary education recipients is 1.12% (=1.00% / 89.16%) under the assumption that public educational institutions are comparable to private educational institutions that are recipients (public institutions that receive HHS funds are 100% comparable).

Applying these percentages to the relevant entries in the DOJ Web Accessibility final rule tables reporting annualized costs (in 2022 dollars) yields $337.776 million in total annualized costs at a 3% discount rate, and $353.412 million at a 7% discount rate (see Table 1 and Table 2 for detail on these total costs).

TABLE 1— 10-YEAR AVERAGE ANNUALIZED COST, 3 PERCENT DISCOUNT RATE (MILLIONS): POSTSECONDARY, SECONDARY AND ELEMENTARY EDUCATION INSTITUTIONS

Cost	County	Municipal	Township	School District	Higher Ed.	Total
Regulatory familiarization	N/A	N/A	N/A	0.005	0.014	**0.019**
Websites	N/A	N/A	N/A	3.865	48.003	**51.867**
Mobile apps	N/A	N/A	N/A	0.507	1.555	**2.062**
Postsecondary course remediation	N/A	N/A	N/A	N/A	277.869	**277.869**
Primary and secondary course remediation	0.104	0.040	0.089	2.338	N/A	**2.572**
Third-party website remediation	N/A	N/A	N/A	0.218	3.170	**3.387**
Total	**0.104**	**0.040**	**0.089**	**6.933**	**330.610**	**337.776**

TABLE 2— 10-YEAR AVERAGE ANNUALIZED COST, 7 PERCENT DISCOUNT RATE (MILLIONS): POSTSECONDARY, SECONDARY AND ELEMENTARY EDUCATION INSTITUTIONS

Cost	County	Municipal	Township	School District	Higher Ed.	Total
Regulatory familiarization	N/A	N/A	N/A	0.006	0.016	**0.022**
Websites	N/A	N/A	N/A	4.105	51.411	**55.516**
Mobile apps	N/A	N/A	N/A	0.572	1.774	**2.346**
Postsecondary course remediation	N/A	N/A	N/A	N/A	289.172	**289.172**
Primary and secondary course remediation	0.111	0.044	0.094	2.486	N/A	**2.735**
Third-party website remediation	N/A	N/A	N/A	0.232	3.389	**3.621**
Total	**0.111**	**0.044**	**0.094**	**7.401**	**345.762**	**353.412**

Applying these percentages to the relevant entries in the DOJ Web Accessibility final rule table reporting benefits (in 2022 dollars) and their timing yields $206 million in total annualized educational benefits at a 3% discount rate, and $188 million at a 7% discount rate. See Table 3 for relevant data from the DOJ Web Accessibility final rule (column [1]), and for details on calculations and breakdown of benefits associated with recipients by source and year (column [2]). Column [2] is 19.93% of column [1]. For transparency, note that Table 3 in this final RIA differs from Table 3 in the Preliminary RIA because the columns corresponding to time savings benefits that DOJ's web accessibility RIA quantified but did not include in monetized benefits have been removed here too (a reduction of about $450 million in annualized benefits).

TABLE 3—EDUCATIONAL BENEFITS (MILLION)

Year	**[1] Education attainment, PEs**	**[2] Education attainment, recipients**
Year 1	0	0
Year 2	0	0
Year 3	306	61
Year 4	612	122
Year 5	918	183
Year 6	1,224	244
Year 7	1,529	305
Year 8	1,836	366
Year 9	2,142	427
Year 10	2,448	488
Annualized benefits at 3% discount rate	Not reported	**206**
Annualized benefits at 7% discount rate	Not reported	**188**

Table 4 summarizes annualized costs and benefits over a 10-year period associated with recipients in Sector 61.

TABLE 4—SUMMARY OF ANNUALIZED COSTS AND BENEFITS ASSOCIATED WITH SECTOR 61 RECIPIENTS

Millions (2022 Dollars)	7-Percent discount rate	3-Percent discount rate
Total Costs	353	338
Total Benefits	188	206

ii. State and local governments recipients (Sector 92).

The DOJ Web Accessibility final rule quantifies total incremental costs and benefits for PEs — State and local government entities.

Costs are recorded in the columns "State," "County," "Municipal," "Township," and "U.S. Territories" in Table 5 ("10-Year Average Annualized Cost, 3 Percent Discount Rate (Millions)") and Table 6 (same content, but for a 7% discount rate) of the DOJ Web Accessibility final rule. Non-education annualized monetized time savings benefits over a 10-year period are reported in Table 8 (3% discount rate) and Table 9 (7% discount rate) of the DOJ Web Accessibility final rule.[20]

[20] Since the benefits in these tables also include benefits from accessibility to Special Districts (which are accounted for elsewhere here), we proportionally reduce the benefits to recognize that since Special Districts account for about 8% of the costs, only 92% of the benefits should be attributed to non-Special District State and local governments.

This section estimates how much of those total incremental costs and benefits are associated with the websites and mobile applications of public entities that receive HHS funds.[21] We rely on U.S. Census Bureau, 2019 Annual Surveys of State and Local Government Finances data to estimate that fraction.[22] We calculate that, after excluding "Education" and "Hospitals" (costs which Table 5 and 6 in the DOJ Web Accessibility final rule report under "Special Districts" and the columns for school districts and higher education), 28.2% of non-Federal government expenditures are accounted for by "Health" and "Public Welfare" (excluding "Cash Assistance Payments"). It is expected that web and mobile app expenses are proportional to total agencies' expenses, so state and local government recipients' incremental web and mobile app costs and benefits are estimated to be 28.2% of the values reported in the DOJ Web Accessibility final rule, as detailed in Table 5, after excluding benefits associated with "Special Districts" recipients.[23]

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[21] The Department computes subpart I costs and benefits excluding overlapping recipients that are also public entities covered under title II of the ADA by excluding 100% of costs and benefits associated with State and local governments.

[22] *See* U.S. Census Bureau, State and Local Government Finances by Level of Government and by State: 2019, https://www2.census.gov/programs-surveys/gov-finances/tables/2019/19slsstab1a_revised.xlsx (last visited Sep. 21, 2022).

[23] The data from the DOJ Web Accessibility final rule comes from tables 5, 6, 8 and 9 in the final rule. The figures in this RIA reporting estimated values for recipients are 28.2% of those reported in tables 5, 6, 8 and 9. DOJ reports non-education benefits for all six types of PEs: "Special Districts" in addition to "State," "County," "Municipal," "Township," and "U.S. Territories." To exclude benefits associated with Special Districts, we multiply DOJ benefits not only by 28.2% but also by the non-Special District share of corresponding total annualized costs for the six types of PEs in DOJ tables 8 and 9 (92.3% and 92.4%, respectively).

TABLE 5—10-YEAR AVERAGE ANNUALIZED COST OF STATE AND LOCAL GOVERNMENT RECIPIENTS, 3 AND 7 PERCENT DISCOUNT RATE (MILLIONS)

Monetized value (2022 million dollars)	From DOJ final rule, 3% discount rate	From DOJ final rule, 7% discount rate	Estimated value for recipients, 3% discount rate	Estimated value for recipients, 7% discount rate
Regulatory familiarization cost	1.5	1.7	0.4	0.5
Websites cost	885.5	939.9	250.1	265.5
Mobile apps cos	19.5	22.4	5.5	6.3
Third-party website remediation cost	47.8	50.9	13.5	14.4
Total Cost	**954.3**	**1,014.9**	**269.5**	**286.7**
Total Benefits	**4,198.3**	**4,087.0**	**1,094.8**	**1,066.7**

For transparency, note that figures in Table 5 in this final RIA (above) differ from those in the version we included in the Preliminary RIA to reflect changes in the DOJ web accessibility final RIA compared to the corresponding preliminary version, especially regarding benefits.

iii. Sector 62 recipients.

In our assessment of incremental costs associated with the provision on Medical Diagnostic Equipment (*see infra*), we estimate the number of entities in relevant Subsectors (3-digit NAICS codes) and Industry Groups (4-digit NAICS codes) within Sector 62 that are HHS recipients that will incur costs associated with subpart J of the final rule. These recipients are also expected to incur costs associated with subpart I of the final rule.

The top half of table 6 reports information about recipients incurring costs under subparts I and J (see *infra*), complementing it with information about the rest of HHS recipients — i.e., those expected to incur costs under subpart I only — in the bottom half of table 6. This latter

group consists of recipients providing: Home Health Care Services (NAICS 6216),[24] Other Ambulatory Health Care Services (NAICS 6219, excluding NAICS 621999 providers included in subpart J counts),[25] and entities providing social assistance services.[26]

[24] *See* 84 FR 23170 (May 21, 2019), and estimated that, on average, 84.5% of these providers are recipients.
[25] The share of recipients in Industry Group 6219 is set to match the value used for NAICS 6219999 in the quantification of subpart J costs (*see infra*).
[26] The Department identified NAICS codes corresponding to entities providing social assistance services in 84 FR 23170 (May 21, 2019), and estimated that, on average, 50% of these providers are recipients.

TABLE 6—RECIPIENTS INCURRING COSTS UNDER SUBPART I

NAICS code	Description	Number of providers	Recipients as a share of providers	Number of recipients
6211	Offices of Physicians	168,459	92.3%	155,426
6212	Offices of Dentists	124,384	43.0%	53,485
6213	Offices of Other Health Practitioners	141,853	92.3%	130,878
6214	Outpatient Care Centers	19,625	81.6%	16,020
6215	Medical and Diagnostic Laboratories	7,192	100.0%	7,192
621999	All Other Miscellaneous Ambulatory Health Care Services	3,712	81.6%	3,030
622	Hospitals	3,044	100.0%	3,044
623	Nursing and Residential Care Facilities	40,956	65.1%	26,676
Multiple codes	***Subtotal: MDE Recipients***	***509,225***	***77.7%***	***395,751***
6216	Home Health Care Services	24,619	84.5%	20,803
6219	Other Ambulatory Health Care Services (excluding NAICS 621999)	3,256	81.6%	2,658
624110	Child and Youth Services	9,410	50.0%	4,705
624120	Services for the Elderly and Persons with Disabilities	30,878	50.0%	15,439
624190	Other Individual and Family Services	23,390	50.0%	11,695
624221	Temporary Shelters	3,396	50.0%	1,698
624230	Emergency and Other Relief Services	670	50.0%	335
Multiple codes	***Subtotal: rest of Recipients (non-MDE recipients)***	***95,619***	***60.0%***	***57,333***
All codes	**Total**	**604,844**	**74.9%**	**453,084**

Many recipients to whom subpart I applies are Physician Offices, Dentist Offices and Health Practitioner Offices (339,789 out of 453,084, *see* Table 6), that are exclusively[27] private firms — and are thus effectively outside the scope of the DOJ Web Accessibility final rule, which covers public entities.

The DOJ Web Accessibility final rule covers 38,542 "Special District" PEs. This universe includes PEs with the function of: "32 – Health", "40 – Hospitals", "77 – Public Welfare Institutions", or "79 – Other Public Welfare."

Several of the individual providers listed among the 38,542 "Special District" PEs are either hospitals (NAICS 622), nursing and residential care facilities (623), providers belonging to Industry Group 6219 (public ambulance service providers), entities providing social assistance services (NAICS codes starting with 624 listed in Table 6), and other public entities most likely providing health services under the NAICS codes listed in Table 6. Private providers in NAICS codes 6211, 6212 and 6213 (private doctors' offices) are not included in the representative Special District sample the DOJ Web Accessibility final rule evaluates.

Table 7, based on figures in Table 6, splits provider and recipient counts into two groups based on whether or not the representative Special District sample from the DOJ Web

[27] There may be extremely rare exceptions, which should not significantly affect the analysis.

Accessibility final rule can be used to approximate costs for all recipients under the assumption that non-PEs will incur costs comparable to PEs.

TABLE 7—RECIPIENTS INCURRING COSTS UNDER SUBPART I

Description	Number of providers	Recipients as a share of providers	Number of recipients
Providers in NAICS codes 6211, 6212 and 6213	434,696	78.2%	339,789
Providers in other NAICS codes listed in Table 6	170,148	66.6%	113,295
Total	**604,844**	**74.9%**	**453,084**

The 339,789 recipients are office-based private physicians that are predominantly small firms (i.e., fewer than 15 employees). We estimate that 85.9% of them have a website[28] and those who do will spend $440/year to ensure their pages are accessible.[29] As a consequence, we estimate that the yearly cost for these recipients as a group is $128.4 million/year. These estimated costs are incurred from the fourth year from implementation onward as these recipients

[28] U.S. Dep't of Health & Hum. Servs., Ctrs. for Disease Control, QuickStats: Percentage of Office-Based Physicians Using Telemedicine Technology, by Specialty — United States, 2019 and 2021. MMWR Morb Mortal Wkly Rep 2022 (Dec. 9, 2022), http://dx.doi.org/10.15585/mmwr.mm7149a6. The 85.9% estimate corresponds to the percentage of doctors using telemedicine for all specialties.

[29] The $440/year figure is an average of prices competing web accessibility IT service providers quote on their websites for small users (typically, one domain, up to few thousand pages and few hundreds of thousands of visitors per month (visited Apr. 12, 2023, identities of web accessibility IT service providers not reported). These prices are in 2023 dollars, but it is assumed that they represent a reasonable approximation of prices in 2022 dollars. The prices could be adjusted downward to account for inflation, but IT technical progress tends to reduce costs — and hence prices — over time. Thus, it is reasonable to use 2023 prices given that these two opposing trends (inflation and IT technical progress) tend to cancel each other out.

are small.[30] On an annualized basis over a 10-year period, these costs are $85.8 and $80.4 million per year at a 3% and a 7% discount rate, respectively.

The cost quantification in the Preliminary RIA assumed that DOJ Web Accessibility final rule analyses could be used to estimate costs incurred by the 113,295 recipients operating under NAICS codes different from 6211, 6212 and 6213 (see Table 7).

As for Special Districts, the DOJ Web Accessibility final rule estimates that, on average each of them (including those that do not have websites or apps) will spend, on an annualized basis over 10 years, $2,055/year at a 3% discount rate and $2,161/year at a 7% discount rate (in 2022 dollars) to achieve and maintain web accessibility compliance.[31]

Based on a representative sample consisting of 38 Special Districts,[32] the DOJ Web Accessibility final rule estimates that, out of the total of 38,542 Special Districts, 10,143 of them have websites—or about 26% of them.[33] The Preliminary RIA divided the annualized compliance costs (that DOJ computed based on the 10 Special Districts having a website among

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[30] Costs per year are the same regardless of the discount rate used because — unlike the compliance estimates in the DOJ Web Accessibility final rule — estimates of costs are based on prices for accessibility remediation and web accessibility upkeep *already expressed on an annualized basis*. The DOJ Web Accessibility final rule instead computes high remediation expenses in the first few years, and much lower upkeep costs in the following years — leading to different annualized costs depending on the discount rate used.

[31] *See* tables titled "10-Year Average Annualized Cost, 3 Percent Discount Rate (Millions)" and "10-Year Average Annualized Cost, 7 Percent Discount Rate (Millions)." Values were obtained by dividing "Total" amount in the column "Special District" by 38,542.

[32] *See* table titled "Government Entities Sample Sizes" in the DOJ Final RIA.

[33] *See* table titled "Average Number of Websites per Entity and Entity Type" in the DOJ Final RIA.

the 38 in the representative sample, i.e., 26% of those sampled) by 26% to conclude that, on an annualized basis, each recipient operating a website spends $7,808/year in annualized costs at a 3% discount rate, and $8,213/year at a 7% discount rate.[34]

The Preliminary RIA estimated total compliance costs for the 113,295 recipients by multiplying these annualized costs by 113,295. This multiplication implicitly postulated that 100% of these entities have a web presence and/or mobile applications. This assumption is consistent with recent research published by the CDC, which reports that 91.4% of primary care physicians — typically smaller and less complex recipients as compared to hospitals, nursing homes and social assistance service providers — used telemedicine technology (defined as the use of audio with video or web videoconference for patient visits).[35] While use of telemedicine is neither a necessary nor sufficient condition for the use of websites and/or mobile applications, the Department concludes (based on its best professional judgment) that the percentage of 113,295 recipients who use of website and or mobile applications exceeds the percentage of primary care physicians using telemedicine. It is thus reasonable to assume that it is 100%.

[34] The DOJ Web Accessibility final rule includes the list of sampled individual Special Districts, but no information regarding individual compliance costs (if any).

[35] U.S. Dep't of Health & Hum. Servs., Ctrs. for Disease Control, QuickStats: Percentage of Office-Based Physicians Using Telemedicine Technology, by Specialty — United States, 2019 and 2021. MMWR Morb Mortal Wkly Rep 2022 (Dec. 9, 2022), http://dx.doi.org/10.15585/mmwr.mm7149a6.

In conclusion, the Preliminary RIA estimated that the total annualized costs for these 113,295 recipients would be $885 million/year at a 3% discount rate and $930 million/year at a 7% discount rate.

This final DOJ Web Accessibility RIA differs from the preliminary version because it no longer relies on monetized costs and benefits that lack "appropriate certainty." The Department updated this RIA accordingly.

For this reason, the Department has revised the cost estimates associated with the 113,295 recipients discussed above. This is because Lee County Ambulance Service District (KY) was the only Special District among the 38 sampled that provided health services and was likely not representative of the 113,295 recipients affected by this rulemaking and their web content and mobile application usage. Therefore, the per-District $7,808/year in annualized costs at a 3% discount rate, and $8,213/year at a 7% discount rate calculated based on the DOJ sample does not appropriately capture the average cost incurred by the 113,295 recipients that provide health services and a revision is needed. For example, around half of the Special Districts sampled in the DOJ RIA were "Water Supply Utility," "Local Fire Protection," or "Cemeteries," all of which likely have much different presences and needs when it comes to web content and mobile applications when compared to Department recipients.

The Department continues to postulate that 100% of the 113,295 recipients have a website. Each of the 113,295 recipients is estimated to spend much more than the $440/year small private recipients are estimated to spend to ensure their pages are accessible because these

recipients are typically larger and more complex firms, and so are their websites and mobile applications.

The Department uses prices publicly quoted to ensure accessibility of medium (about $1,500/year) and large websites (about $3,500/year) to estimate that each of the 113,295 recipients spends $2,500/year. Therefore, the Department estimates that the yearly cost for these recipients as a group is $283.2 million/year.

These estimated costs are expected to be incurred from the third year from implementation onward under the assumption that the typical recipient has 15 or more employees. On an annualized basis over a 10-year period, these costs are $219.7 and $210.3 million per year at 3% and 7% discount rates, respectively.

The Department's revised base cost estimates for the total 453,084 recipients are $305.5 and $290.8 million per year at 3% and a 7% discount rates, respectively.

The Department's lower bound cost estimate is 25% lower than base cost estimates (at 3% and 7% discount rates, respectively) to account for circumstances — especially for recipients among the 113,295 in other NAICS codes listed in Table 6 — driving costs down, such as: the recipient does not have a website; the recipient has a website but fewer than 15 employees (costs incurred from the fourth year onward); the recipient has 15 or more employees but a simple website (per-year websites costs are closer to $440/year rather than $2,500/year). The Department's upper bound cost estimate is 25% higher than base cost estimates, to account for possible circumstances driving costs up, mainly higher yearly costs to ensure web accessibility

(the base estimate already accounts for most recipients having a website, and their actual employee size, so these two factors are less likely to generate cost increases).

Table 8 summarizes costs associated with recipients in Sector 62. As the DOJ Web Accessibility final rule does not break down benefits to identify those pertaining to Special Districts providing health care and social assistance services (as it does for benefits associated with education PEs and State and local governments), benefits will be discussed and quantified in an aggregate way for all non-Sector 61 and non-Sector 92 recipients (including Sector 62 recipients) later (see *infra*).[36]

TABLE 8—SUMMARY OF COSTS AND BENEFITS ASSOCIATED WITH SECTOR 62 RECIPIENTS

Millions (2022 Dollars)	7-Percent discount rate	3-Percent discount rate
Lower Bound	218.1	229.2
Total Costs	290.8	305.5
Upper Bound	363.5	381.9

[36] The Department computes subpart I costs and benefits excluding recipients that are also public entities covered under title II of the ADA by: 1) including 100% of costs associated with recipients in NAICS codes 6211, 6212 and 6213; and 2) excluding 15% of costs associated with recipients in all other applicable NAICS codes. That 15% is a weighted average of the proportions of recipients in the applicable NAICS codes that are public entities. That is, based on BLS OES data, about 17% of hospitals are public entities, about 7% of) nursing homes are public entities. In the absence of data regarding other selected NAICS codes, namely 624120, 624190, 624221, 624230, we assume that 50% of recipients in those groups are public entities. Time-saving benefits associated with scheduling doctor appointments and made possible by the web accessibility provisions apply mostly to private entities, so the Department did not need to exclude any of those benefits.

iv. Pharmacies.

Census data indicates that in 2019 there were about 19,500 firms primarily engaged in retailing prescription or nonprescription drugs and medicines (hereinafter "pharmacies").[37] About 16,000 pharmacies had fewer than 15 employees. There were about 150 large (i.e., more than 1,000 employees) firms that accounted for more than 70% of pharmacy employees and 50% of the pharmacy locations that patients typically visit. Cost quantification assumes all of them are recipients. This assumption is consistent with the approach in previous Department regulatory impact analyses.

The representative sample the DOJ Web Accessibility final rule uses to quantify website testing and remediation costs covers neither the approximately 16,000 small community pharmacies nor the few large corporate pharmacy chains (and any pharmacy firm between these two extremes).

For the approximately 16,000 small pharmacies, we assume that those with a website will spend $440/year to ensure their pages are accessible — the same amount estimated for office-based private physicians. In the absence of data on the fraction of small pharmacies with a

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[37] U.S. Census Bureau, Statistics of U.S. Businesses, 2019, https://www.census.gov/programs-surveys/susb.html, *see* NAICS 446110 Pharmacies and Drug Stores. the code has now changed to 456110, Pharmacies and Drug Retailers. Note that hospitals, outpatient care centers and similar firms may dispense drugs as well, but since pharmacy services are not their primary focus, the corresponding ICT costs and benefits are assessed elsewhere.

website, we assume 50% of them have websites. As a consequence, we estimate that the yearly cost for these recipients as a group is $3.52 million/year. These costs will be incurred each year effective after three years from the publication of the final rule.

DOJ has recently entered into settlement agreements with some of the large corporate pharmacy chains to ensure that portions of their websites and applications are accessible for people with disabilities by meeting the most recent WCAG 2.1 standards.[38] Based on these settlements, existing accessibility requirements in Federal nondiscrimination laws, and the fact that large pharmacy chains will likely find it profitable to maintain accessibility (fixed costs are spread over a large number of clients with disabilities that the companies would like to serve), the Department concludes that these pharmacies likely already comply with the final rules and will not incur incremental costs.

Finally, regarding the approximately 3,300 mid-size pharmacy firms (those with more than 14 employees but fewer than 1,000), the Department assumes that 75% of them have a website (the midpoint between the corresponding figures for small pharmacies and large pharmacies), and 50% of those with a website will spend $1,390/year to ensure their web pages

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[38] *See* U.S. Dep't of Justice, Settlement Agreement - CVS Pharmacy, Inc. (Apr. 11, 2022), https://www.justice.gov/crt/case-document/settle-agreement-cvs-pharmacy-inc; U.S. Dep't of Justice, Settlement Agreement – Rite Aid Corporation (Nov. 1, 2021), https://www.justice.gov/crt/case-document/rite-aid-corporation.

are accessible,[39] while the other 50% will not need to spend additional money because their websites are already accessible. As a consequence. we estimate that the yearly cost for these recipients as a group is $1.7 million/year. These costs will be incurred each year effective after two years from the publication of the final rule.

In conclusion, the estimated incremental web and mobile app costs for pharmacies are $5.248 million/year starting the fourth year from the publication of the final rule onward. In the third year, the yearly costs are $1.7 million. Annualized over a 10-year period, the costs are $3.7 million and $3.5 million at a 3% and 7% discount rate, respectively.[40]

We discuss incremental benefits from compliant web content and mobile apps associated with pharmacies in section vi, *infra*. In particular, see *Quantifying time savings* and the savings associated with refilling prescriptions on-line in Table 10.

v. Direct Health and Medical Insurance Carriers.

Census reports that in 2019 there were 826 Direct Health and Medical Insurance Carriers.[41] 58% of them had fewer than 15 employees, 24% of them had between 15 and 999

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[39] The $1,390/year figure is an average of prices that competing web accessibility IT service providers quoted on their websites for medium-size users (typically, up to 1 million visit per month, up to 10,000 pages). Prices are in 2023 dollars (last visited Apr. 12, 2023). Identities of web accessibility IT service providers are not reported.

[40] The Department computes subpart I costs and benefits by excluding recipients that are also public entities covered under title II of the ADA. Because 100% of independent pharmacies are private, none of the costs and benefits (time savings associated with refilling prescriptions) for those entities are excluded.

[41] U.S. Census Bureau, Statistics of U.S. Businesses, 2019, https://www.census.gov/programs-surveys/susb.html, *see* NAICS 524114.

employees, and the rest (18%) had more than 1,000 employees. Cost quantification assumes all of them are recipients. This assumption is consistent with the approach in previous Department regulatory impact analyses.

The representative sample the DOJ Web Accessibility final rule uses to quantify website testing and remediation costs does not contain information specific to entities providing medical and health insurance services that can be leveraged to quantify the incremental cost this type of recipients will incur.

We assume that all direct insurers have a website.

Consistent with estimates for pharmacies, we assume that small insurers (with fewer than 15 employees) spend $440/year to ensure their pages are accessible. As a consequence, we estimate that the yearly cost for these recipients is $0.21 million/year starting the fourth year from the publication of the rule onward. Similarly, we assume that mid-size health insurers (those with more than 14 employees but fewer than 1,000) will spend $1,390/year to ensure their pages are accessible from the third year onward, or $0.275/year (both at a 3% and a 7% discount rate).

Finally, the Department has searched for information regarding large insurers' web content accessibility. Conclusive evidence about widespread inaccessibility of such web content was not found. Large insurers will likely find it profitable to maintain accessibility (fixed costs are spread over a large number of clients with disabilities that the companies would like to serve). The Department did not receive any comments from the public reporting inaccessibility issues with large insurers' websites. The Department did not receive any comment that the rule

will result in incremental web accessibility costs for large insurers. The Department concludes that these recipients likely already largely comply with the final rules and will not incur significant incremental costs (and thus, similarly, not generating benefits).

In conclusion, the estimated incremental web and mobile app costs for direct health insurers are $0.486 million/year from the fourth year onward, and $0.275 in the third year. Annualized over a 10-year period, the cost are $0.354 million/year and $0.336 million/year at a 3% and a 7% discount rate.[42]

We discuss incremental benefits from accessible web content and mobile apps associated with direct health and medical insurance carriers in section vi.

vi. Additional benefits.

In the previous sections, the benefits quantified in the DOJ Web Accessibility final rule for PEs have been used — whenever possible — to quantify corresponding benefits associated with recipients. Recall that the DOJ Web Accessibility final rule quantified benefits from five sources, but excluded quantified benefits under bullet points 2 and 4 from monetized benefits (as this RIA does) because corresponding estimates lack appropriate certainty:

1. Time savings for current users of State and local government websites;

[42] The Department computes subpart I costs and benefits excluding recipients that are also public entities covered under title II of the ADA. Because 100% of these direct health insurers are private, we retain 100% of these recipients' costs.

2. Time savings for those who switch modes of access (i.e., switch from other modes of accessing programs or activities such as by phone or mail) or begin to participate through web content or mobile apps;
3. Time savings for current mobile app users;
4. Time savings for students and their parents; and
5. Earnings from additional educational attainment.

Recall also that the DOJ Web Accessibility final rule monetizes benefits accrued not only by individuals with vision, hearing, cognitive, and manual dexterity disabilities, but also benefits accrued by people without disabilities because accessibly designed websites and mobile apps are easier for everyone to use.[43]

This section first discusses unquantifiable benefits and then presents a quantification of benefits associated with time savings for scheduling doctor visits and (re)filling prescriptions thanks to improved Web accessibility. These latter quantified benefits complement and are in addition to those presented so far.

Unquantifiable benefits.

There are many additional benefits that have not been monetized due to a lack of data availability. These benefits are central to this final rule's impact.

[43] In the DOJ Web Accessibility final rule, about 50% of the benefits accrue to people with disabilities. *See* tables titled "10-Year Average Annualized Benefits, 3 Percent Discount Rate (Millions)" and "10-Year Average Annualized Benefits, 7 Percent Discount Rate (Millions)."

A primary, non-quantifiable benefit of the final rule is protecting the civil rights of individuals with disabilities that affect their use of web content and mobile apps in order to ensure equity, human dignity, and nondiscrimination in their access to health care.

Other benefits to individuals include increased independence, increased flexibility, increased privacy, reduced frustration, decreased reliance on companions, and increased program participation. This final rule will also generate unquantifiable benefits through increased certainty about what constitutes an accessible website, potential reduction in litigation, and a larger labor market pool.

Perhaps the most important unquantified benefit (with some accompanying costs) is that people with disabilities are more likely to receive and benefit from appropriate health care. The requirements for accessible web content, mobile applications, and kiosks will result in substantial health benefits for people with disabilities who otherwise would not be able to access recipient programs and activities or would experience limited access to recipient programs and activities. People with disabilities who would otherwise have no method for obtaining health care, or would face additional obstacles to receiving health care, will now be able to quickly and effectively receive services, including preventative services, and either avoid unnecessary negative health outcomes entirely or begin treatment sooner. This will result in fewer negative health outcomes for people with disabilities, which in turn will translate to benefits from longer, healthier lives, as well as benefits for health care providers that now have larger patient populations.

While the Department has high confidence that these benefits will result from this rulemaking, there is limited research or other evidence that would allow us to calculate the exact

numerical benefits, beyond what we have already outlined above. determining the actual benefits from that increased utilization is much more complicated and reliant on extensive data that is not available in sufficient scale for reliable estimates. Accordingly, our monetary estimates, included in Summary Tables A and elsewhere in the RIA, only partially include these benefits.

In support of these unquantified benefits, commenters discussed a range of consequences that result from inaccessible web content, mobile apps, and kiosks. First, commenters noted that technology has become ubiquitous throughout health care and is often the only method for people to access the programs and activities of a health care provider. If a doctor's office only offers electronic intake forms for patients to fill out, then inaccessible forms deny a person with a disability the ability to access health care services. Even in situations where a health care provider offers programs and activities through both web content and other means, such as when a provider offers in-person visits in addition to telehealth visits, inaccessible web content will still limit the options of people with disabilities and result in additional barriers to care as well as expenses such as transportation and childcare. These outright denials, as well as less absolute but still detrimental barriers to access, may both result in people with disabilities either foregoing preventative and therapeutic health care entirely or delaying them, both of which may result in negative health outcomes. This rulemaking will likely lessen these negative health outcomes.

Some commenters noted that parents and prospective parents rely on extensive blood and urine tests to monitor their health and the health of their unborn children. When the scheduling and results of these tests both rely on web content and mobile apps, pregnant people with some types of disabilities are not able to monitor the health of their unborn children, potentially

leading to complications for the pregnant person and child and even death. Other commenters noted that some public health programs provide updates on their websites for which pharmacies have limited supplies of medication in stock. When people with disabilities cannot access this information, they must either waste additional time calling or travelling to multiple pharmacies or potentially not receive necessary medication at all. Commenters also noted that people with disabilities may not be able to access a recipient's method of payment, resulting in unnecessary late fees and financial hardship for people with disabilities. Many commenters generally stated that web content, mobile apps, and kiosks have become so common throughout health care that if a person with a disability does not have access to them, they are effectively cut off from health care and its benefits.

Quantifiable benefits.

The final rule has economically quantifiable benefits. Below we provide evidence that these benefits are positive and likely non-trivial.

Quantifying benefits for this final rule presents significant challenges. The Access Board ICT final rule faced similar challenges and stressed that, although quantified benefits were less that quantified costs, "this finding represents only a piece of the regulatory story."[44]

[44] Information and Communication Technology Standards and Guidelines. 82 FR 5790, 5824 (Jan. 18, 2017).

We expect that establishing a technical standard for web content and mobile apps will reduce the amount of time that people with certain disabilities spend managing their health care via digital devices. We focus on the benefits from time savings pertaining to scheduling physician visits and filling prescriptions online thanks to improved web content and mobile app accessibility.

Because of lack of data and other methodological difficulties, we are unable to quantify possible beneficial effects on health outcomes (reductions in mortality and morbidity risks) that better web and mobile access may yield.

Counting people who will directly benefit.

Inaccessible web content and mobile apps affect people with very different types of disabilities, including people with visual impairments and people with intellectual and developmental disabilities. We refer to these disabilities as "relevant disabilities" when quantifying Subpart I benefits. We rely on 2020 CDC National Health Interview Survey (NHIS)[45] headcounts of adults who have at least one of these relevant disabilities:

- Vision difficulties,[46]
- Hearing difficulties, [47]

[45] U.S. Dep't of Health & Hum. Servs., Ctrs. for Disease Control and Prevention, 2020 National Health Interview Survey, https://www.cdc.gov/nchs/nhis/2020nhis.htm (last accessed Sep. 13, 2022).
[46] The question is "Do you have difficulty seeing, even when wearing glasses or contact lenses, if applicable?" The variable name is "VISIONDF_A."
[47] The question is "Do you have difficulty hearing, even when using your hearing aid(s) if applicable?" The variable name is "HEARINGDF_A."

- Difficulty communicating,[48]
- Difficulty remembering/concentrating,[49] and
- Difficulty using hands and fingers[50]

We count adults who responded to the survey question with either "Cannot do at all" or report "A lot of difficulty." NHIS 2020 reports that there are 15.2 million adults who are severely affected by at least one of the five difficulties listed above. When we also include respondents reporting "Some difficulty." NHIS 2020 reports that there are 93.8 million adults who are affected by at least one of the five difficulties listed above. The population of adults with severe relevant disabilities is very heterogeneous, as Table 9 shows. (Percentage figures are based on a total population consisting of 15.2 million adults.)

TABLE 9—COMPOSITION OF ADULT POPULATION WITH SEVERE RELEVANT DISABILITIES

Type of vision and/or hearing disability	No other disability excluding vision and/or hearing	No communication disability and one other disability excluding vision and/or hearing	Communication disability and no other disability excluding vision and/or hearing	Communication disability and a single disability excluding vision and/or hearing	Communication disability and multiple disabilities excluding vision and/or hearing	**Row total**
None	NA	44.3%	3.4%	4.0%	0.9%	52.7%
Only hearing	17.2%	2.9%	1.3%	1.0%	0.3%	22.7%
Only vision	16.2%	4.6%	0.2%	0.3%	0.6%	21.8%
Both hearing and vision	1.7%	0.6%	0.2%	0.3%	0.0%	2.8%
Column total	**35.1%**	**52.4%**	**5.1%**	**5.6%**	**1.9%**	**100%**

[48] The question is "Using your usual language, do you have difficulty communicating, for example, understanding or being understood?" The variable name is "COMDIFF_A."
[49] The question is "Do you have difficulty remembering or concentrating?" The variable name is "COGMEMDFF_A."
[50] The question is "Do you have difficulty using your hands and fingers, such as picking up small objects, for example, a button or pencil, or opening or closing containers or bottles?" The variable name is "UPPOBJCT_A."

Because of lack of data, in our quantification of benefits we do not account for the fact that some subsets of people with relevant disabilities may benefit more or less than other subsets. We also do not account for the fact that some subsets may use the web and mobile apps more extensively than other subsets (and possibly more extensively than the population without any relevant disability).

Our analysis below focuses on quantifiable benefits accruing to adults living with a relevant disability.

We note that other stakeholders could benefit too. For instance, recipients could achieve savings by relying more on digital communication and less on dedicated staff (at recipients' locations or in call centers).

Quantifying time savings.

In Table 10 we quantify benefits from time savings that people with relevant disabilities will enjoy due to the final rule under different scenarios. The expected benefits are estimated to be $13.5 million per year (in 2022 dollars), with a lower and upper bound of $4.5 and $113.7 million per year, respectively.

Our base estimate assumes the final rule will benefit the 15.2 million adults with severe relevant disabilities (Table 10, row 1, middle column). The lower bound assumes the final rule will benefit half of these 15.2 million adults. The upper bound uses instead the 93.8 million people with relevant disabilities (any level of severity).

Of course, the final rule only benefits those who have a digital device and use it to access websites and apps. We rely on two recent reports that address these two questions separately to fill base estimates and lower and upper bounds reported in row 2 and row 3 of Table 10).[51] With these estimates, we calculate the percentage of potential beneficiaries who have and use a digital device (Table 10, row 4) and compute headcounts of potential beneficiaries (Table 10, row 5).

We use CDC data to estimate the numbers of physician visits per year and the average number of prescription drugs patients use (Table 10, rows 6 and 7).[52]

Rows 8 to 10 of Table 10 report the assumptions we employed in our quantification. We use these assumptions to calculate how many hours are currently spent on these tasks (Table 10, row 11 through 14).

We adopt an hourly value of time based on after-tax wages to quantify the opportunity cost of changes in time use for unpaid activities. This approach matches the default assumptions

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[51] For ownership estimates, *see* Andrew Perrin et al., *Americans with disabilities less likely than those without to own some digital devices*, Pew Research Center (Sep. 10, 2021), https://www.pewresearch.org/fact-tank/2021/09/10/americans-with-disabilities-less-likely-than-those-without-to-own-some-digital-devices/. The lower bound is the share of people with any disability who own a computer. The upper bound is the share owning a smartphone. The base estimate is the midpoint of the two. Usage estimates come from Morris, John T. et al, *Smartphone use and activities by people with disabilities: user survey 2016*, 5 J. Technol. Pers. Disabil. 50 (2017). We use figures in Table 4 to inform our estimates.

[52] *See* U.S. Dep't of Health & Hum. Servs., Ctrs. for Disease Control and Prevention, Ambulatory Care use and Physician Office Visits, https://www.cdc.gov/nchs/fastats/physician-visits.htm (last visited Sep. 23, 2022); U.S. Dep't of Health & Hum. Servs., Ctrs. for Disease Control and Prevention, Therapeutic Drug Use, https://www.cdc.gov/nchs/fastats/drug-use-therapeutic.htm (last visited Sep. 23, 2022). These data are for the whole U.S. population, regardless of disability.

for valuing changes in time use for individuals undertaking administrative and other tasks on their own time, which are outlined in an ASPE report on "Valuing Time in U.S. Department of Health and Human Services Regulatory Impact Analyses: Conceptual Framework and Best Practices."[53] We start with a measurement of the usual weekly earnings of wage and salary workers of $1,059.[54] We divide this weekly rate by 40 hours to calculate an hourly pre-tax wage rate of $26.48. We adjust this hourly rate downwards by an estimate of the effective tax rate for median income households of about 17%, resulting in a post-tax hourly wage rate of $21.98. We adopt this as our estimate of the hourly value of time for changes in time use for unpaid activities.

We rely on ASPE estimates for the value of time and time savings attributable to the adoption of WCAG (3.6%) to quantify benefits (Table 10, row 15 through 17).

In order to express the base benefits of $12.7 million per year on an annualized basis over a 10-year period, we adopt the DOJ Web Accessibility final rule methodology to take into account that smaller recipients (fewer than 15 employees) have more time (3 years instead of

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[53] U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, Valuing Time in U.S. Department of Health and Human Services Regulatory Impact Analyses: Conceptual Framework and Best Practices (Sep. 17, 2017), https://aspe.hhs.gov/reports/valuing-time-us-department-health-human-services-regulatory-impact-analyses-conceptual-framework.

[54] U.S. Bureau of Labor and Statistics. Employed full time: Median usual weekly nominal earnings (second quartile): Wage and salary workers: 16 years and over [LEU0252881500A], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/LEU0252881500A, annual estimate for calendar year 2022 (last visited. Jan 31, 2024.).

two) to achieve compliance than other recipients.[55] Annualized benefits corresponding to the base estimate ($13.5 million per year) in Table 10 are thus $11.4 million/year at a 3% discount rate and $11.1 million/year at a 7% discount rate in 2022 dollars. We allocate to pharmacies a share of these benefits equal to the share of hours saved when filling and refilling prescriptions,

[55] Namely, we follow the DOJ Web Accessibility final rule and assume that 100% of the benefits accrue from year 4 onward. In year 1, 2 and 3 benefits are 27%, 53% and 80% of the total yearly value. *See* table titled "Timing of Benefits (Millions)."

TABLE 10—ESTIMATED BENEFITS

Row	Description	Lower bound	Expected Benefits $M (2021)	Upper bound
1	Adults with relevant disability	**7,604,427**	**15,208,854**	**93,787,791**
2	Ownership of digital devices among people with disabilities, Pew Research Center (2021)	62.0%	67.0%	72.0%
3	Use of digital devices, Morris et al. (2017)	70.0%	81.0%	88.0%
4	**Have and use, as % of total people with disabilities** = row 2 * row 3	**43.4%**	**54.3%**	**63.4%**
5	**Estimated beneficiaries** = row 1 * row 4	**3,300,321**	**8,253,845**	**59,423,945**
6	Visits per person per year (CDC data, all people regardless of disability)	2.67	2.67	2.67
7	Prescription per person (CDC data, all people regardless of disability)	1.1	1.4	1.8
8	Minutes spent online reserving/confirming visit, visit follow-up	15	15	15
9	Minutes spent filling prescription online, first time	30	30	30
10	Minutes spent filling prescription online, refills	10	10	10
11	Hours per year spent online for physician visits = row 5 * row 6 * row 8 /60	2,202,964	5,509,442	39,665,483
12	Hours per year spent online for first time fill of prescriptions = row 5 * row 7 * row 9 /60	1,733,906	5,781,818	52,033,091
13	Hours per year spent online for 3 yearly refills of prescriptions = 3 *row 5 * row 7 * row 10 /60	1,733,906	5,781,818	52,033,091
14	**Total hours spent online** = row 11 + row 12 +row 13	**5,670,777**	**17,073,079**	**143,731,666**
15	**Value of time** (1 hour, 2022 dollars)	**$21.98**	**$21.98**	**$21.98**
16	**Percent of total time saved due to accessibility improvement** (Access Board ICT FR)	**3.60%**	**3.60%**	**3.60%**
17	**Estimated benefits per year, $ million (2022)** = row 14 * row 15 * row 16	**$4.5**	**$13.5**	**$113.7**

Accessible kiosks.

The Department also includes a provision stating that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity of a

recipient provided through kiosks. However, the Department does not adopt a set of specific standards addressing the features of kiosks or transaction machines.

The Department believes that the language on kiosks will result in limited additional financial burdens on the Department's recipients and similarly limited benefits due in part to existing nondiscrimination requirements. All of the Department's recipients that provide health care programs are already covered by this provision because of the Department's section 1557 rule.[56] Because recipients providing human services are already covered by the general nondiscrimination provision of section 504 and by the list of nondiscrimination requirements in 45 CFR 84.68 and 84.52, and because this new language is a recitation of the general nondiscrimination obligation under section 504 as it applies to the use of kiosks, the Department does not expect that this provision will result in additional cost burdens for recipients that are complying with their Federal nondiscrimination obligations. The Department also notes in the preamble discussion of this provision that recipients can make their programs accessible by instituting alternative procedures that would allow persons with disabilities who cannot use kiosks because of their inaccessible features to access the program without using kiosks.[57] For example, a clinic or a social services office may allow persons with disabilities to go directly to the personnel at the main desk to register for necessary services. Such work-around procedures

[56] *See* 45 CFR 92.104 (Information and Communication Technology, as defined by section 1557, includes kiosks).
[57] 45 CFR 84.22(b).

must afford persons with disabilities the same access, the same convenience, and the same confidentiality that the kiosk system provides. Accordingly, recipients that rely on inaccessible kiosks to provide their programs and activities, contrary to the requirements of section 1557 and the current section 504 regulation, will have the opportunity to come into compliance with this final rule at minimal cost by using these work-around procedures.

In instances where kiosks are closed functionality devices that do not rely on web content or mobile apps, the proposed technical standards in § 84.84 will not apply. Under these circumstances, recipients are still obligated to ensure that individuals with disabilities are not excluded from participation in, denied the benefits of, or otherwise subjected to discrimination in any program or activity of the recipient, including the information exchange that would occur at the kiosk. This may require the recipient to provide reasonable modifications to policies, practices, or procedures, as required by § 84.68(b)(7), and take appropriate steps to ensure effective communication, including through the provision of appropriate auxiliary aids and services, which include accessible electronic and information technology, as required by subpart H.

Summary of costs and benefits.

Table 11 summarizes quantified incremental costs and benefits from the final rules on accessible web and mobile apps.

TABLE 11—SUMMARY OF INCREMENTAL COSTS AND BENEFITS

Annualized values, $ million (2022 Dollars)	Costs, 7 percent discount rate	Benefits, 7 percent discount rate	Costs, 3 percent discount rate	Benefits, 3 percent discount rate
Postsecondary, secondary and elementary education institutions	353.4	187.8	337.8	205.6
State and local governments	286.7	1,066.7	269.5	1,094.8
Sector 62	290.8	3.6	305.5	3.7
Pharmacies	3.5	7.5	3.7	7.7
Direct Health and Medical Insurance Carriers	0.3	unquantified	0.4	unquantified
Total	**934.7**	**1,265.6**	**916.9**	**1,311.8**

d) Analysis of Regulatory Alternatives to the Final Rule.

The Department considered alternatives to the regulatory provisions on web content, mobile app, and kiosk accessibility in its Notice of Proposed Rulemaking. Some of the alternatives considered required alternative standards and one limited the provisions to web content and mobile app accessibility.

In this rulemaking, the Department requires that the web content and mobile apps that recipients provide or make available conform with the requirements of WCAG 2.1 Level AA. The Department also requires that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity of a recipient provided through kiosks.

The Department considered two possible alternative technical standards for recipient web content and mobile apps. First, the Department considered requiring that recipients comply with the Section 508 Standards for web content and mobile apps. The Department believes that

adopting WCAG 2.1 as the technical standard for this final rule is more appropriate than adopting WCAG 2.0, as required under section 508 of the Rehabilitation Act. WCAG 2.1 provides for important accessibility features that are not included in WCAG 2.0, and an increasing number of governmental entities are using WCAG 2.1. A number of countries that have adopted WCAG 2.0 as their standard are now making efforts to move or have moved to WCAG 2.1.[58] In countries that are part of the European Union, public sector websites and mobile apps generally must meet a technical standard that requires conformance with the WCAG 2.1 success criteria.[59] And WCAG 2.0 is likely to become outdated or less relevant more quickly than WCAG 2.1. As discussed above, WCAG 2.2 was recently published and includes even more success criteria for accessibility.

The Department expects that the wide usage of WCAG 2.0 lays a solid foundation for recipients to become familiar with and implement WCAG 2.1's additional Level A and AA criteria. The Department understands that dozens of States either use or strive to use WCAG 2.0

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[58] *See, e.g.*, *Exploring WCAG 2.1 for Australian government services*, Austl. Gov't Digital Transformation Agency (Aug. 22, 2018), *https://www.dta.gov.au/blogs/exploring-wcag-21-australian-government-services*. A Perma archive link was unavailable for this citation; W3C, *Denmark (Danmark)* (updated Mar. 15, 2023), *https://www.w3.org/WAI/policies/denmark/#bekendtg%C3%B8relse-om-afgivelse-af-tilg%C3%A6ngelighedserkl%C3%A6ring-for-offentlige-organers-websteder-og-mobilapplikationer* [*https://perma.cc/K8BM-4QN8*]; *see also* W3C, *Web Accessibility Laws & Policies* (updated Dec. 2023), *https://www.w3.org/WAI/policies/* [*https://perma.cc/6SU3-3VR3*].

[59] *Web Accessibility*, European Comm'n (updated July 13, 2022), *https://digital-strategy.ec.europa.eu/en/policies/web-accessibility* [*https://perma.cc/LSG9-XW7L*]; *Accessibility Requirements for ICT Products and Services*, European Telecomm. Standards Inst., 45–51, 64–78 (Mar. 2021), *https://www.etsi.org/deliver/etsi_en/301500_301599/301549/03.02.01_60/en_301549v030201p.pdf* [*https://perma.cc/5TEZ-9GC6*].

or greater—either on its own or by way of implementing the section 508 technical standards—for at least some of their web content. It appears that at least ten States—Alaska, Delaware, Georgia, Louisiana, Massachusetts, Oregon, Pennsylvania, South Dakota, Utah, and Washington—already either use WCAG 2.1 or strive to use WCAG 2.1 for at least some of their web content. Given that WCAG 2.1 is a more recent standard than WCAG 2.0, adds some important criteria for accessibility, and has been in existence for long enough for web developers and recipients to get acquainted with it, the Department views it as more appropriate for adoption in this final rule than WCAG 2.0. In addition, even to the extent recipients are not already acquainted with WCAG 2.1, those entities will have two or three years to come into compliance with a final rule, which should also provide sufficient time to become familiar with and implement WCAG 2.1. The Department also declines to adopt the Access Board's section 508 standards for the same reasons it declines to adopt WCAG 2.0 because the 508 standards are harmonized with WCAG 2.0.

The Department also considered adopting performance standards instead of specific technical standards for accessibility of web and mobile content. Performance standards establish general expectations or goals for web and mobile app accessibility and allow for compliance via a variety of unspecified methods. As the Department noted in the NPRM, the Department believes that performance standards are too vague and subjective and would be insufficient to provide consistent and testable requirements for web and mobile app accessibility. Additionally, the Department expects that performance standards would not result in predictability for either recipients or people with disabilities in the way that a more specific technical standard would.

Further, similar to a performance standard, WCAG has been designed to allow for flexibility and innovation as technology evolves.[60] The Department recognizes the importance of adopting a standard for web and mobile app accessibility that provides not only specific and testable requirements, but also sufficient flexibility to develop accessibility solutions for new technologies. The Department believes that WCAG achieves this balance because it provides flexibility similar to a performance standard, but it also provides more clarity, consistency, predictability, and objectivity. Using WCAG also enables recipients to know precisely what is expected of them under section 504, which may be of particular benefit to recipients with less technological experience. This will assist recipients in identifying and addressing accessibility errors.

The Department also considered only addressing the accessibility of web content and mobile apps without addressing the accessibility of programs and activities provided through kiosks. Although, as noted above, kiosks are covered by existing requirements under section 504 and should therefore already be accessible, the Department is aware of certain persistent accessibility issues that individuals with disabilities may face, including difficulty reaching kiosks and operating controls, and interacting with kiosks that have no audio output or braille

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[60] W3C, *Benefits of WCAG 2* (Aug. 12, 2010), *https://www.w3.org/WAI/presentations/WCAG20_benefits/WCAG20_benefits.html* [*https://perma.cc/3RTN-FLKV*] ("WCAG 2 is adaptable and flexible**,** for different situations, and developing technologies and techniques. We described earlier how WCAG 2 is flexible to apply to Web technologies now and in the future.").

instructions. The Department also notes that recipients that use kiosks may make their programs accessible by instituting procedures that would allow persons with disabilities who cannot use kiosks because of their inaccessible features to access the program without using kiosks.[61] For example, a clinic or a social services office may allow persons with disabilities to go directly to the personnel at the main desk to register for necessary services. Such work-around procedures must afford persons with disabilities the same access, the same convenience, and the same confidentiality that the kiosk system provides. This will likely not result in increased expenses for recipients as they already have employees responsible for the programs and activities that kiosks would otherwise provide. The expanded use of kiosks, especially in medical settings, has allowed for recipients to automate portions of their programs and activities, but recipients must take into account the needs of people with disabilities in order to comply with civil rights laws, including section 504. Current Federal laws and regulations require the accessibility of all programs and activities of recipients of Federal financial assistance, including those provided through kiosks.[62] However, the Department believes it is necessary to include a general nondiscrimination provision specific to kiosks in this rulemaking because of how prevalent they

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[61] 45 CFR 84.22(b).

[62] *See, e.g.,*45 CFR 92.104; 45 CFR 84.4, redesignated as 84.68. Note that compliance with these web and mobile accessibility requirements does not remove covered entities' obligations under Title I of the ADA to not discriminate against qualified individuals on the basis of disability in regard to job application procedures; the hiring, advancement, or discharge of employees; employee compensation; job training; or other terms, conditions, and privileges of employment. These obligations include making reasonable accommodation to the known physical or mental limitations of applicants or employees, absent undue hardship.

have become and because if they are not designed with people with disabilities in mind they may serve as barriers to recipient programs and activities. Accordingly, the Department is finalizing a provision highlighting the application of general nondiscrimination requirements to recipients that use kiosks in their programs and activities.

3. Subpart J – Accessible Medical Equipment.

This final rule includes requirements for accessible medical equipment so that persons with disabilities have opportunities to participate in and benefit from health care programs and activities that are equal to the opportunities afforded others.

a. Baseline conditions.

The final rule explicitly sets the percentage of Medical Diagnostic Equipment (MDE) units that, when found at a health provider's location, constitute evidence of compliance with this regulation. The final rule also requires that recipients that use exam tables or weight scales ensure that they acquire at least one accessible exam table and/or weight scale within two years of the publication of the rule. Additionally, the final rule sets requirements for recipients to ensure their employees are able to successfully operate accessible MDE.

The current section 504 regulation requires recipients to ensure that their programs and activities, including diagnostic medical care, are accessible to individuals with disabilities. While programs and activities as a whole are required to be accessible, prior to this rule there were no requirements for specific standards that MDE must meet to ensure that they are accessible. Accordingly, some percentage of recipients have accessible MDE that meet the U.S. Access

Board's Standards for Accessible Medical Diagnostic Equipment (MDE Standards)[63] that we adopt in this final rule, while some percentage of recipients only have inaccessible MDE. Additionally, some percentage of recipients with accessible MDE train their staff on its use to ensure they are able to successfully use it, while some percentage of recipients with accessible MDE do not train their staff on its use.

For the baseline of our regulatory impact analysis, we estimate the current use of accessible MDE among recipients. In the absence of comprehensive information on the total units of accessible MDE and their distribution among U.S. recipients, we rely on information from a number of sources for our estimates, including remarks from a medical equipment manufacturer,[64] results from State audits,[65] and survey results from select regions.[66] Of note, these sources collected data on accessible exam tables and weight scales, which we believe to be the most prevalent forms of existing accessible MDE that will be required at the greatest number of locations. Based on these sources, we estimate that recipients overall do not meet scoping requirements and there are accessibility gaps (the difference between current accessible MDE

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[63] 36 CFR 1195.
[64] Midmark, Midmark U.S. Access Board Public Comment Submission, Comment ID: ATBCB-2022-0002-0073, https://www.regulations.gov/comment/ATBCB-2022-0002-0073 (last visited Sep. 13, 2022).
[65] Nancy Mudrick et al., *Presence of Accessible Equipment and Interior Elements in Primary Care Offices*, 3 Health Equity 275, 277 Table 1 (2019).
[66] *See* Jennifer R. Pharr et al., *Accessibility and Accommodations for Patients with Mobility Disabilities in a Large Healthcare System: How are we Doing?*, 12 Disability& Health J. 679, 682 Table 2 (2019); Nicole Agaronnik et al., *Accessibility of Medical Diagnostic Equipment for Patients with Disability: Observations from physicians*, 100 Archives of Physical Med. & Rehabilitation 2032 (2019) (stating that, "[e]ven if physicians have accessible equipment, they do not always use it in examining patients with disability")..

units and accessible MDE units that will be required by the final rule) across recipients that range from 10.6% to 33.9%, with the largest gaps present in "Offices of Other Health Practitioners."[67]

In part because of this lack of comprehensive data on the distribution of accessible MDE among recipients, the Department has decided to use a "top-down" approach to estimate costs for accessible MDE that recipients will purchase as a percentage of total recipient expenditures as collected by the U.S. Census Bureau. Below, we provide additional estimated percentages of accessible MDE already acquired and used by certain recipients.

b. Costs of the final rule.

We quantify additional costs associated with these final rules under subpart J — Accessible Medical Equipment:

- Additional costs associated with newly acquired MDE at § 84.92; and
- Additional costs associated with Qualified Staff under § 84.94.

First, we estimate of the number of health providers who *both* receive Federal financial assistance from the Department (i.e., recipients under Part 84) *and* utilize equipment covered by the Standards for Accessible MDE — we refer to these entities as "MDE recipients" in what follows.

Next, we quantify acquisition costs under § 84.92, which requires an estimate of how many MDE units are currently in use and how many of them need to be made accessible to

[67] *See infra*, Table 20.

achieve scoping requirements under § 84.92. The quantification of costs under § 84.92 presents several challenges, due in large part to lack of data.

Finally, we quantify additional costs under § 84.94 (Qualified Staff) in a manner consistent with the estimates of additional accessible MDE units computed during the quantification of costs under § 84.92.

c. Recipients.

We base our cost quantification on data from Sector 62, "Health Care and Social Assistance." We use data on firms belonging to Sector 62 — "Health Care and Social Assistance" — in the North American Industry Classification System (NAICS) Codes to estimate the number of MDE recipients and the number of MDE units they use.[68] We expect that relatively larger MDE recipients use more MDE units, where relative size is measured in terms of establishments (each establishment is a single physical location a firm owns), employment/payroll expenses, or revenues.

Table 12 reports Sector 62 data for year 2019, broken down by both its four Subsectors (3-digit NAICS) and the 18 Industries (4-digit NAICS) which make up the four Subsectors.[69]

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[68] NAICS uses 6-digit codes and a hierarchical structure: Sector (first 2 digits); Subsector (3); Industry Group (4); Industry (5), and National Industry (6).

[69] Sources are as follows: Column 1: U.S. Bureau of Econ. Analysis, Input-Output Accounts Data, The Use of Commodities by Industry,

https://apps.bea.gov/iTable/iTable.cfm?reqid=150&step=3&isuri=1&table_list=6009&categories=io (last visited Sep. 13, 2022). These data are reported by Sector - the output in each Sector is allocated to Industries proportional to Industry revenues as reported by the U.S. Census Bureau in its Statistics of U.S. Businesses, 2017 ("SSB 2017"), the latest year for which revenue data are published. Columns 2-4 and 6: U.S. Census Bureau, Statistics of U.S. Businesses, 2019, https://www.census.gov/programs-surveys/susb.html (last visited Sep. 13, 2022). Column 5: U.S. Small Bus. Admin., Table of Size Standards, Effective Aug 19, 2019, https://www.ccsb.com/wp-content/uploads/2022/02/Covid-19-SBA-Table-of-Size-Standards-effective-August-19-2019.pdf (last visited Sep. 13, 2022). These standards have been applied to SUSB 2017 data on revenues (current 2017 dollars inflated to 2019 levels using the U.S. Bureau of Economic Analysis GDP Deflator data). We used SUSB 2017 data by firm size class ("<5 employees," "5 to 0 employees," etc.) to estimate average revenues and number of employees within each class, and ultimately the share of the total number of small firms within each Industry. Columns 7-10: U.S. Dep't of Lab., Bureau of Lab. Stat., Occupational Employment and Wages - May 2019 (Mar. 31, 2020), https://www.bls.gov/news.release/archives/ocwage_03312020.pdf. Column 7 reports the share of total employees headcount for "All Occupations" (OES Code 00-0000) accounted for by "Healthcare Practitioners and Technical Occupations" (29-0000). Columns 8-10 report the share of "29-0000" employees (a "major" occupation) accounted for in the three "minor" occupations the "major" occupation consists of.

TABLE 12—SECTOR 62 STATISTICS FOR YEAR 2019

NAICS code	Description	(1) Industry Output ($ bn)	(2) Number of firms	(3) % of firms with 15+ employees	(4) % of small firms	(5) Number of establishments	(6) Total number of employees	(7) Health care practitioners & technicians as % of total employees in column (6)	(8) Diagnosing or Treating employees as a % of column (7)	(9) Technologists and Technicians as a % of column (7)	(10) Rest of employees as a % of column (7)
62	***Health Care and Social Assistance***		***665,331***	***18.8***	***97.4***	***918,433***	***20,864,810***	***32.6***	***69.0***	***30.5***	***0.5***
621	**Ambulatory Health Care Services**	**1,165.8**	**489,941**	**13.3**	**97.7**	**636,343**	**7,820,262**	**37.0**	**68.5**	**30.7**	**0.8**
6211	Offices of Physicians	540.4	168,459	13.6	96.6	222,880	2,550,425	43.2	72.2	27.0	0.7
6212	Offices of Dentists	142.0	124,384	9.5	99.6	136,422	975,666	34.4	97.6	2.1	0.3
6213	Offices of Other Health Practitioners	95.1	141,853	7.2	99.2	164,708	963,091	36.2	78.7	19.1	2.2
6214	Outpatient Care Centers	189.5	19,625	40.1	91.0	47,895	1,172,186	40.2	62.2	37.0	0.9
6215	Medical and Diagnostic Laboratories	61.0	7,192	27.1	92.8	18,018	286,388	39.9	9.0	90.5	0.5
6216	Home Health Care Services	93.5	24,619	44.2	96.3	34,303	1,528,844	22.3	71.2	28.7	0.1
6219	Other Ambulatory Health Care Services	44.4	6,968	38.0	92.5	12,117	343,662	53.7	11.9	87.4	0.7
622	**Hospitals**	**958.6**	**3,044**	**96.1**	**39.6**	**6,933**	**6,078,477**	**55.6**	**73.3**	**26.5**	**0.2**
6221	General Medical and Surgical Hospitals	898.6	2,484	96.0	39.3	5,460	5,586,027	56.4	73.6	26.2	0.2
6222	Psychiatric and Substance Abuse Hospitals	21.1	428	96.7	43.7	707	251,237	39.8	55.8	44.2	
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	39.0	301	96.7	36.6	766	241,213	51.9	80.1	19.2	0.7
623	**Nursing and Residential Care Facilities**	**262.4**	**40,956**	**51.4**	**95.7**	**93,020**	**3,538,496**	**17.4**	**45.8**	**54.2**	**0.0**
6231	Nursing Care Facilities (Skilled Nursing Facilities)	134.4	9,818	76.6	94.1	17,506	1,623,081	26.9	46.3	53.7	
6232	Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	48.8	10,832	53.7	96.2	43,655	791,849	6.5	48.1	51.3	0.5
6233	Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	70.6	18,122	40.0	96.6	26,000	999,070	10.8	41.5	58.5	
6239	Other Residential Care Facilities	8.7	3,222	46.2	93.7	5,859	124,496	4.4	60.6	39.4	
624	**Social Assistance**	**235.8**	**136,584**	**30.2**	**97.9**	**182,137**	**3,427,575**	**1.7**	**75.0**	**24.4**	**0.6**
6241	Individual and Family Services	125.2	62,762	30.6	97.3	82,075	1,935,648	2.3	74.3	25.2	0.6
6242	Community Food and Housing, and Emergency and Other Relief Services	44.6	10,776	34.5	94.5	14,928	214,634	1.2	61.9	38.1	
6243	Vocational Rehabilitation Services	15.6	3,982	57.7	96.4	7,421	275,482	1.6	73.0	24.7	2.3
6244	Child Day Care Services	50.3	61,603	30.1	99.0	77,713	1,001,811	0.4	94.1	5.9	

We identify MDE recipients based on the following three considerations:

First, Subsector 624 firms provide social assistance services, not health services. Less than 2% of their workers are health care professionals; most of them are nurses without an MD

(Doctor of Medicine) or DO (Doctor of Osteopathic Medicine) degree typically required to diagnose health conditions. As Subsector 624 firms are not in the business of diagnosing health conditions (requiring use of MDEs), we do not include them in our analysis.

Second, firms in Industry Group 6216 are primarily engaged in providing skilled nursing services in the home. We expect that 6216 firms, in order to attract and retain patients, will procure portable MDE designed for the specific needs of their patients — including accessibility for people with mobility impairments.

Unlike ambulatory or hospital service providers that may not have 100% of their MDE accessible to accommodate unexpectedly high numbers of visits from patients requiring such MDE, 6216 providers have strong incentives to acquire as many accessible units as the number needed for patients they are scheduled to serve on a given day and at any given time. As we expect the final rule to have a negligible overall effect on 6216 providers, we do not include Industry 6216 in our analysis.

Third, Industry Group 6219 consists of three National Industries, but firms belonging to only one of them, "All Other Miscellaneous Ambulatory Health Care Services" (621999), typically provide medical diagnostic services. Within Industry Group 6219, 621999 firms account for 39.80% of the establishments, 22.35% of the employees, and 29.72% of the revenues.[70] As for the other two National Industries, Ambulance Services (621910) and Blood

[70] *See supra*, note 69, SUSB 2019 and SUSB 2017.

and Organ Banks (621991), they do not provide medical diagnostic services. Thus, the final rule will have no impact on them, and they are not included in the analysis below. Therefore, in our analysis, Industry Group 6219 includes only National Industry 621999.

In conclusion, our cost quantification is based on health providers in Subsectors 621, 622, and 623 (except Industry Group 6216), and National Industries 621910 and 621991.

d. Recipients – Percentage of Sector 62 health providers receiving HHS financial assistance.

While it is not necessarily the case that all Sector 62 firms receive financial assistance from the Department, most do. Below we detail how we estimated the share of health providers' establishments (by NAICS code) who are recipients.

We rely on CMS' Provider of Service (POS) data[71] to estimate the share of establishments in Subsector 622 ("Hospitals") and 623 ("Nursing and Residential Care Facilities") receiving Federal financial assistance in 2019.[72] The number of hospital establishments from the POS data (i.e., recipients) is marginally higher than the Census Bureau number in Table 12 (i.e., recipients *and* non-recipients), likely due to methodological differences in information collection and classification methods between the two sources. Based on this

[71] U.S. Dep't of Health & Human Servs., Ctrs. for Medicare & Medicaid Servs., Provider of Services Current Files, https://www.cms.gov/Research-Statistics-Data-and-Systems/Downloadable-Public-Use-Files/Provider-of-Services (last visited Sep. 13, 2022).

[72] We use unique locations (by establishment category and subtype, facility name and address) from the December 2019 dataset (POS_OTHER_DEC19.csv). For hospitals (category 1), we consider only those with an unexpired accreditation. We assume Subsector 623 corresponds to these subtypes: 2-4, 6, 10, 11, 14, 16 and 19.

result, we assume that 100% of the hospitals are recipients. (The actual percentage cannot be higher than 100% and may be lower, but likely only marginally and insignificantly so.)

As for Subsector 623, the unique establishments from POS are 65.13% of the number in Table 12. Hence, we estimate that 65.13% of Subsector 623 firms and establishments are recipients.

We use the POS file and the methodology outlined above to estimate that 81.63% of locations in Industry Group 6214 (Outpatient Care Centers) are recipients.[73] We apply this percentage to National Industry 621999 (Other Ambulatory Health Care Services) within Industry Group 6219 as well because the POS file does not clearly distinguish between outpatient care centers and other ambulatory health care locations.

According to POS data, there were more than 500,000 unique Clinical Laboratory Improvement Act laboratory locations in 2019,[74] pointing to the fact that the U.S. Census Bureau counts establishments in Industry Group 6215 ("Medical and Diagnostic Laboratories") differently from the Centers for Medicare & Medicaid Services (CMS data include laboratories located in hospitals, outpatient centers, and doctors' offices, etc.).

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[73] We assume Industry Group 6214 corresponds to these subtypes in the POS data: 9, 12, 15 and 21.
[74] POS_CLIA_DEC19.csv identifies unique locations by facility name and address. Nat'l Bureau of Econ. Research, Provider of Service Files, https://www.nber.org/research/data/provider-services-files (last visited Sept. 13, 2022). (Data files are available in different formats by following links under the heading "Q4 file for 2011-2022.") According to the U.S. Census Bureau data, there were approximately 18,000 "Medical and Diagnostic Laboratories" establishments in Industry Group 6215 in 2019. *See* Table 12.

We assume 100% of the establishments in Industry Group 6215 receive HHS financial assistance. We also assume, for quantification purposes, that 100% of them are visited by patients, although in principle some firms and/or establishments could be closed to the public (hence use no MDE covered by the final rule) and only analyze samples (e.g., blood) or analyze imaging (e.g., X-ray) collected elsewhere.

We rely on the Centers for Disease Control and Prevention (CDC) annual National Electronic Health Records Survey (NEHRS) of non-federally employed office-based physicians to estimate the fraction of Offices of Physicians (6211) that are recipients. Data from the 2021 NEHRS show that 92.26% of the respondents participated in Medicare, Medicaid, or both. This percentage may be an underestimate, as health care providers in this group may participate in Departmental programs other than Medicare and Medicaid that the survey does not cover (for instance, the Children's Health Insurance Program).

The Health Policy Institute of the American Dental Association reports that 43% of U.S. dentists participate in Medicaid or CHIP.[75] We thus assume that 43% of Offices of Dentists (6212) are recipients.

Offices of Other Health Practitioners (6213) is comprised of establishments of different types of health practitioners (except physicians and dentists). We approximate the share of

[75] Am. Dental Ass'n, Health Pol'y Inst., Dentist Participation in Medicaid or CHIP (Aug. 2020), https://www.ada.org/-/media/project/ada-organization/ada/ada-org/files/resources/research/hpi/hpigraphic_0820_1.pdf.

recipients in this Industry Group by assuming it matches the 92.26% for the Offices of Physicians.

Table 13 summarizes information on recipients and firms with at least 15 employees as a share of total number of providers by NAICS code.[76]

TABLE 13—RECIPIENTS AND FIRMS WITH 15 OR MORE EMPLOYEES AS A SHARE OF NUMBER OF FIRMS

NAICS	Description	Recipients As % of Number of Firms	% of Firms with 15+ Employees
6211	Offices of Physicians	92.3%	13.6%
6212	Offices of Dentists	43.0%	9.5%
6213	Offices of Other Health Practitioners	92.3%	7.2%
6214	Outpatient Care Centers	81.6%	40.1%
6215	Medical and Diagnostic Laboratories	100.0%	27.1%
621999	All Other Miscellaneous Ambulatory Health Care Services	81.6%	11.7%
6221	General Medical and Surgical Hospitals	100.0%	96.0%
6222	Psychiatric and Substance Abuse Hospitals	100.0%	96.7%
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	100.0%	96.7%
6231	Nursing Care Facilities (Skilled Nursing Facilities)	65.1%	76.6%
6232	Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	65.1%	53.7%
6233	Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	65.1%	40.0%
6239	Other Residential Care Facilities	65.1%	46.2%
	Total	**77.7%**	**15.7%**

[76] *See supra* note 69 for data sources.

e. Acquisition costs under § 84.92(a).

In principle, the quantification of additional acquisition costs to meet § 84.92(a) requires an exhaustive list of MDE types to which the accessibility standards apply, counts of additional accessible units (by MDE type) that health care providers need to acquire, and information on additional expenses (dollars per unit) to acquire an accessible unit compared to a non-accessible one. For a given MDE type, these latter dollar values may differ depending on the size of the health provider, as larger users (for example, a hospital group) may obtain discounts that smaller users (for example, a family doctor practice) may not receive.

Meeting these demanding data needs would enable a "bottom-up" cost quantification: multiplying the number of additional accessible units under § 84.92(a) by unit price differentials by type (i.e., how many more dollars a certain user must pay for an accessible unit), and then adding all dollar figures (by MDE type and user size) to arrive at the additional total cost.[77]

Alternatively, a "top-down" approach could leverage data the U.S. Census Bureau publishes about health care providers' annual expenditures on the capital equipment they purchase. These expenditures are for *all* equipment — medical and non-medical — and even

[77] This simplification ignores the fact that some health providers may lease — not outright purchase — the required equipment. We will address this issue further below (*see* discussion *infra* under *"Estimating incremental acquisition costs from operational leases"*).

with respect to medical expenses, not all of them pertain to equipment covered by accessibility standards.[78]

Actual capital expenditures on MDE covered by § 84.92(a) are anywhere between 0 and 100% of expenditures on all equipment. A reasonable estimate of this fraction of expenditures spend on MDE substitutes for the compilation of a comprehensive list of types/units of MDE and then pricing them item-by-item. Instead, applying such a fraction to census data directly yields estimates of the average annual "MDE replacement bill" to buy MDE. That estimate includes how much health providers currently voluntarily (i.e., not because of § 84.92(a)) spend on MDE units as these units reach the end of their useful life and need to be replaced. Considering the demanding data needs of a bottom-up approach to cost quantification and recognizing the lack of data to support such approach, we instead quantify costs using a top-down approach.

We implement our top-down approach in three steps:

First, based on census data on capital expenditures ("CAPEX") for all types of equipment in 2019, we estimate how much recipients spent on medical equipment covered by the MDE Standards in 2019 (see Table 16). These yearly expenses should be interpreted as estimates of the amount recipients spend as medical units covered by the MDE Standards come to the ends of their useful lives or otherwise need to be replaced. We associate a corresponding useful life

[78] For instance, an electrocardiogram machine, a ventilator or a defibrillator are examples of medical equipment that patients do not sit or lie on. Patients will not typically transfer independently to Intensive Care Unit equipment or operating room equipment on which they need to lie.

estimate to these yearly estimates to compute the overall value of the stock of capital to be replaced. When the estimated useful life is 10 years, the yearly CAPEX amount needs to be multiplied by 10 to estimate the stock value of the equipment — but only by five if the associated useful life is five years.

Second, we estimate what portion of the MDE units currently in use are to be replaced with an accessible version because of § 84.92(b) scoping requirements — the "accessibility gap." Multiplying the accessibility gap by the CAPEX dollar amounts estimated in the first step yields an estimate of the CAPEX invoice that will become more expensive under the final rule.

Third, we estimate how much more expensive — in percentage terms — accessible MDE are relative to inaccessible MDE and combine these estimates with those in the previous two steps to produce our estimate of incremental costs from MDE purchases.

As the final rules recognize, health providers sometimes do not outright purchase MDE but lease them instead, either via capital leases or operational leases. Census CAPEX data include outright purchases and assets a health provider (the lessee) acquires via a capital lease.[79] For this reason, we loosely refer to incremental cost estimates based on Census CAPEX data as incremental *purchasing* costs (with the understanding that ownership is not legally transferred under a capital lease).

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[79] In a capital lease, the lessor legally owns the asset and provides finance services to the lessee, who is granted ownership-like rights to the asset and treats it as a purchased asset in its accounting books.

We estimate the impact of the final rules on MDE acquired via operational leases separately and add it to the estimates of incremental purchasing expenses to arrive at our final incremental *acquisition* cost estimate. We present our analyses for the three steps described above and the complementary operational lease analysis below.

Step 1—Recipients' yearly expense to replace MDE equipment absent the final rule.

The U.S. Census Bureau publishes data on total capital expenses on new equipment (CAPEX in what follows) by (groups of) 4-digits NAICS codes.[80] Table 14 reports Census data for NAICS codes relevant for our purposes.

TABLE 14—CAPITAL EXPENDITURES FOR NEW EQUIPMENT, 2019

NAICS Code	Industry	Expenditures for new equipment, $M
6211	Offices of physicians	3,775
6212, 6213	Offices of dentists and other health practitioners	3,647
6214, 6219	Outpatient care centers and other ambulatory health care services	4,114
6215	Medical and diagnostic laboratories	1,409
6221	General medical and surgical hospitals	27,238
6222, 6223	Psychiatric, substance abuse, and specialty hospitals	1,120
623	Nursing and residential care facilities	2,434
	Sum	**43,737**

For our analysis, we need to make four adjustments to figures in Table 14.

[80] U.S. Census Bureau, 2020 Annual Capital Expenditures Survey, Table 4b – Capital Expenditures for Structures and Equipment for Companies with Employees by Industry: 2019 Revised, https://www.census.gov/data/tables/2020/econ/aces/2020-aces-summary.html (last visited Sep. 13, 2022).

First, the Census Bureau's figures for NAICS group "6214, 6219" include CAPEX for Ambulance Services (621910) and Blood and Organ Banks (621991) which we concluded should be excluded from the analysis. We reduce the amount for NAICS group "6214, 6219" from $4,114 million to $3,565 million to exclude Ambulance Services (621910) and Blood and Organ Banks (621991).[81]

Second, for our analysis to account for differences between Offices of Dentists (6212) and Offices of Other Health Practitioners (6213), we allocate census data for these two Industry Groups combined to each Industry Group separately.[82]

Third, Industry Group 6125 consists of two National Industries. Medical Laboratories (621511) include blood analysis laboratories, pathology, and bacteriological laboratories and similar laboratories performing analysis of body fluids and specimen. In contrast, Diagnostic Imaging Centers (621512) include centers primarily engaged in producing images of the patient (Computer Tomography (CT) scans, X-rays, ultrasound images, etc.). While the latter mostly invests in expensive medical equipment that patients need to access (e.g., an ultrasound machine), the former mostly invests in medical equipment patients do not physically access (e.g., hematology analyzers) and devotes few resources to relatively low-tech, inexpensive medical equipment patients do access (e.g., a phlebotomy chair) or sometimes nothing at all (some body

[81] The latest available Census revenue data (SUSB data, year 2017) indicates that Ambulance Services (621910) together with Blood and Organ Banks (621991) account for about 13.3% of total revenues in Industry Groups 6214 and 6219 combined. $3,565 million is 86.7% of $4,114 million.
[82] We allocated CAPEX proportionally to the latest available Census revenue data (SUSB data, year 2017).

fluids are collected in a toilet room without need for medical equipment). For our analysis to account for these differences, we allocate census data for Industry Group 6125 to National Industries 621511 and 621512.[83]

Fourth, for our analysis to account for differences between Psychiatric and Substance Abuse Hospitals (6222) and Specialty Hospitals (6223), we allocate census data for these two Industry Groups combined to each Industry Group separately.[84]

Table 15 reports the adjusted CAPEX figures we use in our quantification of additional purchasing costs.

TABLE 15—CAPITAL EXPENDITURES FOR NEW MEDICAL EQUIPMENT USED IN RIA

NAICS Code	Industry	Expenditures for new equipment, $M
6211	Offices of physicians	3,775
6212	Offices of Dentists	2,184
6213	Offices of Other Health Practitioners	1,463
6214, 6219	Outpatient care centers and other ambulatory health care services	3,565
621511	Medical Laboratories	928
621512	Diagnostic Imaging Centers	481
6221	General medical and surgical hospitals	27,238
6222	Psychiatric and Substance Abuse Hospitals	393
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	727
623	Nursing and residential care facilities	2,434
	Sum	**43,188**

[83] We allocated CAPEX proportionally to the latest available Census revenue data (SUSB data, year 2017).
[84] We allocated CAPEX proportionally to the latest available Census revenue data (SUSB data, year 2017).

The CAPEX on new equipment in Table 15 is the sum of *medical* and *non-medical* investment. For our purposes, we are interested only in a portion of the former amount: the fraction of *medical* expenses that pertains to equipment covered by the MDE Standards.

We rely on U.S. Bureau of Economic Analysis (BEA) data to estimate the share of CAPEX spent on *medical* equipment.[85] BEA reports these data at the Subsector level: 28.2% for Nursing and Residential Care Facilities (NAICS: 623); 77.6% for Hospitals (622); and 65.3% for Ambulatory Health Care Services (621).

The 77.6% observed for Hospitals is a weighted average[86] of the underlying but unknown percentages for General Medical and Surgical Hospitals (6221), Psychiatric and Substance Abuse Hospitals (6222) and Specialty Hospitals (6223).

In principle, these unknown percentages could all be 77.6% for each Industry Group separately (6221, 6222 and 6223), which would be consistent with the observed 77.6% weighted average. In practice, we can leverage a well-known fact about Industry Groups within Subsector 622 to make reasonable ordinal assumptions to guide our estimate the unknown percentages.

Psychiatric and Substance Abuse Hospitals rely less heavily on expensive diagnostic imaging equipment, hence the unknown percentage for Industry Group 6222 should be lower

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[85] U.S. Dep't of Com., Bureau of Econ. Analysis, Detailed Data for Fixed Assets and Consumer Durable Goods, https://apps.bea.gov/national/FA2004/Details/Index.htm (last visited Sep. 13, 2022). We use these data to compute the percentage of total "Private Nonresidential Fixed Assets" excluding "Structures" spent on "medical instruments" (both "Electro" and "Nonelectro").

[86] Weighted by the dollar amounts in Table 15 for NAICS 6221, 6222 and 6223, respectively. *See* Table 15.

than the unknown percentages for Industry Group 6221 and Industry Group 6222 (hence, lower than the known weighted average of 77.6% as well).

Based on this assumption, we estimate the unknown percentages consistent with the 77.6% weighted average: almost 79% for 6221, about 65% for 6223 and about 31% for 6222.[87]

We apply this approach to Subsector 621 to break down the known weighted average (65.3%) into separate estimated percentages for each Industry Group in Table 15. In this case, the ordinal information we leverage is as follows:

- The share for Offices of Dentists (6212) is greater than the share for Offices of Physicians (6211), since the former's typical office uses both expensive imaging equipment and electromedical instruments (chairs, drills, sterilization equipment, etc.), which is not usually the case for the typical general practitioner's office.

[87] To estimate the unknown percentages, we first generate all possible triplets of unknown percentages X_{6221}, X_{6222}, and X_{6223} that fall between 0.1% and 99.9% (that is, 999^3= 997,002,999 distinct triplets). Second, among all these 999^3 triplets, we consider (i.e., keep) only triplets X_{6221}, X_{6222}, and X_{6223} that meet two inequalities ($X_{6221} > X_{6222}$ and $X_{6223} > X_{6222}$) and generate a weighted average (by dollars spent) that is close to 77.6% (i.e., values falling within a ±5% interval centered on 77.6; the boundaries of this interval are 73.7% and 81.5%). For instance, we keep the triplet X_{6221}=79%, X_{6222}=31% and X_{6223}=42% because these values meet the inequalities and the corresponding weighted average values to produce is 77.4% and thus falls within 5% of 77.6% (note that the weights are 0.9605, 0.0139 and 0.0256 for NAICS codes 6221, 6222 and 6223; General Hospitals account for most of capital expenditures). Instead, we drop the triplet X_{6221}=50%, X_{6222}=30% and X_{6223}=80% because this triplet, while it meets the inequalities, yields a weighted average well below 73.7% (the lower bound of our assumed acceptable range). Finally, we average values across all triplets we keep and report such averages as our estimates. for each NAICS (6221, 6222 and 6223, respectively).

- The share for 6211 is greater than the share for Offices of Other Health Practitioners (6213), an Industry Group that includes health services for mental and behavioral conditions (which rely less heavily on medical equipment).
- The share for Medical and Diagnostic Laboratories (6215) is greater than the share for 6212 since these entities' core business involves extensive use of expensive imaging equipment and laboratory equipment to collect and analyze specimens. Within this group, the share for 621512 (Diagnostic Imaging Centers) is assumed to be higher than the share for 621511 (Medical Laboratories) due to the fact that some imaging equipment is very expensive (millions of dollars per unit).

Our estimates, consistent with the weighted average for Subsector 621 (65.3%) and the ordinal assumptions above, range between 35% (6213) and 92% (621512).

MDE Standards do not apply to all durable medical equipment used by health providers.[88] Hence, we need to estimate separate medical CAPEX expenses for MDE covered by Subpart J from expenses for all other medical equipment.

We base our estimates of the fraction of medical CAPEX on equipment covered by MDE Standards on a study the Minnesota Department of Health published in 2019 regarding all types

[88] A patient may need an accessible examination table in order to receive an electrocardiogram or a sonogram diagnostic evaluation, but the electrocardiogram machine or the sonogram machine themselves are not pieces of equipment the Access Standards apply to because no patient will lie or sit on them.

of health providers' large capital projects in the State (MN Study).[89] The MN Study includes not only data on the share of total CAPEX spent on medical equipment but also data on medical CAPEX across different types of medical equipment.

Our estimates for the share of total CAPEX spent on medical equipment noted above are roughly consistent with those in the MN Study, especially for hospitals and diagnostic imaging centers. These entities are typically large and so are their typical capital expense projects (a single diagnostic imaging machine may cost more than one million dollars). Hence, the subset of CAPEX covered by the MN Study data (in dollars terms) is likely close to the whole CAPEX for general hospitals and diagnostic imaging centers, and our estimates are close to the figures in the report as expected. The MN Study includes data on the proportion of medical CAPEX on different types of medical equipment. The report states "More than one third of major spending commitments (37.7%) was devoted to diagnostic imaging equipment including magnetic resonance imaging (MRI), computed tomography (CT), and other imaging."

CAPEX for "surgical equipment" account for 14.6% of medical equipment, with the remaining 47.7% spent on other medical equipment (including radiation oncology equipment). We assume surgical equipment is not covered by the MDE Standards. Our estimate of the portion of medical CAPEX expenditure covered by MDE Standards consists of the total amount

[89] Minn. Dep't of Health, Health Care Capital Expenditures in Minnesota - A Data Short Taken (Mar. 2019), https://www.health.state.mn.us/data/economics/docs/hccapexpmn.pdf. Under Minnesota law, large capital projects are those above $1 million (or above $0.5 million prior to 2002).

for diagnostic imaging equipment (33.7%) plus half of the money spent on other medical equipment (half of 47.7%), or 61.6%.

The 61.6% figure refers to all entities covered in the report, but it is mostly driven by hospitals (which account for about 75% of the total medical CAPEX). We apply the 61.6% figure to NAICS 6221, and use it as an anchor to assign figures to all other NAICS codes of interests based on these assumptions:

- *621512, Diagnostic Imaging Centers*: Since these entities' medical CAPEX is almost exclusively spent on equipment that patients need to access, we assume the fraction of medical CAPEX spent on equipment patient access is 150% of the anchor, or 92.33%.
- *6223, Specialty (except Psychiatric and Substance Abuse) Hospitals*: We assume the fraction is the same as the anchor fraction for general hospitals, or 61.6%.
- *6212, Offices of Dentists*: These entities make extensive use of both diagnostic imaging and examination chairs that need to be accessible. Hence, we estimate the fraction for these entities to be lower but close to the anchor, or 46.2% (75.0% of the anchor).
- *6214, 6219, Outpatient care centers and other ambulatory health care services*: As health conditions bringing patients to these ambulatory entities sometimes do not require expensive diagnostic imaging equipment often used at hospitals and in dentist offices, we assume that the fraction for these entities to be 50% of the anchor, or 30.8%.

- *621511, Medical Laboratories*: The estimated medical expense for these entities is a high share of total CAPEX (85%), but most of the medical equipment consists of laboratory machines that technicians — not patients — access and use. Hence, we assume that the share of medical CAPEX spent on accessible equipment (typically phlebotomy chairs at blood analysis laboratories) is 10% of the anchor, or 6.2%.

For all remaining NAICS codes, we assume the fraction is 25% of the anchor. Most (95%) of these expenses are incurred by Offices of Physicians (6211), Offices of Other Health Practitioners (6213) and Nursing and Residential Care Facilities (623). In these facilities we expect there to be accessible medical equipment consisting mostly of examination chairs and tables as well as weight scales, which are used alongside other electromedical equipment (including emergency equipment, e.g., defibrillator or oxygen machines) which need not be accessible and are sometimes quite expensive.[90]

We base our useful life estimates on several sources including: the Internal Revenue Service (IRS) Publication 946 ("How to Depreciate Property"); the Medicare Provider Reimbursement Manual; the American Hospital Association's "Useful Lives of Depreciable Hospital Assets"; and discussions with the Administration for Community Living (ACL) and ACL's partners with direct experience on this topic.

[90] The remaining 5% is incurred by Psychiatric and Substance Abuse Hospitals.

These sources report useful lives as short as five years for highly technical medical equipment, and longer useful lives for less complex equipment. The useful lives of examination tables and chairs fall in the range of 10 to 15 according to most sources.

With the exception of requirements for examination tables and weight scales (§84.92(c), *see infra* for how those requirements are accounted for), for our top-down approach we do not need cost estimates for each separate type of equipment. Instead, we need an estimated weighted average (by dollar value) across all MDE used by the entities belonging to the NAICS groups listed in Table 15.

We heuristically estimate such a weighted average based on reported useful lives by type of MDE, what is known about their prices (imaging equipment is far more expensive than examination tables and chairs), and the typical mix of MDE used in each group. For instance, we assume that useful life for Diagnostic Imaging Centers (NAICS code 621512) is five years, as these health providers' CAPEX on MDE comes mostly from highly technical equipment.

Table 16 reports estimated average useful lives and summarizes our results for the first step of our top-down approach. Column 5 reports yearly estimated expenses that recipients incurred in 2019 to buy replacement MDE units based on the final rules and according to their own preferences regarding whether to buy an accessible unit.[91]

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[91] Column 5 is the product of columns 1 through 4. The total value for Recipients as % of Industry (column 4) is a weighted average by number of employees (when weighed by CAPEX values in column 5, the weighted average share of recipients across all NAICS codes relevant for the analysis is 97.7% because of hospitals' large share of CAPEX and because 100% of them are recipients).

TABLE 16—ESTIMATED RECIPIENTS' MDE CAPEX AND AVERAGE USEFUL LIFE

NAICS Code	Industry	(1) Expenditures for new equipment, $M	(2) % spent on medical equipment	(3) % of medical CAPEX MDE Standards apply to	(4) Recipients as % of Industry	(5) Yearly MDE CAPEX, $M	(6) Estimated average useful life
6211	Offices of physicians	3,775	68.5%	15.4%	92.3%	367	11.25
6212	Offices of Dentists	2,184	78.4%	46.2%	43.0%	340	8.75
6213	Offices of Other Health Practitioners	1,463	35.5%	15.4%	92.3%	74	11.25
6214, 6219	Outpatient care centers and other ambulatory health care services	3,565	58.4%	30.8%	81.6%	523	10.00
621511	Medical Laboratories	928	85.4%	6.2%	100.0%	49	11.25
621512	Diagnostic Imaging Centers	481	92.7%	92.3%	100.0%	411	5.00
6221	General medical and surgical hospitals	27,238	78.6%	61.6%	100.0%	13,177	6.25
6222	Psychiatric and Substance Abuse Hospitals	393	30.6%	15.4%	100.0%	19	11.25
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	727	65.3%	61.6%	100.0%	292	6.25
623	Nursing and residential care facilities	2,434	28.2%	15.4%	65.1%	69	11.25
Total	N/A	43,188	N/A	N/A	85.4%	15,321	N/A

Step 2—Share of currently inaccessible MDE the final rule requires to replace with accessible equipment.

We estimate yearly CAPEX on MDE to be about $15 billion (Table 16). We now need estimates to answer these two questions:

First, how many billions of dollars out of these $15 billion would recipients have spent on inaccessible MDE absent the final rule? Supposing the answer to this question is $2 billion, the next question is, how much will this expenditure go up because recipients will now buy accessible MDE units that cost more than the inaccessible units?

We first assess the required percentages of accessible units and then review the available information regarding current percentages of accessible units. We use volume-based information to compute an "accessibility gap" — the difference between the two percentages — to be applied to the estimated CAPEX values. This will be the answer to the first question.

We recognize that volume-based accessibility gap figures are less than ideal since we want to apply these figures to CAPEX dollar amounts (value figures). Unfortunately, as noted above, detailed information about unit prices by MDE type is scarce.

However, our volume-based accessibility gaps distinguish between recipients who extensively use expensive diagnostic imaging equipment from those who do not. This way, we account for value differences to a large extent, ultimately producing reasonable best approximations to values-based accessibility gaps given available information.

Scoping requirements in § 84.92(b) depend on how many units are at a given location. Hence, for the regulatory impact assessment, information is needed not only about the number of

units in use but also about how these units are distributed across locations with at least one MDE unit (for example, at least one accessible examination table).[92]

The Organization for Economic Cooperation and Development (OECD) periodically compiles and publishes information about member countries' health resources, including the number of selected types of radiological equipment units in use.[93] According to the OECD, there were slightly above 70,000 units of OECD-selected types of radiological equipment in use in the United States in 2019.

The OECD data do not report how these units were distributed across locations, but the American College of Radiology (ACR) publishes a list of accredited locations by type of accreditation ("modality"), which correspond to the types of equipment (e.g., "Mammographs" and "Computed Tomography scanners" in the OECD's dataset terminology).[94] Table 17

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[92] Consider the general requirement for all medical diagnostic equipment ("at least one unit of each type of equipment in use, or 10% of the total number, whichever is higher"). Suppose for instance that 1,000 units are distributed across 100 locations, each having at least one. When 99 locations have 1 unit and 1 location has 991, the 10% scoping requirement calls for 99+ceiling (10% of 991) = 99+100 = 199 accessible units in total. Instead, when 100 locations each have 10 units, the 10% scoping requirement calls for 100 accessible units in total (one at each location), which is about ½ of the 199 units in the previous scenario. This example illustrates that units' distribution matters: For a given percentage and a given number of locations having at least one unit, the more evenly distributed the units are, the lower the number of units that need to be accessible.

[93] Org. for Econ. Coop. & Dev., *Health Care Resources*, https://stats.oecd.org/index.aspx?DataSetCode=HEALTH_REAC (last visited Sep. 13, 2022).

[94] Am. Coll. of Radiology, *Accredited Facility Search*, https://www.acraccreditation.org/accredited-facility-search (Last visited June 19, 2022). We use the list as of June 19, 2022 (lists as of previous dates, including dates in year 2019, are not publicly available). The number of mammography machine locations from ACR closely match the number from the list (as of August 31, 2020) published by the U.S. Food and Drug Administration. U.S. Food & Drug Admin., Search for a Certified Facility, (last updated Aug. 31, 2020), https://www.fda.gov/radiation-emitting-products/consumer-information-mqsa/search-certified-facility.

combines OECD data on units and ACR data on locations and calculates the average number of units per location.[95] The averages by type suggest that the typical location will need to have one accessible unit to meet the scoping requirement regardless of whether it is at least 10% (1 in 10) or at least 20% (1 in 5), excluding radiation therapy equipment. For radiation equipment, the typical location will have five or six units (average is 5.63); locations with six units will be just above the threshold triggering the need for two units instead of one when using a 20% scoping requirement.

[95] ACR values for "modality" are associated to OECD types as follows (ACR modality in parentheses): Computed Tomography scanners (CTAP), Gamma cameras (NMAP), Magnetic Resonance Imaging units (BMRAP, MRAP), Mammographs (MAP), Positron Emission Tomography (PET) scanners (PETAP), Radiation therapy equipment (RO).

TABLE 17—RADIOLOGY EQUIPMENT UNITS AND LOCATIONS

Scoping	Equipment Type	Units	Locations	Average Units per Location	Lowest required number of accessible units	Highest required number of accessible units
10%	Computed Tomography scanners	14,750	7,138	2.07	7,138	7,899
10%	Gamma cameras	16,010	3,287	4.87	3,287	4,559
10%	Magnetic Resonance Imaging units	13,275	7,671	1.73	7,671	8,231
10%	Mammographs	20,952	8,286	2.53	8,286	9,552
10%	Positron Emission Tomography (PET) scanners	1,790	1,632	1.10	1,632	1,647
10%	Radiation therapy equipment	3,850	684	5.63	684	1,000
10%	**Total**	**70,627**	**28,698**	**2.46**	**28,698**	**32,888**
20%	Computed Tomography scanners	14,750	7,138	2.07	7,138	8,660
20%	Gamma cameras	16,010	3,287	4.87	3,287	5,831
20%	Magnetic Resonance Imaging units	13,275	7,671	1.73	7,671	8,791
20%	Mammographs	20,952	8,286	2.53	8,286	10,819
20%	Positron Emission Tomography (PET) scanners	1,790	1,632	1.10	1,632	1,663
20%	Radiation therapy equipment	3,850	684	5.63	1,114	1,317
20%	**Total**	**70,627**	**28,698**	**2.46**	**29,128**	**37,081**

The top panel of Table 17 estimates how many units should be accessible when the scoping requirement is at least 10% under two alternative scenarios (see footnote 92 for a numerical example of the calculations).

Under the "highest" scenario, each location except one hosts exactly one unit (which needs to be accessible), with the lone remaining location hosting all other units. Among the many units at the lone location hosting more than one unit, 10% need to be accessible. This uneven and unrealistic distribution adds many more required accessible units to the overall count.

Under the "lowest" scenario, units are evenly distributed across locations. Each location has as many units as the integer part of the average (e.g., two when the average is 2.07), with some locations having another unit (but no location having two more). This more realistic distribution minimizes the number of required accessible units.

The bottom panel of Table 17 estimates how many units should be accessible when the scoping requirement is at least 20%.

Note that Table 17 reports figures subject to a 20% scoping requirement for each type of equipment to illustrate the impact of moving from a 10% to a 20% scoping requirement (which will likely not be realistic in all cases because some types of MDE are not used in facilities specializing in rehabilitation of patients with mobility conditions).

The scenario where units are distributed evenly is the closest to reality, as a single location with hundreds of units while all other locations only have one (the most uneven distribution) is a theoretical construct not occurring in practice. Table 17 indicates that under the most realistic scenario, the average "effective scoping" by volume — that is, the percentage of total units that would be accessible, taking into account the distribution across locations — is around 41% (about 29,000 out of 71,000) under both 10% and 20% scoping.[96] Under a 10% requirement, the effective scoping is 40.6% (28,698 divided by 70,627).

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[96] The average effective scoping is a weighted average of scoping by type, where weights are the units of each type. We expect the effective scoping to be higher when weighting by value (units times dollar value per unit) since the more expensive a unit is, the fewer such units you would expect to find at each given location. This fact implies required accessibility volume-based figures closer to 100% for expensive MDE, which will be given more weight in a value-based weighted average.

The types of equipment in Table 17 share distinctive features: they are large, technologically complex, and innovative and therefore expensive, although prices are often not publicly listed and are typically bilaterally and privately negotiated on a transaction-by-transaction basis.

For mass-produced, less expensive, and less complex/innovative types of diagnostic equipment (e.g., weight scales, exam tables, and chairs), we are not aware of any data sources reliably reporting either number of units in use or their distribution across locations. Given this lack of data, we can only estimate the number of units in use and their locational distribution for types of MDE found in an approximately fixed proportion to the number of health providers at a location. For instance, exam tables or chairs can be reasonably assumed to be found in an approximately 1:1 fixed proportion relative to diagnosing health care workers. That is, it is reasonable to assume each diagnosing health care worker has one exam table or chair in an ambulatory care setting.

In these circumstances — fixed proportions between equipment type and number of diagnosing health care workers in ambulatory settings (Subsector 621) — we can leverage U.S. Census Bureau and Bureau of Labor Statistics (BLS) data (on number of establishments, their

distribution by number of employees at a location, and employees' occupations) to approximate the effective scoping requirement. We do this next.[97]

Table 18 shows that many ambulatory establishments are very small. For all ambulatory services' Industry Groups except Outpatient Care Centers (6214), about 75% or more of the offices have fewer than nine employees.[98]

[97] The approach cannot be relied upon for types of equipment which are used in ambulatory settings but are not necessarily used in a fixed proportion to the number of diagnosing health workers. For instance, weight scales are typically used in ambulatory setting, but while a practice with a single doctor will have one scale and one exam table/chair (1:1 for both types of equipment), an ambulatory setting with ten doctors' offices may have an exam table or chair in each office (1:1) or possibly one (or few) weight scales used when check-in personnel collect medical information (weight, temperature, blood pressure) before the doctor's visit. Hence, the doctors-to-scales proportion cannot be reliably assumed to be fixed: each ambulatory practice will determine what is the most appropriate number of scales based on its particular circumstances.

[98] Establishment distribution by size comes from the BLS' Quarterly Census of Employment and Wages (First Quarter, 2019). U.S. Dep't of Lab., Bureau of Lab. Stat., Quarterly Census of Employment and Wages, https://www.bls.gov/cew/ (last visited Sep. 13, 2022). Total number of establishments, total number of employees (Census), and share of employees who are "Diagnosing or Treating Healthcare Practitioners" come from BLS data. U.S. Dep't of Lab., Bureau of Lab., Statistics, Occupational Employment and Wages - May 2019 (Mar. 31, 2022), https://www.bls.gov/news.release/archives/ocwage_03312020.pdf.

TABLE 18—DISTRIBUTION OF ESTABLISHMENTS BY EMPLOYMENT SIZE, SUBSECTOR 621

	6211 Offices of Physicians	6212 Offices of Dentists	6213 Offices of Other Health Practitioners	6214 Outpatient Care Centers
% of establishments with fewer than 5 employees	54.08	38.73	66.58	32.40
% of establishments with 5 to 9 employees	19.52	37.75	18.87	17.67
% of establishments with 10 to 19 employees	13.48	19.09	9.43	21.79
% of establishments with 20 to 49 employees	8.97	4.00	3.87	18.89
% of establishments with 50 to 99 employees	2.45	0.32	0.79	5.54
% of establishments with 100 to 249 employees	1.11	0.09	0.37	2.64
% of establishments with 250 to 499 employees	0.26	0.02	0.07	0.71
% of establishments with 500 to 999 employees	0.09	0.01	0.03	0.22
% of establishments with 1000 or more employees	0.04	0.002	0.01	0.14
Number of establishments	222,880	136,422	164,708	47,895
Total number of employees in all occupations	2,550,425	975,666	963,091	1,172,186
Diagnosing or Treating Healthcare Practitioners as % of Total Employees	31.2	33.5	28.5	25.0
Number of Diagnosing or Treating Healthcare Practitioners employees	796,008	327,327	274,167	293,038

Under the assumption that there is one unit of equipment for each "Diagnosing or Treating Healthcare Practitioners" employee, we can distribute the number of equipment units (equal to the number of health workers in the bottom row of Table 18) consistent with the establishment size distribution, and then apply the scoping requirement (10% or 20%) to compute the effective scoping on a per-location (establishment) basis.[99] Table 19 reports the estimated effective scoping under this assumption.

[99] Consider for instance Offices of Physicians, where about 31.2% of employees are health workers. We apply this percentage to the upper and lower bounds of establishment sizes to approximate a lower and upper bound of health workers at each establishment size: for instance, for "5 to 9 employees", the lower

TABLE 19—ESTIMATED EFFECTIVE SCOPING FOR MDE IN 1:1 PROPORTION TO HEALTH WORKERS AT A LOCATION

Industry Group:	6211 Offices of Physicians	6212 Offices of Dentists	6213 Offices of Other Health Practitioners	6214 Outpatient Care Centers
Percentage of units to be accessible under:10% scoping requirement	33.3	43.9	53.9	25.6
Percentage of units to be accessible under:20% scoping requirement	39.9	46.1	57.6	30.1

Table 19 suggests that the effective scoping requirements for MDE such as tables and chairs available at hundreds of thousands of doctors' offices will not be significantly different from scoping requirements for radiological equipment available at a few thousand locations. This is because the majority of recipients have fewer than five pieces of specific MDE, meaning that 10% of units, or at least one, and 20% of units, or at least one, would both amount to a single unit for those recipients. This means that small recipients, overall, incur low additional costs from the increase from 10% to 20%, and benefits to the public from that increase are limited.

During recent regulatory proceedings,[100] Midmark Corporation submitted public comments reporting statistics on the availability of height-adjustable accessible examination and

bound is 2 (rounding 31.2% of 5) and the upper bound is 3 (rounding 31.2% of 9). We then compute units in use and number of units expected to be accessible corresponding to lower bounds (a set of 9 numbers, one for each establishment size) on one hand, and corresponding to higher bounds on the other (for "5 to 9" employees the number is 1 in both cases). Finally, we pick the set of estimates based on either the lower or upper bound depending on which set of estimates is closer to the assumed number of units in use (796,008 in the example).

[100] Standards for Accessible Medical Diagnostic Equipment. 87 FR 6037 (Feb. 3, 2022).

procedure tables used by physicians, hospitals, and other health care providers.[101] Midmark's comments stated that "[s]ince 2001, the number of adjustable-height tables has steadily increased from 5%, but continue to represent a minority of examination and procedure tables in the United States with cost being one of the factors that limits full adoption." Figure 1 in these comments report that in 2021, an estimated 38% of the medical exam tables were height-adjustable; this percentage was 9%, 18% and 31% in 2006, 2011, and 2017, respectively.[102]

A report from a survey administered in the spring of 2018 evaluated MDE accessibility for patients with mobility disabilities in clinics of a large health care system in the South Atlantic division of the US.[103] For hospital-based clinics, 60% reported at least one wheelchair accessible scale, 72.4% of primary-care clinics reported at least one accessible scale, and 54.5% of the private diagnostic clinics reported at least one accessible scale. The percentages for the presence of at least one height-adjustable exam table were 95.2%, 99.0%, and 80.4%, respectively.

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[101] Midmark, Midmark U.S. Access Board Public Comment Submission, Comment ID: ATBCB-2022-0002-0073, https://www.regulations.gov/comment/ATBCB-2022-0002-0073 (last visited Sep. 13, 2022).
[102] To support these percentages, Midmark cites to "U.S. medical distribution sales data, as provided by Clarivate," a public company offering services that include analytics. Midmark did not provide additional citations for the methodology used to determine these percentages.
[103] Jennifer R. Pharr. et al., *Accessibility and Accommodations for Patients with Mobility Disabilities in a Large Healthcare System: How are we Doing?*, 12 Disability & Health J. 679, 682 Table 2 (2019).

A survey of 20 practicing physicians from five clinical specialties in Massachusetts between October 2017 and January 2018 reported 14 practices (70.0%) had height-adjustable examination tables and 7 (35%) had wheelchair accessible weight scales.[104]

A report described the disability accessibility level of primary care offices using on-site audits of 3,993 primary care offices in California for 2013–2016.[105] There was a height-adjustable examination table that lowers to 17–19 inches in 19.1% of the offices. A weight scale to accommodate a wheelchair or scooter user was present in 10.9%.

Based on a survey of 2,389 California primary health providers conducted between 2006 and 2010, an accessible weight scale was present in 3.6% and a height adjustable examination table in 8.4% of the sites.[106]

Unfortunately, the sources in the literature reviews above do not contain enough information about the distribution of accessible MDE units as a percentage of units at each surveyed location to deduce via a formula a nationwide accessibility percentage comparable to the effective scoping percentages contained in § 84.92(b).

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[104] Nicole Agaronnik et al., *Accessibility of Medical Diagnostic Equipment for Patients with Disability: Observations from physicians*, 100 Archives of Physical Med. & Rehab. 2032 (2019). The authors remark that: "Even if physicians have accessible equipment, they do not always use it in examining patients with disability."

[105] Nancy Mudrick et al., *Presence of Accessible Equipment and Interior Elements in Primary Care Offices*, 3 Health Equity 275, 277 Table 1 (2019).

[106] Nancy Mudrick et al., *Physical Accessibility in Primary Health Care Settings: Results from California on-site Reviews*, 5 Disability & Health J.159 (2012). These authors' final dataset consists of reviews conducted between January 2006 and September 2010.

Regarding MDE at dentist offices, we are not aware of recent statistics about percentage of accessible units. However, in December 2016, the U.S. Access Board reported that "[m]any dental chairs are height-adjustable; some are not" and "most dental chairs typically exceed the required dimensions of the transfer surface of diagnostic equipment used in a seated position."[107] We rely on this qualitative conclusion for our analyses.

Accessibility information on less ubiquitous, more complex, and expensive (most commonly radiological) MDE appears even more scarce than the already scant data on MDE such as exam tables and weight scales.

A survey of wheelchair users regarding their experiences with preventative radiological tests like a mammogram or a bone density test found that only 5% of respondents answered they did not have a bone density test because of "accessibility/other" reasons.[108] Fifteen percent of respondents answered that they did not have a mammogram for the same reason. In a best-case scenario, one could deduce that 95% of bone density machines and 85% of mammography machines comply with accessibility standards.[109] However, it could also be possible that many wheelchair users — both those who had the tests and those who did not — were faced with inaccessible MDE, but most of them took the test anyway.

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[107] U.S. Access Board, Final Regulatory Assessment: Medical Diagnostic Equipment Accessibility Standards (Dec. 2016) https://www.access-board.gov/mde/regulatory-assessment.html.
[108] Michael Stillman et al., *Healthcare Utilization and Associated Barriers Experienced by Wheelchair Users: A Pilot Study*, 10 Disability & Health J. 502 (2017).
[109] This scenario requires assuming that each respondent who took the test did so because they encountered an accessible MDE unit at the radiology location, and each respondent who did not take the test encountered an inaccessible MDE unit.

While comprehensive accessibility information about less common MDE is scarce, anecdotal evidence suggests that the percentage of accessible units for uncommon MDE types could be higher than for MDE types found in almost all locations (i.e., practically each dentist office room has a dentist chair, and each family doctor room has an examination table or chair).

Unlike a family doctor serving a limited number of returning patients (possibly none of them needing accessible MDE), health providers using less ubiquitous MDE are likely to be specialists and thus logically attract larger numbers of patients for less frequent visits — hence they logically anticipate serving many patients with mobility disabilities. As compared to a small family doctor practice, these latter providers have stronger economic incentives to procure accessible MDE. They can spread their costs across many patients served, and benefit more from time cost savings (quicker visits) and by lowering nurse and technician safety costs[110] (fewer work days lost due to injuries sustained helping patients onto non-accessible MDE).

Table 20 reports our estimated accessibility gaps (column 3) as the difference between estimated effective scoping requirements under final rules (column 1) and estimated current accessibility (column 2).

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[110] *See, e.g.,* U.S. Dep't of Health and Human Servs., Admin. For Community Living, Wheelchair-Accessible Medical Diagnostic Equipment: Cutting Edge Technology, Cost-Effective for Health Care Providers, and Consumer-Friendly, https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Facl.gov%2Fsites%2Fdefault%2Ffiles%2FAging%2520and%2520Disability%2520in%2520America%2FMDE%2520Fact%2520Sheet%2520Final.docx&wdOrigin=BROWSELINK (last visited May 30, 2023).

TABLE 20—ESTIMATED ACCESSIBILITY GAP

NAICS code	Industry	[1] Effective scoping	[2] Current accessibility	[3] Accessibility gap
6211	Offices of Physicians	33.3%	15.0%	18.3%
6212	Offices of Dentists	43.9%	32.9%	11.0%
6213	Offices of Other Health Practitioners	53.9%	20.0%	33.9%
6214, 6219	Outpatient care centers and other ambulatory health care services	25.6%	14.1%	11.5%
621511	Medical Laboratories	33.3%	15.0%	18.3%
621512	Diagnostic Imaging Centers	40.6%	22.3%	18.3%
6221	General medical and surgical hospitals	40.6%	22.3%	18.3%
6222	Psychiatric and Substance Abuse Hospitals	25.6%	15.0%	10.6%
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	30.1%	16.6%	13.5%
623	Nursing and residential care facilities	30.1%	15.0%	15.1%

We estimated the effective scoping requirements in column 1 as follows:

- For NAICS codes 6211 to 6214 and 6219, we adopt the effective scoping figures in Table 19 under a 10% requirement, as we expect few of these recipients specialize in rehabilitation of patients with mobility-related conditions.
- For general hospitals (6221) and Diagnostic Imaging Centers (621512), which incur large CAPEX expenses in imaging equipment, we use the 40.6% figure (under a 10% requirement) derived from Table 17.
- For NAICS codes 6223 and 623, we use the figure for Outpatient Care Centers (6214) under a 20% requirement from Table 19 to account for the fact that these recipients rehabilitate patients with mobility-related impairments (hence the effective scope is higher) but with relatively larger establishments (a factor reducing effective scoping levels).

- For Medical Laboratories (621511, e.g., blood test laboratories) we adopt the figure for offices of physicians (6211), because of similarities between the two groups — both typically have establishments with few rooms, and each room typically has MDE (a phlebotomy chair or an exam table, depending on the group).
- For Psychiatric and Substance Abuse hospitals (6222), we use the figure for NAICS code 6214 under a 10% requirement from Table 19 to account for the relative larger size of these inpatient establishments (comparable to outpatient centers) and the fact that these hospitals do not treat mobility-related conditions.

We estimated the percent of currently accessible MDE in column 2 as follows:

- Based on qualitative information discussed above pointing to most equipment having critical features that comply with MDE standards, for offices of dentists (6212) we estimate current accessibility at 75% of required accessibility in column 1.
- For Offices of Physicians (6211) we rely on estimates of accessibility for examination tables/chairs, as these items are the most ubiquitous MDE at these establishments, while imaging equipment is found less often. While we recognize that several sources — including some referring to the whole nation, rather than states or regions — report accessibility percentages above the required scoping in column 1, we estimate a positive accessibility gap still exists, so incremental costs are not zero. Our estimate is 15%, which lies between (but less than halfway between) the 8.4% in Mudrick et

al. (2012) and the 38% reported in Midmark's comments (see above) — and still below the 19.1% reported in Mudrick et al. (2019).[111]

- For NAICS code 6223 (psychiatric and substance abuse hospitals) and 623 (nursing homes) we apply the 15% estimate for NAICS code 6211 because both of these recipients typically use non-electromedical MDE (tables, chairs, etc.) and the medical offices at the latter facilities can be likened to offices of physicians.
- For medical laboratories (621511) we use the 15% estimate for 6211 for the same reasons discussed above for the value used in column 1.
- For 6213 (Offices of Other Health Practitioners), there are, in principle, reasons to use the same 15% estimate for 6211, as the major difference between the two groups is the degree or certification the diagnosing health provider holds. However, we recognize that associating such estimate to the 53.94% in column 1 — an estimate driven by the fact that 6213 includes many very small establishments — would imply that 6213 recipients are very far away (almost ¾ of the way) from meeting the effective scoping requirements as compared to 6211 recipients, without a logical connection to the major difference between the two groups (the medical degree or certification). In order to properly estimate the progress made by recipients in code 6213 in support of people with mobility impairments, we use a 20% estimate that

[111] Midmark, Midmark U.S. Access Board Public Comment Submission, Comment ID: ATBCB-2022-0002-0073, https://www.regulations.gov/comment/ATBCB-2022-0002-0073 (last visited Sep. 13, 2022).

estimates NAICS code 6213 recipients are comparable to 6211 recipients in their effective scoping — that is, almost half of the way there.

- For the remaining NAICS codes, we estimate that current accessibility is 55% of required accessibility. In other words, we assume that larger recipients that typically use expensive electromedical MDE alongside MDE like scales, tables, and chairs, are already more than half the way to meeting the required scoping. Given academic evidence from Stillman et al. (2017) and anecdotal evidence discussed above, the unknown true value could be higher than our estimate, but at the moment we are not aware of public information conclusively proving this conjecture.

Step 3—Estimating purchasing costs.

Having estimated the yearly amount recipients spend on purchasing MDE (Table 16) and the increase in expense to meet scoping rules (the accessibility gap in Table 20), we must attempt to quantify by how much the CAPEX invoice will increase because accessible equipment is more expensive.

Our approach facilitates this task because we do not need to collect information on *individual prices* (*dollar levels*) for each MDE item in both its inaccessible and accessible versions. For our purposes, we need only estimate the percentage increase for the pre-regulation overall CAPEX bill — because the estimated overall CAPEX bill, with adjustment for accessible devices in the baseline stock, already summarizes inaccessible price levels and quantities for a myriad of different units. Therefore, a single percentage figure estimate (for each NAICS code) will suffice to complete our analysis.

While our approach facilitates the final step of the analysis, estimating the percentages of interest remains a difficult task given data availability challenges.

Where available (more often for scales, exam tables and chairs), we used price evidence from different sources, including price data from the December 2016 U.S. Access Board Final Regulatory Assessment,[112] information from ACL staff and ACL's partners, stakeholders' public comments in previous relevant regulatory proceedings, and web sources to guide Departmental evaluations of percentages of interest. We complement our base estimates for the percentages of interest with lower-bound and upper-bound estimates that, compared to our base estimate, yield a sufficiently wide confidence interval around our reasonable base estimate.[113]

Table 21 below combines estimates in Table 16 and Table 20 with our base estimates of how much higher (in percentage terms) invoices for accessible MDE are relative to inaccessible MDE, and ultimately quantifies one-time cost to bring inaccessible purchased[114] MDE into compliance as $1,637 million. Thereafter, incremental purchasing costs are estimated to be $213 million/year under the assumption that the increased accessibility trend observed up to 2019

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[112] *See* U.S. Access Board, Final Regulatory Assessment: Medical Diagnostic Equipment Accessibility Standards (Dec. 2016), https://www.access-board.gov/mde/regulatory-assessment.html. In particular, our base estimates were informed by a comparison between the highest manufacturer suggested retail prices for lower-cost products (as a proxy for inaccessible MDE) and corresponding lowest prices for higher-cost products.

[113] *See* Table 22. We triangulated our base estimate with Census data on revenues, number of recipients and their establishments to confirm that our base estimates yield realistic figures for each industry as a whole and the typical provider within it—with the understanding the actual impact on a specific individual provider may differ greatly from the average.

[114] Purchases include both capital leases and outright purchases. Operational leases are not included and discussed separately. *See infra*.

noted above fades and, absent the final rule, accessibility would not further increase (nor decrease).

We illustrate below how we arrived at our base estimates for incremental purchasing cost.

TABLE 21—INCREMENTAL PURCHASING COSTS, BASE ESTIMATE

NAICS Code	Industry	[1] Purchasing invoice % increase	[2] MDE stock value ($M)	[3] % inaccessible	[4] Adjustment factor	[5] Adjusted MDE stock value ($M)	[6] Accessibility gap	[7] One-time incremental purchasing cost ($M) to bring MDE to compliance	[8] Recurring incremental purchasing cost ($M) after compliance achieved
6211	Offices of Physicians	50%	4,128	85%	1.08	3,840	18.3%	350	31
6212	Offices of Dentists	50%	2,974	67%	1.16	2,554	11.0%	140	16
6213	Offices of Other Health Practitioners	50%	830	80%	1.10	754	33.9%	128	11
6214, 6219	Outpatient care centers and other ambulatory health care services	5%	5,232	86%	1.01	5,196	11.5%	30	3
621511	Medical Laboratories	50%	549	85%	1.08	511	18.3%	47	4
621512	Diagnostic Imaging Centers	5%	2,056	78%	1.01	2,033	18.3%	19	4
6221	General medical and surgical hospitals	5%	82,358	78%	1.01	81,448	18.3%	745	119
6222	Psychiatric and Substance Abuse Hospitals	50%	208	85%	1.08	194	10.6%	10	1
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	50%	1,827	83%	1.08	1,687	13.5%	114	18
623	Nursing and residential care facilities	50%	774	85%	1.08	720	15.1%	54	5
All Codes in Table	**All Industries in Table**		**100,936**					**1,637**	**213**

Column 1 lists our base estimates for percentage increase in MDE purchase invoices. Column 2 reports the total stock value of the MDE capital; that is the product of Table 16's columns 5 and 6.[115]

Column 3 reports our *volume-based* estimates of inaccessible units, and column 5 reports our estimate of how many additional accessible MDE units are needed to achieve compliance. For instance, at Offices of Physicians (NAICS code 6211) 85 units out of 100 are inaccessible (column 3) and about 18 additional units should be made accessible to achieve compliance (column 5).

Since the MDE stock value in column 2 consists of both accessible and inaccessible MDE, we cannot directly apply column 3's *volume-based* percentage (i.e., take 85% of $4,128 for NAICS code 6211) to compute the expenses associated with inaccessible units. If we did that, we would double-count higher-priced accessible MDE: e.g., for NAICS code 6211, 15 out of 100 units are already accessible (and cost 50% more than the inaccessible version, see column 1), and this fact drives up the total stock value in column 2 to $4,128. The stock value would be lower if the stock consisted of all inaccessible units.

In order to avoid over-estimation due to double counting, we compute the total MDE stock value as if it all consisted of inaccessible units (and report it in column 5), as explained

[115] For instance, in Table 16, NAICS code 6211 MDE is estimated to last 11.25 years, and $367 million worth of it (a flow figure) is replaced every year. Hence 11.25 times $367 million ($4,128 million) is an estimate of its stock value.

below. Once we have computed this figure, we can directly use the volume-based percentage of additional units to be made accessible (column 6) and the extra cost of an accessible unit (column 1) to compute incremental compliance costs.

We compute the total MDE stock value as if it all consisted of inaccessible units as follows. Column 3 lists our estimate of the portion of total value corresponding to inaccessible MDE. For instance, it is 85% for NAICS code 6211. Setting the value of inaccessible MDE to one, and the value of accessible MDE to 1.50 (from column 1), the adjustment factor should be 1*0.85+1.50*0.15=1.08 (column 4). By dividing $4,128 by 1.08 (column 5), we adjust the NIACS code 6211 stock value to measure its worth as if it all consisted of inaccessible MDE — a value free from double-counting that we can now use.

The product of adjusted stock value (column 5), accessibility gap (column 6) and base percentage bill increase (column 1) yields our base estimates by NAICS code (column 7), which totals $1,637 million one-time cost to bring current MDE into compliance.

After achieving compliance, recipients' stock value will be higher due to a larger share of units (see column 6) consisting of higher-value (see column 1) accessible MDE. This in turn will result in future higher yearly CAPEX flows to replace equipment at the end of useful life.

Column 7 reports these incremental costs above the current yearly expenses (Table 16, column 5).[116]

The flows on Column 7 are obtained by dividing the dollar values in Column 7 (one-time costs) by corresponding estimated average useful life. These flows also represent the incremental amount recipients spend when purchasing accessible MDE to replace inaccessible MDE, corresponding to the "accessibility gap," that has reached the end of its useful life (see *infra* on how this property of the values in Column 7 is leveraged when taking into account the timing of acquisition of accessible MDE to achieve required compliance).

Because accessibility is on an upward trend (per the discussion elsewhere in this regulatory impact analysis), the accessible percentages reflected in ongoing purchases would be higher than Column 3's accessible percentages for the device stock; the result would be some misestimation in Columns 4, 5, 7 and 8.[117]

Table 22 reports our upper and lower bound estimates around our base estimate for the MDE purchasing invoice increase, and the implied dollar amounts for one-time and recurring

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[116] The yearly CAPEX for each year after achieving compliance is obtained by first summing Table 21's columns 2 and 7 (to obtain the new and higher stock value of MDE), then dividing this sum by estimated average useful life's length (Table 16, column 6) to obtain a flow value — higher than the current level in Table 16, column 5. Column 8 reports the difference between these two flow figures.

[117] The Department is aware that there may be supply issues for accessible MDE if a significant number of recipients seek to purchase accessible MDE in the next two years. Demand would rise in the short term (i.e., the two years provided to achieve compliance with the medical exam table and weight scales requirement), but lack of data creates challenges with determining if and to what extent supply would increase, preventing a sizable increase in accessible MDE price that would occur if recipients were to compete for MDE units under no increase in supply.

incremental purchasing costs. These upper and lower estimates are obtained by applying the adjustment described above (omitting columns pertaining to intermediate steps for brevity's sake).

TABLE 22—INCREMENTAL PURCHASING COSTS: UPPER AND LOWER BOUND ESTIMATES

NAICS code	Industry	Invoice % increase, lower bound	Invoice % increase, base	Invoice % increase, upper bound	1-time cost ($M), lower bound	**1-time cost ($M), base**	1-time cost ($M), upper bound	Recurring cost ($M), lower bound	**Recurring cost ($M), base**	Recurring cost ($M), upper bound
6211	Offices of Physicians	25%	**50%**	150%	175	**350**	1,051	16	**31**	93
6212	Offices of Dentists	25%	**50%**	150%	70	**140**	420	8	**16**	48
6213	Offices of Other Health Practitioners	25%	**50%**	150%	64	**128**	384	6	**11**	34
6214, 6219	Outpatient care centers and other ambulatory health care services	2%	**5%**	8%	12	**30**	45	1	**3**	4
621511	Medical Laboratories	25%	**50%**	150%	23	**47**	140	2	**4**	12
621512	Diagnostic Imaging Centers	2%	**5%**	8%	7	**19**	28	1	**4**	6
6221	General medical and surgical hospitals	2%	**5%**	8%	298	**745**	1,117	48	**119**	179
6222	Psychiatric and Substance Abuse Hospitals	25%	**50%**	150%	5	**10**	31	0.5	**1**	3
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	25%	**50%**	150%	57	**114**	343	9	**18**	55
623	Nursing and residential care facilities	25%	**50%**	150%	27	**54**	163	2	**5**	15
All codes	**Total**				**739**	**1,637**	**3,722**	**94**	**213**	**449**

Our assessment of incremental purchasing costs assumes that all recipients will comply with scoping requirements by buying accessible MDE when existing MDE comes to the end of its useful life and needs to be replaced.[118] Examination tables and weight scales are an exception to this general rule since §84.92(c) requires recipients with at least one of these units to acquire one accessible version within two years. Dealing with this specific exception would require the sort of very detailed information that prevented a bottom-up cost quantification in the first place. Within the top-down approach employed, newly acquired accessible exam tables and weight scales under §84.92(c) are accounted for by requiring the replacement of CAPEX MDE under NAICS code 6211 to take place within two years rather than at the end of the useful life.[119] The timing and value of incremental expenses to meet scoping requirements is summarized in Table 23, with accessibility gaps decreasing in each year after implementation of the rule and full compliance being achieved between two years or in the year when all existing equipment in place at implementation reaches the end of its useful life.

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[118] Some recipients may take advantage of equivalent facilitation provisions under § 84.92(d) or be exempt under § 84.92(f). Data availability issues discussed *supra* prevent a meaningful and reliable quantification of savings recipients may achieve by not purchasing accessible MDE.

[119] This approach is consistent with the fact that NAICS code 6211 consists mostly of small family doctors' offices which are expected to have one examination table and one weight scale, while other doctors' offices (for instance dentists) typically use chairs. Of course, some family doctors may use examination chairs rather than examination tables; on the other hand, small recipients in other NAICS codes (small practitioners' offices, small ambulatory clinics, small rural hospital, small nursing homes) may have a single inaccessible examination table and a single inaccessible weight scale to be replaced within two years. (It is expected that recipients large enough for scoping requirements to call for two units will have one and will buy the other required accessible unit(s) when replacing the inaccessible ones.)

TABLE 23—TIMING OF INCREMENTAL PURCHASING COSTS, $ MILLION (2019)

NAICS code	1 year after implement ation	2 years after implement ation	3-12 years after implement ation	13 years after implement ation	14 years after implement ation	15-24 years after implement ation	25 years after Implement ation
6211	175	175	0	175	175	0	175
6212	16	16	16	16	16	16	16
6213	11	11	11	11	11	11	11
6214, 6219	3	3	3	3	3	3	3
621511	4	4	4	4	4	4	4
621512	4	4	4	4	4	4	4
6221	119	119	119	119	119	119	119
6222	1	1	1	1	1	1	1
6223	18	18	18	18	18	18	18
623	5	5	5	5	5	5	5
Total	**357**	**357**	**181**	**357**	**357**	**181**	**357**

The NPRM's preamble sets forth alternative methods (not purchases) by which recipients can comply with program accessibility requirements. Below, we consider one of these alternatives, and quantify the reduction in incremental purchasing costs reported in Table 21, Table 22 and Table 23.

Where doctors at a medical practice have staff privileges at a nearby location like a local hospital that has accessible MDE, the medical practice could schedule its doctors to see patients there rather than at the medical practice.

We rely on NEHRS 2021 data to estimate that 2.2% of physicians (NAICS code 6211) currently see their patients in their own office as well as at other locations that are likely to have accessible MDE.[120]

Reducing NAICS code 6211 incremental costs in Table 21 by 2.2% yields $342.7 million in one-time costs instead of $350 million (a $7.7 million reduction), and $30.5 million in recurring costs instead of $31.1million (a $0.7 million reduction).[121]

When expressed as a percentage of *total* incremental costs (not just NAICS code 6211) — i.e., $1,637 million in one-time costs, $213 million in recurring costs — these reductions are 0.5% and 0.3%.[122]

f. Estimating incremental acquisition costs from operational leases.

Health providers procure MDE not only via outright purchases but also via operational leases. With an operational lease, the health provider pays recurring rental fees to the lessor, who

[120] We limit our attention to NEHRS respondents who participate in Medicare, Medicaid or both (i.e., only those who work for recipients). We count doctors who meet all three of these conditions: 1) see patients at more than one location; 2) the private practice location is not the location where they see most patients, and 3) they are affiliated with a Physician Hospital Organization or an Independent Practice Association.

[121] The same 2.2% reduction applies to NAICS code 6211 lower and upper bound figures in Table 22, which are not reported for brevity's sake.

[122] The Department is aware that there may be supply issues for accessible MDE if a significant number of recipients seek to purchase accessible MDE in the next two years. Demand would rise in the short term (i.e., the two years to achieve compliance with the medical exam table and weight scales requirement), but lack of data creates challenges with determining if and to what extent supply would increase, preventing a sizable increase in accessible MDE price that would occur if recipients were to compete for MDE units under no increase in supply.

in turn retains ownership of the equipment in use at the lessee's location and replaces it as needed.

Our estimates of incremental acquisition costs via operational leases are based on public BEA Input-Output Accounts data,[123] in particular, figures for BEA code 532RL, "Rental and leasing services and lessors of intangible assets." We cannot rule out that some portion of the expenses included under this code are capital lease expenses. In what follows, we assume 100% of these expenses are for operational leases.

The highest level of detail for BEA data is at the Subsector level. In 2019, 532RL expenses were $5,844 million for Ambulatory health care services (NAICS code 621), $5,765 million for Hospitals (622), and $829 million for Nursing and residential care facilities (623).

Our understanding is that, as far as MDE are concerned, operational leases are most common for high-value, complex diagnostic imaging equipment and much less common for MDE such as scales or examination tables.

This circumstance suggests that it is reasonable to apply the same top-down approach we applied to CAPEX figures to these "Rental and Lease" expenses to Subsector 622, where high-cost diagnosing equipment is prevalent.

We note however that the combined 532L expenses for Subsector 621 and 623 — two subsectors where potential use of operational leases is likely mostly limited to Diagnostic

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[123] U.S. Dep't of Comm., Bureau of Econ. Analysis, Input-Output Accounts Data, Use Tables 71 Industries (2019), https://www.bea.gov/industry/input-output-accounts-data (last visited Sept. 13, 2022).

Imaging Centers (621512) — far exceed those for Subsector 622. Applying the top-down approach to Subsectors 621 and 623 will likely grossly overestimate incremental leasing costs. To avoid overestimation, we only include National Industry 621512 from Subsector 621.

For Subsector 622, we use detailed information about each component (including 6221, 6222 and 6223) in Table 16, Table 21, and Table 22 to compute weighted averages (by dollar value) of key figures to implement our approach: fraction of total expense spent on MDE, accessibility gap, percentage bill increase, etc. We use these figures to yield estimates for recurring yearly incremental expenses in Subsector 622 under base, lower, and upper bound scenarios as we do in Table 22. The estimates are (in millions) $30.3, $12.7, and $52.5, respectively.

Our estimate for NAICS code 6215111 is obtained as follows: Our base estimate equals 2.7% of the $30.3 million figure for Subsector 622. The 2.7% figure is the ratio between 621511 recurring yearly incremental costs in Table 22 and the corresponding sum of the three Subsector 622 components ($4 million divided by $138 million). The same approach is applied separately to yield lower and upper bound estimates (the percentage increases are 2.6% and 2.4%, respectively).

In conclusion, our base estimate of incremental acquisition costs from operational leases are $31.1 million/year, with a $13.0 million/year and $53.8 million/year lower and upper bound estimates, respectively (in 2019 dollars).

g. Qualified staff costs under § 84.94.

Section 84.94 requires qualified staff that are able to successfully operate accessible MDE as an essential part of ensuring access to MDE. The Department expects most recipients will meet this requirement via training of relevant — but not all — of their staff. Relevant staff includes not only workers who operate MDE and thus interact with patients, but also those whose role is the creation and implementation of the policies and procedures in achieving compliance with the requirements in subpart J.

Health providers already sustain costs to train staff on how to use MDE and individuals with disabilities' needs regarding access to MDE. Our goal is to estimate *incremental* training costs associated with the *incremental* investment in MDE brought about by subpart J. Accordingly, we connect our training cost estimates to the incremental acquisition costs, as described below.

We quantify incremental training costs by closely following the approach the Department recently adopted in its proposed rule to implement section 1557,[124] with a few minor changes as illustrated below. For consistency, we use the same BLS data we used for Table 12 (OES data for 2019).

[124] Nondiscrimination in Health Programs and Activities, 87 FR 47824-920 (Aug. 4, 2022).

We assume that 75% of total employees of recipients receive training, and that this training lasts one (1) hour. For all of the NAICS codes listed in Table 22, we count employees in the four of the five employment codes that the section 1557 NPRM considered, namely:

- Healthcare Diagnosing or Treating Practitioners (29-1000);
- Health Technologists and Technicians (29-2000);
- Healthcare Support Occupations (31-1000); and
- Medical and Health Services Managers (19-9111).

We exclude Office and Administrative Support Occupations (43-0000), as we expect these employees not to be overly involved in either physical patient interaction or creation and implementation of MDE accessibility policies.

We multiply employment counts for each occupation code and NAICS code by the corresponding percentage of recipients from Table 16 and the accessibility gap from Table 20. By doing so, we capture how many health providers are covered by the final rule and the incremental effort required over the levels they may already have in place for their existing MDE (some of which may be accessible). This step ensures that our incremental training cost estimates are linked to our incremental acquisition cost estimates.

We monetize expenses by multiplying the hours associated with employment counts by the corresponding fully loaded wage, which we set equal to two times the *median* hourly wage (the section 1557 NPRM's fully loaded wage is instead two times the *mean* wage). The estimated incremental training cost is $71.2 million, which will be incurred in the first year (in 2019 dollars).

Consistent with the section 1557 NPRM, we anticipate that this final rule results in incremental training costs associated with ongoing training, including annual refresher training for existing employees and training for new employees. As in the section 1557 NPRM, we quantify these costs as one-third of the first-year costs, or $23.7 million per year (in 2019 dollars).

h. Incremental cost summary.

We summarize out incremental costs estimates in Table 24 and Table 25 below. We used 2019 data — the last pre-pandemic year — and 2019 dollars for our estimates. According to BEA data,[125] $1 in 2019 corresponds to $1.134 in 2022. In the cost summary tables below, we inflate 2019 dollar values reported to assess costs evaluated in 2022 dollars. We report costs for five years following implementation of the final rule.

We report both undiscounted and discounted costs from the beginning of the five-year implementation period at either a yearly 3% or 7% discount rate. For instance, a $1 cost in year two corresponds to $0.873=$1/(1.07)^2 discounted dollars at a 7% discount rate.

For each discount factor, annualized values represent the annuity — a constant value to be paid at the end of each of the five years — that corresponds to the undiscounted year-by-year payments when discounted at either a 3% or 7% yearly rate.

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[125] We use BEA GDP deflator data. U.S. Bureau of Economic Analysis, "Table 1.1.9. Implicit Price Deflators for Gross Domestic Product," https://apps.bea.gov/iTable/?reqid=19&step=3&isuri=1&1921=survey&1903=13 (last visited Jan. 27, 2024).

Table 24 summarizes base estimate incremental costs — acquisition costs and qualified staff costs — as they vary from one year to the other. MDE acquisition costs are broken down in the two estimated components — purchases and leases.

TABLE 24—COST SUMMARY OF THE REGULATION FOLLOWING ENACTMENT OF THE FINAL RULE, BASE ESTIMATE, 2022 DOLLARS

Cost Description	Year 1	Year 2	Year 3	Year 4	Year 5	Total undiscounted	Annualized, 3% discount rate	Annualized, 7% discount rate
Acquisition § 84.92	437.5	437.5	239.8	239.8	239.8	1,594.3	322.4	327.0
§ 84.92: *purchases*	*402.3*	*402.3*	*204.7*	*204.7*	*204.7*	*1,418.7*	*287.3*	*291.8*
§ 84.92: *leases*	*35.1*	*35.1*	*35.1*	*35.1*	*35.1*	*175.6*	*35.1*	*35.1*
Qualified Staff § 84.94	80.4	80.4	26.8	26.8	26.8	241.1	49.2	50.4
Total	**517.8**	**517.8**	**266.6**	**266.6**	**266.6**	**1,835.4**	**371.6**	**377.4**

Table 25 compares total incremental costs under the base estimate to our lower and upper bound estimates.

TABLE 25—TOTAL COST SUMMARY, UPPER AND LOWER BOUNDS AROUND BASE ESTIMATE, 2022 DOLLARS

Cost description	Year 1	Year 2	Year 3	Year 4	Year 5	Total, undiscounted	Annualized, 3% discount rate	Annualized, 7% discount rate
Lower bound	282.0	282.0	129.6	129.6	129.6	953.0	193.3	196.8
Base estimate	**517.8**	**517.8**	**266.6**	**266.6**	**266.6**	**1,835.4**	**371.6**	**377.4**
Upper bound	1,135.1	1,135.1	488.5	488.5	488.5	3,735.7	758.7	773.6

i. Benefits.

Below we provide evidence that the provision's benefits are positive and likely significant.

The Department expects that there will be significant benefits to the final rule that will impact millions of individuals with mobility disabilities. The benefits will apply to those

recipients that currently do not meet the scoping requirements, or program accessibility requirements, of this section.

Drawing on qualitative research regarding the experiences of individuals with disabilities interacting with the medical system,[126] we specify three representative categories of benefits associated with the final rule and provide illustrative examples from the literature. These include inequitable treatment of individuals with disabilities by medical professionals (that is, individuals with disabilities receiving poor or inadequate care as a result of their disabilities as compared to similarly-situated individuals without disabilities); violations of dignity for individuals with disabilities who must encounter inaccessible MDE (that is, feelings of shame and humiliation during visits to medical facilities); and the diminishment of social standing and feelings of self-worth for individuals with disabilities as a result of being unable to access appropriate medical care (that is, the broader message sent by inaccessible MDE to individuals with disabilities about their standing and membership in society).

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[126] *See, e.g.*, Heather Becker et al., *Reproductive Health Care Experiences of Women with Physical Disabilities: A Qualitative Study*, 78 Archives of Physical Med. & Rehab. S-26 (1997); M. Drainoni et al., *Cross-Disability Experiences of Barriers to Health-Care Access*, 17 J. of Disability Pol'y Stud.101 (2006); M. Story et al., *Perspectives of Patients with Disabilities on the Accessibility of Medical Equipment: Examination Tables, Imaging Equipment, Medical Chairs, and Weight Scales*, 2 Disability &Health J. 169 (2009); Lisa I. Iezzoni, *Eliminating Health and Health Care Disparities Among the Growing Population of People with Disabilities*, 30 Health Aff.1947 (2011); M.T. Neri & T. Kroll, *Understanding the Consequences of Access Barriers to Health Care: Experiences of Adults with Disabilities*, 25 Disability & Rehab.85 (2003); M.D. Stillman et al., *Healthcare Utilization and Associated Barriers Experienced by Wheelchair Users: A Pilot Study*, 10 Disability & Health J. 502 (2017).

In the absence of accessible MDE, ranging from height adjustable exam tables and chairs to adjustable mammography imaging equipment, individuals with disabilities have been forced to endure incorrect diagnoses and treatments, delayed diagnoses, poor health outcomes, and even death. Some wheelchair users have reported decades of inadequate diagnostic services due to inaccessible MDE including doctors asking them to guess their own weight, cursory physical exams performed in their wheelchairs, and a complete lack of necessary gynecological exams.[127] Many individuals with disabilities may choose to avoid necessary medical care altogether because they dread the experience of dealing with inaccessible MDE, contributing to worse health outcomes. We attempt to place dollar values on the poor health outcomes experienced by individuals with disabilities due to inaccessible MDE below, including missed cancer diagnoses resulting in death.

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[127] Robyn M. Powell et al., *Becoming a Disabled Parent: Eliminating Access Barriers to Health Care Before, During, and After Pregnancy*, 96 Tulane L. Rev. 1, 32 (2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3808017; Caroline Signore et al., *The Intersection of Disability and Pregnancy: Risks for Maternal Morbidity and Mortality*, 30 J. of Women's Health 147 (Feb, 2021); Nat'l Council on Disability, The Current State of Health Care for People with Disabilities (2009), https://www.ncd.gov/publications/2009/Sept302009 (reporting that at that time, 54 million Americans with disabilities experienced health disparities and problems accessing health care and documenting the inability of people with mobility disabilities to access medical care due to exam tables and other medical diagnostic equipment that were not height-adjustable). In the over 10 years since NCD concluded that the lack of accessible examination equipment is one of the greatest barriers to quality health care in its 2009 report, these barriers persist. *See, e.g.*, Dep't of Health and Human Srvs., Admin. for Community Living, Wheelchair-Accessible Medical Diagnostic Equipment: Cutting Edge Technology, Cost-Effective for Health Care Providers, and Consumer-Friendly (2020), https://acl.gov/sites/default/files/Aging%20and%20Disability%20in%20America/MDE%20Fact%20Sheet%20Final.docx.

Qualitative research highlights the inequitable experiences of individuals with disabilities, sometimes resulting in delay of necessary care.[128] The following examples illustrate some of these experiences narratively to provide further context:

"It was so upsetting, the thought of even having to go (to her provider) was so distressing! I thought, 'screw it!' If I'm not going to die, if nothing horrible is happening to me, never mind!"[129]

"I'm going to be honest: I have avoided GYN exams. I'm a 31-year-old woman [and] I have not had a pelvic exam—I know it's shocking—ever, because of all these different complications, and fears, for multiple reasons. You know, it's hard to express that to my OB/GYN, because I have met with her. I had talked with her about what we would do when we do have the exam, and I always put it off because I'm just thinking of all of the planning and all the assistance that I'm going to need."[130]

(i) Unquantifiable benefits.

Violations of individual dignity.

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[128] *See* M. Drainoni et al., *Cross-Disability Experiences of Barriers to Health-Care Access*, 17 J. of Disability Pol'y Stud. 101 (2006). For quantitative perspectives on disparities in access to care, see W. Horner-Johnson et al., *Expert Panel on Disability and Health Disparities. Disparities in Health Care Access and Receipt of Preventive Services by Disability Type: Analysis of the Medical Expenditure Panel Survey*, 49 Health Serv. Rsch. (2014).

[129] M. T. Neri & T. Kroll, *Understanding the Consequences of Access Barriers to Health Care: Experiences of Adults with Disabilities*, 25 Disability & Rehab. 85, 93 (2003).

[130] M. Story et al., *Perspectives of Patients with Disabilities on the Accessibility of Medical Equipment: Examination Tables, Imaging Equipment, Medical Chairs, and Weight Scales*, 2 Disability & Health J. 169, 177 (2009).

It may be impossible to put a price on the feelings of embarrassment, frustration, and helplessness that individuals with disabilities feel when they are denied basic medical care because a recipient does not have accessible MDE or is unsure of how to use it. Even in instances where individuals with physical disabilities are able to transfer to non-adjustable exam tables or chairs because multiple recipient employees are able to physically move them, such arrangements deny the individual autonomy and increase the possibility of injury for all involved. Some individuals also report the experience to be degrading and feel embarrassed when crude measures such as masking tape are used in an attempt to secure them during transfer, or multiple people must physically move them, especially during sensitive examinations where the patient is partially undressed.[131] Diagnostic examinations can place patients in highly vulnerable positions, both physically and emotionally, and accessible MDE provides individuals with disabilities a measure of autonomy and dignity.

Research that quotes individuals with disabilities affirms the depth of these violations of dignity. Below is an illustrative example drawn from these interviews:

"The tables you must lie on for those are up so high you couldn't dream of lying up there. They are just not accessible, and the only way to get up there is to have people lift you. They make you feel very awkward. I weigh about 130 pounds, and they will bring five people to lift

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[131] Lisa I. Iezzoni et al., *Physical Access Barriers to Care for Diagnosis and Treatment of Breast Cancer Among Women with Mobility Impairments,* 37 Oncology Nursing F. 711 (Nov. 2010).

me up on the table, and everyone starts pulling at your pants on one leg. They think nothing of it. They think, 'let's throw her up there and strip her.'"[132]

Diminishment of social standing.

Beyond the quantifiable health benefits from a suitable diagnostic examination, the presence and use of accessible MDE in appropriate situations signals that individuals with disabilities are entitled to the same standing as other members of society.[133] Qualitative research studying individuals with disabilities underscores these broader effects of inaccessible MDE on perceptions of social identity and standing. One study participant explained, "You get to where you feel useless, and you get to where you really don't want to go on any further. You get tired of fighting the system."[134] Indeed, "[m]any individuals have expressed feelings of frustration and anger resulting from the multiple barriers to care that they faced as well as instances of insensitivity, disrespect, and lack of understanding," leading to a sense of distrust.[135]

(ii) Quantifiable benefits.

Quantifying benefits for this final rule presents significant challenges.

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[132] M.T. Neri, T. Kroll, *Understanding the Consequences of Access Barriers to Health Care: Experiences of Adults with Disabilities*, 25 Disability & Rehab. 85 (2003).
[133] For a summary of empirical research documenting the connection between individuals' experiences with public policies, including anti-discrimination policy, and their sense of citizenship and belonging, *see, e.g.*: S. Mettler et al., *The Consequences of Public Policy for Democratic Citizenship: Bridging Policy Studies and Mass Politics*, 2 Perspectives on Pol. 1 (2004).
[134] M.T. Neri & T. Kroll, *Understanding the Consequences of Access Barriers to Health Care: Experiences of Adults with Disabilities*, 25 Disability & Rehab. 85 (2003).
[135] M. Drainoni et al., *Cross-Disability Experiences of Barriers to Health-Care Access*, 17 J. of Disability Pol'y Stud. 101 (2006).

We expect that provisions on MDE accessibility contained in subpart J will incentivize people with mobility disabilities to seek care and reduce cases where providers fail to treat patients with mobility disabilities at all, or provide a lower quality of care as compared to others. This will result in fewer instances of delayed or denied care, which in turn will lead to reductions in mortality and morbidity risks.

However, estimating a quantitative relationship between the MDE requirements and important consequences such as improvements in health outcomes is a statistically complex problem, even when detailed data are available (and this is often not the case).

Part of the statistical problem involves attribution. Many factors can explain observed outcomes, so the researcher needs to separate incremental effects due only to MDE requirements from those due to all other possible concurrent causes. Below we document how we addressed these challenges in our quantification of benefits.

Our quantification of subpart J benefits for adults living with a mobility disability in the U.S. relies on the number of such direct beneficiaries and their conditions.

The CDC's Disability and Health Data System reports that in 2019 there were 33.5 million U.S. adults with a mobility disability — 14.2% of the total number of U.S. adults.[136]

[136] U.S. Dep't of Health & Hum. Servs., Ctrs. for Disease Control & Prevention, Disability and Health Data System (DHDS), https://data.cdc.gov/Disability-Health/Disability-and-Health-Data-System-DHDS-/k62p-6esq (last visited Sep. 13, 2022) (data covering the 50 states and the District of Columbia).

The 2020 CDC National Health Interview Survey (NHIS) provides additional detail about people with a mobility disability.[137] Among U.S. adults with a mobility disability:

- 4.6 million use a wheelchair or a scooter for getting around;
- an additional 11.3 million use a cane or a walker for getting around; and
- an additional 1.0 million use other equipment or receive help for getting around.

In addition to these 16.9 million adults who need equipment or help getting around, NHIS reports that as of 2020 there are 4.2 million adults who have either "a lot of difficulty walking or climbing steps" or "cannot do at all." In conclusion, as of 2020 there are 21.2 million U.S. adults with a very serious mobility disability.

Quantifying benefits from increased access to mammography machines.

We conclude that an upper bound estimate for the final rule's benefits associated with accessible mammography machines is $290.9 million per year (in 2022 dollars). We focus on estimating benefits from accessible mammography machines because breast cancer is the most common cancer by location (the second-most common is prostate cancer),[138] and mammography machines, which are subject to the MDE Standards, are vital for early breast cancer detection.[139]

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[137] U.S. Dep't of Health & Hum. Servs., Ctrs. for Disease Control & Prevention, 2020 National Health Interview Survey, https://www.cdc.gov/nchs/nhis/2020nhis.htm (last visited Sept. 13, 2022).
[138] R.L. Siegel et al., *Cancer statistics, 2022*, 72 CA: A Cancer J. for Clinicians 7 (2022).
[139] There are types of diagnostic equipment the MDE Standards do not apply to. For instance, an electrocardiogram machine is not a piece of diagnostic equipment a patient needs to transfer to.

Quantifying the benefits for mammography machines provides a way to quantify the benefits of accessible MDE for the prevention and treatment of all cancer diagnoses.

A higher percentage of accessible mammography machines will likely result in more women with mobility disabilities participating in suggested periodical screening, and thus shrink the gap in mammography rates (e.g., percentage of eligible women who get screened) between women with disabilities and women without disabilities.[140]

Higher screening rates result in fewer deaths and fewer cases of non-fatal advanced breast cancer, as quantified in terms of occurrences per 100,000 women screened each year.[141] Avoiding developing advanced breast cancer increases quality of life with the estimate that a year lived with advanced (malignant) breast cancer comes at a 0.0156 points (out of 1.0) lower quality of life, as measured using the EQ-5D.[142]

Breast cancer screenings are recommended when women turn 50 years old, and it is prudent to repeat them (biannually) up to 75 years of age. NHIS data for 2020 reports that there are about 5.9 million women in the 50 to 74 age range with a serious mobility disability.[143]

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[140] Lisa Iezzoni et al., *Trends in Mammography over Time for Women with and without Chronic Disability*, 24 J. of Women's Health 593 (2015).
[141] Stephen Duffy et al., *Mammography Screening Reduces Rates of Advanced and Fatal Breast Cancers: Results in 549,091 Women*, 126 Cancer 2971 (2020).
[142] Patrick Sullivan et al., *Preference-Based EQ-5D Index Scores for Chronic Conditions in the United States*, 26 Med. Decision Making 410 (2006).
[143] U.S. Dep't of Health & Hum. Servs., Ctrs. for Disease Control & Prevention, 2020 National Health Interview Survey, https://www.cdc.gov/nchs/nhis/2020nhis.htm (last visited Sept. 13, 2023).

In order to quantify (in dollar terms) the benefits from increased access to mammography machines, we rely on information provided by the Department's Office of the Assistant Secretary for Planning and Evaluation (ASPE), which uses a value of $670,000 (in 2022 dollars) per Quality Adjusted Life Year (QALY) in regulatory impact analyses.[144] We use this for consistency with prior regulatory impact analyses, recognizing that § 84.57 on value assessment may result in the use of other value assessment methodologies discussed elsewhere in the final rule's preamble that are more intuitively consistent with the applicable regulatory provisions.

Note that the $670,000 per 1 QALY figure refers to an *average* U.S. person — of average disability (as well as other average demographic traits). Consistent with ASPE guidance, we make use of the number of life-years achieved per life saved for an average 40-year-old person and do not vary the level of utility achieved based on the level of disability of the life saved — hence its use is appropriate and nondiscriminatory for assessing the value of life-extension under the final rule's provisions regarding value assessment methods in § 84.57.

Table 26 illustrates the steps leading to our conclusion that the final rule's benefits associated with accessible mammography machines are $290.9 million per year (in 2022 dollars)

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[144] *See* U.S. Dep't of Health & Human Servs., Assistant Sec'y for Planning and Evaluation (ASPE), HHS Standard Values for Regulatory Analysis, 2024 (Jan. 2024), https://aspe.hhs.gov/sites/default/files/documents/7f96080e2812365443347c1cca347188/standard-ria-values-2024.xlsx (providing Estimates of the Value per Statistical Life (VSL), Value per Quality-Adjusted Life Year (VQALY), and Value per Statistical Life Year (VSLY) (constant 2023 dollars) in Excel spreadsheet).

under a scenario where the final rules eliminate the gap in mammography rates between women with disabilities and women without disabilities.[145]

As a baseline, participation in breast cancer screenings for women with a mobility disability remains lower than participation for women without disabilities (fewer screening per year, as a percentage of relevant population). In our benefit estimate, due to accessible mammography machines, the participation of women with mobility disabilities in breast cancer screenings matches that of women without disability, meaning that in any given year more screenings will occur.

As the flows of yearly screenings increase, each year many cases of negative outcomes (early deaths per year) are avoided. We attach dollar values to these yearly flows of avoided negative outcomes (via dollar value of QALY). For avoided non-fatal breast cancer, the yearly flows of benefits would (if they were quantifiable) come from having a higher quality of life. For avoided early (within 10 years of diagnosis) deaths, we estimate the average loss of QALYs across deaths occurring five years (midpoint between 0 and 10) after diagnosis, where diagnosis

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[145] The estimated QALY loss from early death in row [9] is based on ASPE's "Appendix D: Updating Value per Statistical Life (VSL) Estimates for Inflation and Changes in Real Income" published in 2021. U.S. Dep't of Health & Hum. Servs., Office of the Assistant Secretary for Planning and Evaluation, Appendix D: Updating Value per Statistical Life (VSL) Estimates for Inflation and Changes in Real Income (Jun. 29, 2021), https://aspe.hhs.gov/reports/updating-vsl-estimates. In particular, the 4.09 figure is the difference between the ASPE QALYs at a 3% discount rate (19.6) and the (lower) average QALY a person would enjoy if the person were to live five fewer years (we averaged across all possible years the earlier death may occur; we picked five fewer years because it is the midpoint between 0 and 10). The QALY loss from living with breast cancer in row [10] is simply the present value (at a 3% discount rate) of ASPE QALYs with the same life expectancy but with a quality of life 0.0156 points lower each year.

can occur in any of the remaining years from 40 onward. We then use such average value to monetize the yearly benefits flow from avoided early death (i.e., more years lived).

Hence, the estimated $290.9 million per year (in 2022 dollars) are flows of yearly benefits that will occur both during and after the first five years of implementation of this regulation but that are embedded in the chain of cause-and-effect initiated by new diagnostic activity occurring within five years. Hence, it would be incorrect to argue that, because some benefits come from a reduction in deaths occurring within 10 years from diagnosis, the timeframe for these estimated benefits is inappropriately longer than the timeframe for the estimated costs (5 years).

Having provided a conceptual overview of our methodology, we proceed as follows:

We start from the number of women with mobility disabilities who are eligible for breast cancer screenings and have not yet been diagnosed with breast cancer (row 1). These numbers represent the flows of potential beneficiaries.

We use data from a 2015 academic paper on differences in mammography rates between women with disabilities and women without disabilities to estimate how many more screenings would occur if the differences in mammography rates became zero (rows 2 through 5). Iezzoni et al. (2015) reports mammography rates, defined as "mammogram within the prior 2 years for women who did not have a history of breast cancer." In other words, in each survey year, the mammography rate is the percentage of surveyed women who responded affirmatively to the question about whether they had a mammogram within the prior two years; we use rates from the most recent year in the survey.

We use data from a 2020 academic paper to translate incremental screenings in row 5 into gains in terms of life saved and better health outcomes (rows 6 and 7). Duffy et al. (2020) surveyed women over several years and, for each year of observation, classified surveyed women "according to each woman's current participation in screening. This was defined as follows: if a woman participated in her most recent scheduled screening mammogram, she was classified as participating in screening. Those not participating were classified as nonparticipants. This classification was made annually on the last day of each year." Having split the surveyed women into two groups, the paper compares death rates from breast cancer between the groups, where death rates are defined as the average yearly number of deaths per 100,000 women in each group. Among women participating in screening there were 28.6 deaths per year per 100,000 women, 17.3 fewer than among those who did not participate in screening (45.9 deaths, see Table 2 in Duffy et al. (2020)).

We monetize these benefits relying on HHS's approach to valuing mortality risk reductions in Regulatory Impact Analyses (rows 6 through 8): row 9 and row 10 break down the total net benefits in row 11 by the source, and indicate the simple formula used for their quantification.

TABLE 26—ESTIMATED BENEFITS FROM INCREASED ACCESS TO MAMMOGRAPHY

Row	Description	Use wheelchair or scooter for getting around	Use other equipment or need help for getting around	No equipment/help for getting around but "Cannot do at all" or "Serious difficulty" walking and climbing steps	Total
(1)	Women aged 50–74 with mobility disability AND who were never told they had breast cancer (million), NHIS 2020	1.197	3.023	1.687	**5.906**
(2)	% of women with mobility difficulty who had a mammogram in the prior 2 years (data for survey year 2010 from Iezzoni et al. (2015), Table 2: Mammogram Rates)	60.4%	66.1%	72.1%	
(3)	% of women with no disability who had a mammogram in the prior 2 years (data for survey year 2010 from Iezzoni et al. (2015), Table 2: Mammogram Rates)	77.3%	77.3%	77.3%	
(4)	Difference: row 3 – row 2	16.9%	11.2%	5.2%	
(5)	Additional women participating in screening (million) =row 1 * row 4	0.202	0.339	0.088	**0.629**
(6)	Yearly reduction in deaths within 10 years since diagnosis, (based on Duffy et al. (2020) Table 2 which reports 17.3 fewer deaths per 100,000 women participating in screening) = 17.3 * 10 * row 5	35	59	19	**109**
(7)	ASPE: value of 1 QALY in 2022 dollars at 3% discount rate	$670,000	$670,000	$670,000	
(8)	Estimated QALY loss from dying within 10 years since diagnosis, based on ASPE (2021) at 3% discount rate	4.09	4.09	4.09	
(9)	**Estimated yearly benefits (millions of 2022 dollars) from fewer deaths** = row 6 * row 7 * row 8	$96.0	$160.7	$41.6	**$298.3**
(10)	**Estimated yearly costs (millions of 2022 dollars) of follow-up testing (mostly false positives)** = 1.13% * row 5 * 10% * average ($144, $272) / 2	$2.4	$4.0	$1.0	**$7.4**
(11)	**Total yearly net benefits** = row 9 – row 10	**$93.6**	**$156.7**	**$40.6**	**$290.9**

In a recent mammography-related regulatory analysis, the Food and Drug Administration estimated that roughly 10 percent of screening mammograms yield positive results (mostly false positives). Follow-up testing—ultrasound or needle core breast biopsy with pathology—

generates costs ranging from $144 to $272 in 2020 dollars.[146] In Table 26, these estimated costs are subtracted from the benefits estimates associated with the same more widespread mammography attributed to the final rule. Note that these costs are proportional to false-positive results of mammograms; since women participating in screening take the test once every two years, the number of additional women participating in screening needs to be divided by two to count how many additional mammograms there will be each year (with 10% of them assumed to yield a false positive).

Table 26 adopts estimates from Iezzoni et al. (2015) referring to participation in screening that varies by disability status (a "yes" or "no" dichotomous variable). These estimates are derived from survey data that asks respondents about their experiences over the past two years; in other words, the survey answers would be the same if each respondent had received one mammogram over the two-year span or had received multiple mammograms (perhaps as part of an annual pattern). The latter possibility is reflected in the preceding analysis, but with biannual mammography a widely (though not universally) recommended periodicity of screening,[147] we

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[146] U.S. Food and Drug Administration, *Mammography Quality Standards Act; Amendments to Part 900 Regulations*, Docket No. FDA-2013-N-0134, https://www.fda.gov/media/166062/download. These data are in 2020 dollars. To bring these data to 2022 dollars, we used U.S. Bureau of Labor Statistics. CPI for all Urban Consumers (CPI-U), Not Seasonally Adjusted, https://data.bls.gov/timeseries/CUUR0000SA0 (annual figures for 2020 and 2022). The choice of this source for inflating dollar values matches the source ASPE uses when calculating the dollar value of 1 QALY. We multiplied $144 and $272 by 1.13, the ratio of 292.655 (2022 CPI-U index) and 270.970 (2020 CPI-U index), resulting in a range of $162.72 to $307.36 in 2022 dollars.

[147] American Hospital Association, Task Force Recommends Biennial Mammograms Starting at 40 (May 10, 2023), https://www.aha.org/news/headline/2023-05-10-task-force-recommends-biennial-mammograms-starting-40.

present a similar analysis, but reduce the estimated annual averted deaths by dividing them by 2, corresponding to the periodicity of the survey data (see table below).

Sensitivity Analysis, Table 26

Row		Use wheelchair or scooter for getting around	Use other equipment or need help for getting around	No equipment/help for getting around but "Cannot do at all" or "Serious difficulty" walking and climbing steps	Total
(1)	Women aged 50–74 with mobility disability AND who were never told they had breast cancer (million), NHIS 2020	1.197	3.023	1.687	**5.906**
(2)	% of women with mobility difficulty who had a mammogram in the prior 2 years (data for survey year 2010 from Iezzoni et al. (2015), Table 2: Mammogram Rates)	60.4%	66.1%	72.1%	
(3)	% of women with no disability who had a mammogram in the prior 2 years (data for survey year 2010 from Iezzoni et al. (2015), Table 2: Mammogram Rates)	77.3%	77.3%	77.3%	
(4)	Difference: row 3 – row 2	16.9%	11.2%	5.2%	
(5)	Additional women participating in screening in the past ***two*** years (million) =row 1 * row 4	0.202	0.339	0.088	**0.629**
(6)	Yearly reduction in deaths within 10 years since diagnosis, (based on Duffy et al. (2020) Table 2 which reports 17.3 fewer deaths per 100,000 women participating in screening) = 17.3 * 10 * row 5	35	59	19	**109**
(7)	ASPE: value of 1 QALY in 2022 dollars at 3% discount rate	$6700,000	$670,000	$670,000	
(8)	Estimated QALY loss from dying within 10 years since diagnosis, based on ASPE (2021) at 3% discount rate	4.09	4.09	4.09	
(9)	**Estimated yearly benefits (millions of 2022 dollars) from fewer deaths** = row 6 * row 7 * row 8 / 2	$48.0	$80.3	$20.8	**$149.2**
(10)	**Estimated yearly costs (millions of 2022 dollars) of follow-up testing (mostly false positives)** = 1.13* row 5 * 10% * average ($144, $272) / 2	$2.4	$4.0	$1.0	**$7.4**
(11)	**Total yearly net benefits** = row 9 – row 10	**$45.6**	**$76.4**	**$19.8**	**$141.8**

Our $290.9 million/year estimate (2022 dollars) assumes that accessible MDE is the only reason behind the observed gap in mammography rates, and that the erasing of the gap can be fully attributed to the final rule. We recognize that this scenario is unlikely and that factors other

than MDE accessibility help explain the observed gap — factors that include inability to pay co-pays, inability to arrange transportation to the health provider's location, etc. The $290.9 million/year estimate is an upper bound.

On the other hand, a lower bound estimate for the benefits is $0 per year, or no effect. While the lower bound also appears somewhat extreme, we acknowledge that a reasonable base estimate should not be the midpoint between lower and upper bound because high values are less likely than lower values. We expect a reasonable base estimate to be closer to the lower bound than the upper bound. We conclude that a reasonable estimate could be in the range of 5 to 10% meaning that 90% to 95% of the gap is not due to MDE accessibility. This conclusion yields benefits between $14.5 million and $29.1 million per year (5% and 10% of $290.9 million/year in Table 26).

Assessing a reasonable range for overall quantifiable benefits.

Newly diagnosed female breast cancer cases are a small portion of all new cancer cases, with one source reporting that female breast cancer cases represent 15% of the 1.918 million newly diagnosed cancer cases in the U.S.[148]

Carrying out diagnosis-specific base estimates would likely be overly burdensome as available statistics list 46 types of cancers (e.g., breast, stomach, Hodgkin's lymphoma, etc.).

[148] R.L. Siegel et al., *Cancer statistics, 2022*, 72 CA: A Cancer J. for Clinicians 7 (2022).

We can approximate a base estimate for benefits for all cancer diagnoses by dividing our base estimate range limits by 15% (i.e., multiplying them by 6.66). This admittedly rough approach produces a ballpark range for total benefits between $97.0 and $193.9 million (midpoint: $145.5 million, our base estimate). Of course, accessible MDE will have positive effects on the prevention and treatment of non-cancer conditions as well. We do not attempt to quantify such benefits here.

While the Department is aware of other health care benefits beyond those addressed in dollar amounts in this final RIA, it has been unable to quantify those health care benefits here. For example, other diseases and health complications beyond cancer can be diagnosed and treated shortly after their first occurrence when appropriate accessible exam tables, weight scales, imaging equipment, and other MDE are used by recipients. Additionally, accessible weight scales allow for accurate anesthesia measurements, a requirement for surgeries that require general anesthesia.

j. Analysis of regulatory alternatives to the final rule.

The Department considered a series of alternatives to the regulatory provisions on accessible medical equipment in its final rule, some providing more flexibility, and others requiring that a larger number of pieces of medical equipment would be made available.

In this rulemaking, the Department has adopted a multi-faceted approach to ensure that individuals with disabilities are not denied health care because of the absence of accessible medical equipment. The Department seeks to (1) adopt standards for accessible medical diagnostic equipment, (2) set scoping requirements for the amount of newly purchased, leased, or

otherwise acquired medical diagnostic equipment used to serve patients that must be accessible, (3) require that recipients address access barriers resulting from a lack of accessible medical diagnostic equipment in their existing inventory of equipment, and (4) ensure that staff are able to successfully operate accessible medical diagnostic equipment, assist with transfers and positioning of individuals with disabilities, and carry out the program access obligation with respect to existing medical diagnostic equipment.

The Department considered the option of not including any provision addressing accessible medical equipment in this rulemaking. Under such an approach, the Department would continue to rely on the general nondiscrimination provisions of its existing section 504 and section 1557 rules, which apply to recipients of its funding. The Department has determined that such an approach would be ineffective in addressing the lack of access for persons with disabilities to medical care because of recipients' low usage of accessible medical equipment. OCR has investigated and resolved complaints of alleged discrimination resulting from the lack of accessible medical equipment. Similarly, DOJ has investigated and entered into agreements with hospitals addressing the lack of accessible medical equipment.[149] The Department has also

[149] *See* U.S. Dep't of Justice, Justice Department Settles with Tufts Medical Center to Better Ensure Equal Access for Individuals with Disabilities (Feb. 28, 2020), https://www.justice.gov/opa/pr/justice-department-settles-tufts-medical-center-better-ensure-equal-access-individuals; U.S. Dep't of Justice, Justice Department Reaches ADA Settlement with Beth Israel Deaconess Medical Center (Oct.

received public comments on versions of its proposals for its section 1557 rule, describing the harm that people with disabilities face.[150] Also, the Department has received statements from persons with disabilities and the organizations that represent them detailing the nature of discrimination in health care against individuals with disabilities because of the lack of accessible medical equipment, and they have asked the Department to issue substantive rules to ameliorate the issue.[151] Finally, the Department is aware that the National Council on Disability has issued multiple reports recommending that the Department regulate in this area and adopt the Standards for Accessible Medical Diagnostic Equipment that the U.S. Access Board has issued,

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22, 2009), https://www.justice.gov/opa/pr/justice-department-reaches-ada-settlement-beth-israel-deaconess-medical-center; U.S. Dep't of Justice, Washington Hospital Center Agreement Fact Sheet (Nov. 2, 2005), https://www.ada.gov/whcfactsheet.htm; U.S. Dep't of Justice, Settlement Agreement between U.S. and Valley Radiologists Medical Group (Nov. 2, 2005), Settlement Agreement between the United States of America and Valley Radiologists Medical Group, Inc. (Nov. 2, 2005), https://www.ada.gov/vri.htm.

[150] *See, e.g.*, 2013 Request for Information, U.S. Dept. of Health and Human Serv., 78 F.R. 46558, Comments from the Disability Rights Education and Defense Fund, https://www.regulations.gov/comment/HHS-OCR-2013-0007-0152.

[151] Nat'l Council on Disability, Letter to HHS Secretary Azar on Need for Accessible Medical Equipment Rule (July 31, 2020), https://ncd.gov/publications/2020/ncd-letter-hhs-secretary-azar-accessible-medical-equipment-rule; *Lankford, Colleagues Press HHS to Prevent Discrimination of Individuals with Disabilities in Health Care*, Lankford.senate.gov (May 26, 2021), https://www.lankford.senate.gov/news/press-releases/lankford-colleagues-press-hhs-to-prevent-discrimination-of-individuals-with-disabilities-in-health-care; Letter from Autistic Self Advocacy Network et al., to the Department (Aug. 18, 2022) (urging the Department to provide clear standards for medical exam and diagnostic equipment); Letter from American Association of People with Disabilities et al., to the Department (Feb. 24, 2022), https://www.aapd.com/wp-content/uploads/2022/03/HHS_Disability-Advocates-Memo-02.24.22.pdf (requesting that the Department issue medical diagnostic equipment standards).

in consultation with the Food and Drug Administration and after an extensive public comment process.[152]

The Department also considered the option of issuing a regulation that would specifically require the provision of accessible medical equipment in programs and activities receiving funds from the Department without including any specific standards for what constitutes accessible medical equipment or addressing how many pieces or what types of the equipment should be made accessible. The Department has decided against this approach because it would provide inadequate guidance, cause confusion for HHS recipients, would likely prove ineffective in addressing discrimination, and would likely result in unnecessary litigation. It would also fail to follow up on the initiative of the U.S. Access Board in developing standards for what constitutes accessible medical diagnostic equipment, a process required by Section 510 of the Rehabilitation Act.

Another option that the Department considered was requiring the purchase, lease, or acquisition through other means of *all* — not just one examination table and one weight scale — accessible medical diagnostic equipment within two years. This approach would have significantly increased the costs to recipients. We estimate that, in the base scenario, this approach would cost $609.8 in present-value costs when using a 3% discount rate, and $626.8

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[152] Nat'l Council on Disability, Enforceable Accessible Medical Equipment Standards: A Necessary Means to Address the Health Care Needs of People with Mobility Disabilities (2021), https://ncd.gov/sites/default/files/Documents/NCD_Medical_Equipment_Report_508.pdf; Nat'l Council on Disability, 2021 Progress Report: The Impact of Covid on People with Disabilities (2021), https://ncd.gov/sites/default/files/NCD_COVID-19_Progress_Report_508.pdf/.

million when using a 7% discount rate (2022 dollars).[153] It would also have the benefit of reducing the wait time to achieve target scoping percentages for availability of accessible equipment.

Another option that the Department considered was deviating from the Department's existing section 504 regulatory provision at § 84.22(c) (retained in this final rule), which allows a recipient with fewer than 15 employees to refer an individual with disabilities to a provider whose facilities are accessible when complying with the existing facilities requirements would require a significant alteration. The Department has decided to retain this provision to assist the majority of the offices of health care providers that are small entities and whose lesser annual revenues may make the purchase or lease of accessible equipment unduly burdensome. For example, approximately 54% of the offices of physicians have fewer than 5 employees and over 38% of the offices of dentists have fewer than 5 employees. The Department's approach to this small provider referral option guards against possible abuses by ensuring that, before referring a patient with a disability to another provider, the recipient must consult with the patient and ensure that the other provider is accessible, accepting new patients, and is not an unreasonable distance away.

[153] Estimates assume no change in the price difference between accessible and inaccessible MDE. These estimated present-value costs are obtained when, in each of the first two years, recipients incur one-half of the $1,637 million one-time cost required to bring MDE to compliance, followed by the $213 million of recurring costs in each of the following years (see Table 21, in 2019 dollars).

The Department also considered options that would provide greater accessibility, including adopting scoping requirements that are higher, requiring more accessible equipment, or requiring that every newly purchased or leased piece of diagnostic medical equipment be accessible. If the Department were to double the scoping requirements, to 20% and 40%, respectively, present-value costs would increase by $115.5 million at a 3% discount rate, and by $117.4 million a 7% discount rate (2022 dollars). An increase in scoping to 100% would result in a $1,039.7 million increase (3% discount) and $1,056.4 million increase (7% discount).[154] However, the Department does not envision requiring that every new piece of diagnostic medical equipment must be accessible. The Department is aware of the costs that such a requirement would impose and that such numbers are not required to provide full service to persons with disabilities in this country. The Department is following well-established precedent with this approach. For example, the 2010 Standards for Accessible Design do not require that every toilet room or every parking space be accessible, but instead has scaled the requirement to those numbers that will serve the numbers of persons with disabilities whose disabilities require accessible features.

3. § 84.56– Medical Treatment.

a. Baseline.

[154] The estimate under a 100% scoping requirement is obtained by setting the accessibility gap in column 6 of Table 21 equal to 100% minus column 2 in Table 20, applying the same methodology used for the base estimate. The estimate under doubled scoping requirements is obtained as a proportionally determined intermediate point between the base estimate and the 100% scoping estimate.

Nondiscrimination in the area of medical treatment has always been covered by prohibitions against discrimination by recipients of Federal financial assistance from HHS contained in § 84.4, and it is now covered in the new § 84.68. In addition, health, welfare, and social services entities receiving Federal financial assistance have also always been covered by the general prohibitions applicable to them in § 84.52. These obligations have been in place since 1977, when the existing regulations were issued. The final regulation simply provides specific guidance as to how recipients can apply those general prohibitions to the area of medical treatment. For this reason, there are few costs associated with the new regulation other than training for employees on the substance of the regulations.

b. Benefits.

There are few rights more important than the right not to be discriminated against in the provision of health care services and treatments that may save a patient's life. Individuals with disabilities should be confident that the medical system will treat them in a nondiscriminatory fashion.

A key reason for inequities in health care for individuals with disabilities is discriminatory medical decisions. These decisions are often a result of unfounded stereotypes about disabilities on the part of physicians. Although many individuals with disabilities report that they have a high quality of life and level of happiness, particularly when they have access to nondiscriminatory health care, many physicians assume that individuals with disabilities have

lower qualities of life compared to their counterparts without disabilities.[155] These assumptions often lead to discriminatory medical treatment issues in both the provision and denial of medical treatment.

The regulatory language in § 84.56 applies generally to medical treatment decisions, while the preamble provides specifics in particular areas, including organ transplants, life-sustaining treatment, crisis standards of care, and participation in clinical research.

The changes will help eliminate the "pervasive barriers to health care for people with disabilities," leading to improved quality of life, productivity, and well-being for more Americans.[156] As discussed in the NPRM preamble, a 2008 study found Americans with disabilities are significantly more likely than those without disabilities to report unmet health care needs. Unmet health care needs contribute to various indicators of health inequity: individuals with disabilities in the United States have a shorter average life expectancy than people without disabilities and are three times as likely to have heart disease, stroke, diabetes, or cancer than adults without disabilities. Pregnant people with disabilities receive poorer maternity care, experience higher incidents of pregnancy and birth-related complications, and are eleven times more likely to experience maternal death than women without disabilities. People with physical disabilities are far less likely to ever receive mammograms and Pap smears, let alone to

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[155] Lisa I. Iezzoni et al., *Physicians' Perceptions of People with Disability and Their Health Care,* 40 Health Aff. 297 (Feb. 2021), https://pubmed.ncbi.nlm.nih.gov/33523739/.
[156] Nat'l Council on Disability, *The Current State of Health Care for People with Disabilities* (2009), https://www.ncd.gov/publications/2009/Sept302009.

receive recommended routine preventive screenings. People with disabilities are also more likely to have risk factors associated with cancer than people without disabilities and experience disparities in breast and cervical cancer screening compared to people without disabilities.[157] During the first year of the COVID-19 pandemic, one third of the individuals who died in the United States were living in congregate settings – a majority of whom were individuals with disabilities.

Although more difficult to quantify, § 84.56 also promotes the notion that all people have value and ensures that individuals with disabilities will have access to nondiscriminatory health services. Nondiscriminatory health services honor the dignity of individuals with disabilities and help avoid stigma. Moreover, increased equity in the medical treatment area can lead to the important benefit of enabling a greater sense of fairness and impartiality.

The provision also encourages trust between individuals with disabilities and health care providers and clarifies what section 504 requires of recipients in the medical treatment area. This clarification of obligations will enhance the ability of recipients to avoid prohibited discrimination and improve their compliance with section 504. In addition, it will benefit individuals with disabilities because it will provide a clear set of expectations about their rights under the law.

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[157] Lisa Iezzoni et al., *Associations Between Disability and Breast or Cervical Cancers, Accounting for Screening Disparities*, Medical Care 139 (2021), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7855335/; *see also*, C. Brook Steele et al., *Prevalence of Cancer Screening Among Adults with Disabilities*, United States, 2013. Preventing Chronic Disease (2017), http://dx.doi.org/10.5888/pcd14.160312.

The CDC reports that suicide is a serious public health problem in the US, resulting in a death every 11 minutes. The Department is aware that persons with disabilities are three times more likely to report suicidal ideation compared to people without disabilities (30.6% versus 8.3% in the general U.S. population) and believes that its regulatory provisions addressing bias and misconceptions in health care will result in more persons with disabilities being offered mental health care services, which will in turn reduce the number of persons with disabilities who will die by suicide.

Unfortunately, there is not enough information or studies available for the Department to determine how many lives will be saved or improved by this action. However, given the significant numbers of persons with disabilities in the US that will benefit from this rule, it is likely that there will be significant monetary benefits, beyond those quantified here.

c. Costs.

While the discrimination prohibited under § 84.56 is already addressed broadly in the current section 504 implementing regulation, the Department is aware that numerous recipients have not adequately addressed such discrimination, including discrimination pertaining to organ transplants, life-sustaining treatment, crisis standards of care plans, and the participation in clinical research. Accordingly, we anticipate that recipients will modify policies and then provide a short, targeted training to the physicians who are responsible for making medical treatment decisions, including decisions on contraindications for organ transplants, criteria for allocating scarce medical resources based on long-term survivability during a pandemic, and determinations on appropriate treatments to save or prolong lives. We anticipate that select

employees, including medical and health service managers, general internal medicine physicians, and surgeons, will require a one-half hour training on this new section. Accordingly, we estimate the cost of providing training to decision-making employees to be $66.3.1 million over the course of five years, or an annualized cost of $13.6 million at a 3% discount rate, or an annualized cost of $14.04 million at a 7% discount rate.

TABLE 27—ESTIMATED COSTS FROM MEDICAL TREATMENT PROVISION

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Total undiscounted**	**Annualized, 3% discount rate**	**Annualized, 7% discount rate**
Incremental Costs, $ million (2022 dollars)	33.2	8.3	8.3	8.3	8.3	**66.3**	**13.6**	**14.0**

d. Potential transfers.

The Department is aware that persons with disabilities have been denied access to organ transplants due in part to stereotypes surrounding the social worth of people with disabilities, and believes that the elimination of discriminatory allocation of organ transplants for persons with disabilities will result in difficult-to-quantify effects. Transplant-associated health improvements

would be shifted to persons with disabilities who will no longer be denied organ transplants from the individuals who would have received those organs in the absence of this final rule.[158]

e. Alternatives considered.

As an alternative, the Department considered addressing medical treatment issues in a more limited yet detailed way, breaking down § 84.56 into four new sections. Under this alternative, instead of a broad prohibition against discrimination in medical treatment with details of various situations addressed in the preamble, the regulation itself would contain separate sections on organ transplantation, life-sustaining treatment, crisis standards of care, and participation in clinical research. While this alternative would have placed greater emphasis on four specific areas where the Department has received a number of complaints, it would have also left out a broad range of areas that should also be included in the regulatory text. Individuals with disabilities experience discrimination throughout the medical treatment process and the final rule should not suggest that only four specific situations are covered. Moreover, this alternative would not cost less than the Department's approach to § 84.56 as the difference between the alternatives is in the structure and not the content. The same policy and training

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[158] By discriminatorily eliminating individuals with disabilities from the pool of organ recipients due to stereotypes concerning the value of life for people with disabilities, doctors, organ procurement networks, and other decision-makers involved in the organ transplant system may be limiting the potential utility of available organs. By ensuring that individuals with disabilities receive an equal opportunity for organ transplant consideration, there may be a greater likelihood that organs will be used to their full potential and result in the most healthy life years, especially in instances where an organ would otherwise go to another individual without a disability who has more numerous or severe contraindications for organ transplant.

costs would apply to recipients, but they would be broken into four categories, rather than a single category.

As mentioned above, the Department does not believe that limiting § 84.56 to four distinct sections would affect the potential cost for recipients. Recipients would still be required to ensure that their programs and activities are nondiscriminatory, as they are required by the existing section 504 regulation. In the event that recipients decide to provide training for the physicians that engage in the four specific medical treatment decisions, the training costs would be identical to those identified under § 84.56.

OCR considered an alternative of not taking regulatory action in the area of medical treatment and leaving the issue to be addressed in guidance documents. This alternative would eliminate the need to train employees on the regulatory requirements. However, health care and the numerous treatment decisions that arise are crucial areas for individuals with disabilities that affect not only their daily living but, in some cases, survival itself. Failing to regulate in this area could result in continuation of recurring discrimination. Such a rule would result in a failure to regulate one of the most essential need of individuals with disabilities – access to nondiscriminatory medical treatment.

4. § 84.57 – Value Assessment Methods.

a. Baseline.

Value assessment methods are increasingly used by recipients to evaluate the cost-effectiveness of goods, services, and interventions. Many of these methods play an important role in cost containment and quality improvement efforts. This provision applies broadly to

entities engaged in value assessment methods who receive Federal financial assistance. In practice, we anticipate that the most relevant category of recipients subject to these regulatory provisions will be the fifty-six State Medicaid agencies.

b. Costs.

We calculate costs from the 56 State Medicaid agencies. In addition, we assume that third-party value assessment entities currently being utilized by state Medicaid agencies will respond to the issuance of this regulation by modifying their methods to ensure that the use of their assessments will be in compliance with section 504. This means revised third-party value assessment recommendations produced using alternative, nondiscriminatory methods will continue to be used by recipients. In the absence of such revisions, recipients may face somewhat greater costs as they will not be able to rely on third-party reports or analyses that use methods that violate this provision with respect to the eligibility or referral for, or provision or withdrawal of, any aid, benefit, or service. We do not estimate costs to third-party value assessment entities under this scenario as we believe it to be exceedingly likely that third-party value assessment entities will modify their practices to allow their assessments to be used by recipients subject to the regulation.

Time spent revising existing policies.

Most states do not provide public information on the particular value assessment methodologies they use. However, we believe that the use of discriminatory value assessment methods in a manner not consistent with the requirements of this provision is not common practice and is currently in use in only a minority of states. As a result, we estimate that most

State Medicaid agencies will have no costs to comply with this regulation and will only have to avoid the use of discriminatory value assessment methodologies in the future. However, we note that some states do currently use potentially discriminatory value assessment methods through third parties and may need to revise their existing processes for value assessment as a result to avoid the use of third-party value assessment methods that violate this provision.

According to the Bureau of Labor Statistics, the mean hourly wage for general and operations managers is $59.07 in 2022 dollars.[159] Adding 100% for fringe benefits and overhead results in an adjusted hourly wage of $118.14. We estimate that an average of forty hours from one person in this occupation per State will be required to revise existing policies and practices to ensure compliance with these regulatory provisions, recognizing that in some states the time commitment may be substantially more, while no investment of time or personnel will be necessary in other states. As a result, we estimate $264,634 in costs to comply with this provision across the fifty-six State Medicaid agencies, entirely through the review and revision of existing State policies and practices regarding value assessment and the revision of current utilization management, formulary, or other practices that violate this provision.

[159] U.S. Bureau of Lab. Stats., Occupational Employment Statistics, Occupational Employment and Wages, May 2022 (occupation code 11-1021), released April 25, 2023, https://www.bls.gov/oes/tables.htm (last visited Jan. 25, 2024).

We anticipate that these $0.265 million in additional costs will be incurred once. On an annualized base over five years, these incremental costs are $56,101 per year at a 3% discount rate, and $60,319 per year at a 7% discount rate.

Though we anticipate that some recipients (most notably State Medicaid agencies, as we describe above) will need to revise policies in order to comply with this regulation, we do not anticipate that this regulation will result in any other added costs to recipients. This is because of the availability of alternative systems for value assessment that can achieve comparable cost containment objectives.

There may be distributional consequences to such shifts in the method of value assessment used by recipients. Nonetheless, this represents shifts in the distribution of recipient expenditures on health care services, not an increase in the total amount of resources required to comply with the regulation. As a result, we do not incorporate such distributional shifts into our assessment of costs, except in so far as they create additional staff time costs to implement such changes.

TABLE 28—ESTIMATED COSTS FROM VALUE ASSESSMENT PROVISION

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Total undiscounted**	**Annualized, 3% discount rate**	**Annualized, 7% discount rate**
Incremental Costs, $ million (2022 dollars)	0.265	0	0	0	0	**0.265**	**0.056**	**0.060**

c. Benefits.

Nondiscrimination for persons with disabilities in value assessment methodologies.

In enacting section 504 and subsequent statutes requiring nondiscrimination for people with disabilities, Congress sought to ensure that people with disabilities would have access to broad protections against discrimination. Value assessment methods are a highly complex field not easily understood by the general public. As a result, ensuring nondiscrimination requires careful oversight and enforcement. By clarifying obligations under section 504, individuals with disabilities will have greater confidence that state Medicaid agencies and other recipients will not employ value assessment methodologies in a discriminatory fashion. This clarification prohibits discrimination against people with disabilities, and reaffirms our nation's recognition that extending the lives of people with disabilities is as valuable as extending the lives of people without disabilities.

Regulatory clarity for recipients.

While recipients must avoid the use of discriminatory measures, value assessment does represent an important field with the potential to support recipients in a wide variety of decisions relevant to both quality and cost containment. By providing regulatory clarity on obligations under section 504 with respect to value assessment, the Department will help ensure that recipients can use nondiscriminatory value assessment methodologies confidently and effectively.

d. Alternatives considered.

The Department believes that the final rule represents, in balance, the most effective and least burdensome option for ensuring compliance with recipient obligations under section 504 with respect to value assessment methodologies. The Department has considered the possibility

of evaluating recipient value assessment methodologies on a case-by-case basis and providing technical assistance to ensure compliance with section 504. However, such an approach would result in confusion and uncertainty regarding how to comply with section 504. Finally, we note that value assessment processes are often not made available to the public and thus are unlikely to generate complaints even in the event of noncompliance. As such, we believe that issuing this regulation represents the most effective and least burdensome approach to ensuring section 504 compliance in value assessment methodologies.

5. § 84.60 – Child Welfare.

a. Baseline.

OCR has seen an increase in the number of complaints alleging unlawful discrimination on the basis of disability in the child welfare system for parents, foster parents, prospective parents, and children with disabilities. In cases involving parents, foster parents, and prospective parents with disabilities, OCR's investigations revealed that individuals with disabilities are denied meaningful opportunities to preserve their families, reunify with their children, or qualify as foster parents based on stereotypes, bias, and unsupported assumptions about their ability to safely care for children. OCR's investigations found that in some instances, the mere presence of a parent's or prospective parent's disability led to conclusory determinations of risk without articulating the specific risk or harm to a child or whether perceived safety concerns could be mitigated through appropriate auxiliary aids and services or reasonable modifications. OCR's investigations also found that many child welfare workers and administrators were not aware of

their agency's section 504 and Title II obligations, attributable in part, to the absence of nondiscrimination policies, procedures, and training.

In 2015, in response to growing concerns about the increase in complaints concerning discriminatory policies, procedures, and practices in the child welfare system, OCR, the Children's Bureau in the Administration for Children and Families, and DOJ issued a technical assistance document that offered guidance and information about the intersection of Federal civil rights laws and Federal child welfare requirements.[160] OCR also increased its outreach efforts by providing direct training to State child welfare entities and courts at local and national conferences. Despite these efforts, OCR's investigations continue to reveal that some child welfare entities have implemented policies, practices, and procedures that discriminate against parents and prospective parents with disabilities.

OCR is also aware that foster children with disabilities face unnecessary and discriminatory barriers to placements in family-like foster homes settings. Disability rights and child advocacy groups have sought relief through Federal courts to address the inappropriate placement of foster children with disabilities in hotels, state offices, and refurbished juvenile

[160] Dep't Health & Hum. Servs., Dep't of Justice, Protecting the Rights of Parents and Prospective Parents with Disabilities: Technical Assistance for State and Local Child Welfare Agencies and Courts under Title II of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act (2015), https://www.hhs.gov/sites/default/files/disability.pdf (last visited Aug. 17, 2022).

detention centers. These actions have also challenged the practice of holding foster children with behavioral and mental health disabilities in psychiatric institutions beyond medical necessity.[161]

The preceding discussion indicates that there is incomplete compliance with existing nondiscrimination requirements. The analytic baseline in this regulatory impact analysis is characterized by a compliance mix across various affected entities. Due to challenges with estimating this mix, two cases will be presented, representing different possibilities for existing compliance. As will be discussed in more detail below, where compliance is more complete in the baseline, costs of this regulatory provision are estimated to be more limited, and benefits likewise are minimal. Where there is greater baseline non-compliance with non-discrimination requirements, benefits and costs are both potentially substantial.

This final rule will clarify the application of the nondiscrimination provisions of section 504 to federally assisted child welfare entities. In addition, the final rule will promote understanding of and compliance with section 504 and the ability of children, parents, foster parents, and prospective parents with disabilities to assert and protect their rights under the law.

This final rule applies to any entity that administers a child welfare program or activity, any part of which receives Federal financial assistance from the Department. The following are examples of recipients under the final rule; this is not an exhaustive list.

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[161] For more details, please see the preamble discussion on most integrated settings in foster care.

- Entities receiving Federal financial assistance through their participation in title IV-B and IV-E programs (50 states, District of Columbia, Puerto Rico and the Virgin Islands). Examples of these entities include:
    - State governments;
    - Local governments; and
    - Territories.
- State governments, local agencies, universities, and hospital-affiliated programs receive Child Abuse Prevention and Treatment Act discretionary funds.
- States and migrant programs receive Federal financial assistance through the Community Based Child Abuse Prevention programs for child abuse prevention programs and activities.
- The District of Columbia, Puerto Rico, American Samoa, Guam, the Northern Mariana Islands, and the Virgin Islands receive Federal financial assistance through the Children's Justice Act to improve the investigation, prosecution, and judicial handling of cases of child abuse and neglect.
- State Courts receive Federal financial assistance through the State Court Improvement Program to improve court efficiency and the quality of legal representation.
- State Attorney General Offices and Public Defense Organizations receive Federal Financial assistance through ACF to represent Title IV-E agencies, parents, and children.

- Private sector entities receive Federal financial assistance through ACF and the Substance Abuse and Mental Health Services Administration (SAMHSA) discretionary grants for substance use disorder education, prevention, and treatment.
- Private child welfare entities and community-based organizations receive Federal financial assistance through Medicaid, Children's Health Insurance Program (CHIP), and Temporary Assistance to Needy Families (TANF) block grant programs for child welfare programs and activities. Examples of services provided by these entities include foster care and adoption services, parenting skills, counseling, anger management, visitation, psychological and psychiatric assessments, childcare, and in-home family preservation services.
- Behavioral Health agencies, including residential treatment facilities, receive Federal financial assistance through CHIP for residential treatment services.
- Individual human services providers (including mental health counselors, psychologists, and psychiatrists) receive Federal financial assistance through Medicaid and CHIP for child welfare programs and activities.

b. Costs.

In general, the final rule does not impose new requirements on child welfare entities. Rather, the final rule structures and clarifies the application of existing section 504 requirements to child welfare entities in terminology that is familiar to such entities, all of which have been covered by these requirements for many years. Though most of the regulatory provisions restate

section 504 requirements prohibiting discrimination on the basis of disability with greater specificity, § 84.60(c) does require some recipients to establish referral procedures.

§ 84.60(c) directs recipients to establish procedures for referring individuals who, because of disability, need or are believed to need adapted services or reasonable modifications to service providers who use tests, assessments, and other evaluation materials that are tailored to assess specific areas of disability-related needs and not merely those which are designed to provide a single general intelligence quotient. While covered entities were already required to make such referrals under Section 504 and title II of the ADA, some recipients may need to develop new policies to reflect these requirements.

Many child welfare entities may have adopted policies and procedures required under OCR's existing civil rights authorities and therefore would only need to review and update such policies and procedures rather than creating them anew. OCR, ACF, and DOJ issued joint guidance in 2015, "Protecting the Rights of Parents and Prospective Parents with Disabilities: Technical Assistance for State and Local Child Welfare Agencies and Courts under Title II of the Americans with Disabilities Act and section 504 of the Rehabilitation Act" noting that some child welfare entities have established policies to prevent discrimination and will likely need to reasonably modify said policies to avoid discrimination.[162] Under this provision, some recipients

[162] Dep't Health & Hum. Servs., Dep't of Justice, Protecting the Rights of Parents and Prospective Parents with Disabilities: Technical Assistance for State and Local Child Welfare Agencies and Courts under Title II of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act (2015), https://www.hhs.gov/sites/default/files/disability.pdf (last visited Aug. 17, 2022).

may need to revise any pre-existing policies and procedures to ensure they, at minimum, include the required content.

The Department's experience with enforcement and compliance assistance demonstrates that interventions such as implementing policies and procedures can result in recipients being better positioned to prevent discriminatory conduct and to better avoid the risk of an employee providing services in a discriminatory manner. Thus, we are adopting the parental evaluation procedures requirement because we believe that the lack of such a requirement leaves individuals more susceptible to discrimination and recipients more susceptible to violations. Such a proactive measure will more effectively increase recipient employees' knowledge of their responsibilities under section 504.

Estimated number of recipients in the child welfare sector.

This Department, through agencies such as the Administration for Children and Families (ACF), HRSA, the Office of Minority Health, Substance Abuse and Mental Health Services Administration (SAMHSA), and the Centers for Medicare & Medicaid Services (CMS), provides Federal financial assistance through various mechanisms to child welfare programs and activities of State and local governments, tribal and territorial entities, and the private sector. Child welfare entities often receive Federal financial assistance from more than one component in the Department. For instance, State and local governments receive titles IV-B and IV-E of the Social Security Act funds from ACF and may also receive grant awards from SAMHSA.

In this cost analysis, the Department anticipates that the changes to policies and procedures will take place at the State, tribal, and appellate court office level. The Department

also recognizes that there may be costs incurred by private and community-based organizations in states where such entities are responsible for making important decisions during the child permanency process, but has been unable to collect accurate data estimating the total number of these recipients. In lieu of data on what percentage of private and community-based organizations make such decisions and may have to change their policies, we estimate that half of the 9,410 such organizations will be affected.

TABLE 29— ESTIMATED NUMBER OF RECIPIENTS COVERED BY THIS RULE FOR SOCIAL SERVICES IN THE CHILD WELFARE SECTOR

Type	Estimate
Title IV- E entities	64
State Appellate Court Offices	53
Other Grantees	17
Private and Community Based Organizations	4,705

The Department anticipates that title IV-E entities, State appellate court offices, and other grantees, or approximately 134 entities, will revise their parental evaluation procedures under the final rule, with half of these entities requiring fewer revisions. For the 70 recipients with more extensive revisions, State appellate court offices and other grantees, we estimate 1.25 total hours spent on revisions per entity. Of these, 0.75 hours will be spent by a mid-level manager equivalent to a first-line supervisor (Occupation code 43-1011), at a cost of $61.40 per hour after adjusting for non-wage benefits and the indirect costs, while an average of 0.5 hours will be spent by executive staff equivalent to a general and operations manager (Occupation code 11-1021), at a cost of $103.08 per hour after adjusting for non-wage benefits and indirect costs. For remaining recipients with less extensive revisions, we assume 0.75 total hours spent on revisions per entity. Of these, 0.5 hours will be spent by a mid-level manager, and 0.25 hours will be spent

by executive staff. We monetize the time spent on revising policies and procedures by estimating a total cost per entity of $97.59 or $56.47 depending on the extent of the revisions. For the 70 recipients with more extensive revisions, we estimate a cost of about $6,831. For the 4,769 recipients with less extensive revisions, we estimate a cost of about $269,000. We estimate the total cost associated with revisions to child welfare procedures under the final rule of about $276,000 for recipients.

c. Benefits of increasing compliance with existing non-discrimination requirements.

Reduced number of foster care placements.

A 2012 NCD report, *Rocking the Cradle: Ensuring the Rights of Parents with Disabilities and Their Children* found that parents with disabilities involved in the child welfare system have experienced disproportionately higher rates of child removals compared to parents without disabilities.[163] According to data submitted to the Administration for Children and Families (ACF) through its Adoption and Foster Care Analysis and Reporting System (AFCARS) as reported in November 2021, more than 216,838 children entered the U.S. foster care system due to safety concerns related to parental fitness during 2020.[164] Thirteen percent, or 28,771 children, were removed from a parent or caregiver based, in part, on "Caretaker Inability to Cope Due to

[163] Nat'l Council on Disability, Rocking the Cradle: Ensuring the Rights of Parents with Disabilities and Their Children, 77-78 (Sept. 27, 2012), www.ncd.gov/publications/2012/Sep272012/.

[164] The Adoption and Foster Care Analysis and Reporting System (AFCARS) collects case-level information on all children in foster care and those who have been adopted with title IV-E agency involvement. *See* U.S. Dep't of Health & Hum. Servs., Admin. for Children & Families, AFCARS Report # 28 (Nov. 19, 2021), https://www.acf.hhs.gov/cb/report/afcars-report-28.

Illness or Other Reasons" as one of the circumstances action or condition associated with child's removal. The AFCARS regulation defines "caretaker inability to cope due to illness or other reasons" as a "a physical or emotional illness, or disabling condition adversely affecting the caretaker's ability to care for the child." AFCARS submissions in 2020 on the "Caretaker Inability to Cope" out-of-home case data element demonstrate that caretaker's physical illness, emotional illness or disabling condition continues to be a factor in child removals. While it is unclear from AFCARS data how a parent's non-substance use disorder disability may factor into child removals, rate of more than one in eight removals linked to the caretaker's disabling condition appear to support concerns raised in OCR complaints and by the NCD's 2012 report, *Rocking the Cradle: Ensuring the Rights of Parents with Disabilities and Their Children*, that parents with disabilities experience disproportionate rates of removals based on stereotypes, lack of individualized assessments and failure to provide reasonable modifications and needed services.[165]

Compliance with the final rule will reduce the rate of child removals that may be based on stereotypes and unfounded assumptions about a parent with a disability's fitness to care for a child, which, in turn will reduce the associated harms that can result from the separation of

[165] Nat'l Council on Disability, Rocking the Cradle: Ensuring the Rights of Parents with Disabilities and Their Children, 14, 18 (2012), www.ncd.gov/publications/2012/Sep272012/.

parent and child.[166] In addition, it is important to recognize that while the final rule restates existing 504 obligations, new provisions make clear that decisions about a parent's ability to preserve custody and reunify with their child cannot be based on negative stereotypes, bias, or assumptions that a parent, because of a disability, cannot safely care for a child. Compliance with this requirement and other requirements in the final rule also will reduce the number of children placed in foster care.

Increased access to services.

This final rule will increase access to critical child welfare services for parents, caregivers, children and prospective parents with disabilities, preserving families and promoting foster care placement and adoption of children.

Greater stability and permanence for children with disabilities.

AFCARS collects data on all children in foster care for whom a title IV-E agency has responsibility for placement and care. This may include children for whom a public agency or tribal child welfare agency is providing care by agreement with the title IV-E agency. Title IV-E child welfare agencies do not report data on child disability except in circumstances associated with a child's removal.

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[166] *See, e.g.*, Am. Bar Ass'n., *Research on the Harm Resulting from Separation of Parent and Child* (2019), https://www.americanbar.org/content/dam/aba/publications/litigation_committees/childrights/child-separation-memo/parent-child-separation-trauma-memo.pdf.

Some sources indicate that children with disabilities experience longer stays in foster care and have a greater need for stability and permanency.[167] The final rule clarifies that section 504 protects the rights of children with disabilities. Section 84.76 requires that recipients, including child welfare agencies, administer programs in the most integrated setting appropriate to the person's needs. This requirement applies to all federally funded programs.

d. Alternatives considered.

The Department considered various alternatives during the development of this regulation. Two alternatives considered in the area of child welfare were "no action" and additional guidance.

No action.

Despite OCR's continued efforts over the past 10 years to address disability discrimination in the child welfare system through complaint investigations, significant

[167] *See, e.g.,* Christine Platt et al., *Placement Disruption of Children with Disabilities in Foster Care*, 66 J. of Pediatric Nursing 30 (2022), https://doi.org/10.1016/j.pedn.2022.05.004.

settlement agreements,[168] technical assistance[169] and outreach activities, parents and prospective parents with disabilities continue to face discriminatory barriers when accessing critical child welfare services. Failure to take regulatory action is not a reasonable response to these circumstances. This final rule furthers the policy of HHS and the White House to ensure that children, parents, prospective parents, and caregivers with disabilities receive equal opportunities to participate in and benefit from federally assisted child welfare programs and activities. By taking no action, the Department may reduce the cost of the final rule by $10,500 for public entities as well as whatever costs are born by private and nonprofit entities. However, the Department rejected this option because it believes that the final rule's provisions strike an appropriate balance between protecting the rights of parents, prospective parents, caregivers, and children with disabilities and the minimal burden imposed by this provision.

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[168] Letter from the U.S. Dep't of Justice, Civil Rts. Div. and U.S. Dep't of Health & Human Servs., Office for Civil Rights to the Massachusetts Department of Children and Families, OCR Case No. 14-182176 (2015), https://www.hhs.gov/sites/default/files/mass_lof.pdf; Settlement between the U.U. Dep't of Health & Human Servs. & the State of Ga. Dep't of Human Res., OCR Case No. 09-102792 (2016), https://www.hhs.gov/sites/default/files/dfcs-revised-settlement-agreement.pdf; Settlement between the U.S. Dep't of Health & Human Servs. & the State of Or. Dep't of Human Servs, OCR Transaction No. 18-290275, 18-291152, 18-291153 (2019), https://www.hhs.gov/sites/default/files/odhs-vra.pdf; Settlement between the U.S. Dep't of Health & Human Servs. & the W.V. Dep't of Health & Human Res., OCR Case No. 18-306552 (2020), https://www.hhs.gov/sites/default/files/ocr-agreement-with-wv-dhhr.pdf; T*echnical Assistance to New Jersey Department of Children and Families*, (2020), https://www.hhs.gov/ocr/newsroom/index.html.

[169] Dep't Health & Hum. Servs. & Dep't of Justice, Protecting the Rights of Parents and Prospective Parents with Disabilities: Technical Assistance for State and Local Child Welfare Agencies and Courts under Title II of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act, (2015), https://www.hhs.gov/sites/default/files/ocr/civilrights/resources/specialtopics/adoption/ta/disability.pdf.

Guidance.

OCR believes regulatory action is preferable to guidance in this area, and that the final rule will result in changed behavior because, unlike guidance, it has the force and effect of law. It is unclear if the guidance option would be less costly than the final rule because recipients may choose to incorporate guidance into new policies and procedures or may choose to take no action since guidance is not binding, though guidance is likely to reduce costs to some extent. However, guidance and technical assistance previously provided have not proved sufficient to successfully address discrimination in this area.

6. Other Revisions to the Regulations.

This final rule includes an extensive list of provisions that will ensure that the Department's regulation is consistent with the ADA and ADA Amendments Act of 2008, statutory amendments to the Rehabilitation Act, the Affordable Care Act, and Supreme Court and other significant court cases. It also includes revisions to update outdated terminology and delete regulatory provisions that are no longer relevant to recipients of the Department's funding. Revisions to the existing section 504 regulation that are adopted in order to align the rule with the ADA include revisions to the definition of disability[170] and addition of new provisions, some with minor revisions, including general prohibitions, maintenance of accessible features,

[170] The rule updates the definition of disability to ensure consistency with statutory amendments to the Rehabilitation Act, enactment of the Americans with Disabilities Act and the Americans with Disabilities Amendments Act of 2008, the Affordable Care Act, as well as Supreme Court and other significant court cases. These updates are discussed in detail in the preamble to the final rule.

communications, illegal use of drugs, personal devices and services, service animals, mobility devices, and direct threat. One such revision to align the rule with title II of the ADA is the notice requirement in § 84.8. Section 84.8 in this final rule has been updated to more closely align with 28 CFR 35.106, the notice section of title II.

Title II of the ADA prohibits discrimination on the basis of disability by public entities (State and local governments and their agencies).[171] It is modeled on section 504 and is generally understood to impose similar requirements.[172] Thus, any State or local government agency that receives Federal funds from HHS is already covered by title II of the ADA.

Title III of the ADA prohibits discrimination on the basis of disability by places of public accommodation, which are private entities whose operations affect commerce and fall within one of a series of listed categories, including service establishments such as a pharmacy, professional office of a health care provider, hospital, or other service establishment; social service establishments such as a day care center, senior citizen center, homeless shelter, adoption agency, or other social service center establishment; and places of education such as an nursery, elementary, secondary, undergraduate, or postgraduate private school, or other place of education").[173] When issuing its final title III rule, the Department of Justice made clear that representative examples of facilities within each category are not exhaustive. For example, the

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[171] 42 U.S.C. 12131-12134.
[172] For discussion of this issue, see III(B) of the preamble, "Revised Provisions Addressing Discrimination and Ensuring Consistency with Statutory Changes and Significant Court Decisions", 88 FR 63457 (Sept. 14, 2023).
[173] 42 U.S.C. 12181-12189.

category of social service center establishments would include not only the types of establishments listed but also establishments such as substance abuse treatment centers, rape crisis centers, and halfway houses."[174]

Thus, almost all recipients of Federal funds from the Department, including programs and activities involving health care, child welfare, social services, elementary and secondary education, and higher education have long been covered by the ADA. However, there is the potential that a small number of the Department's recipients are not already covered by the ADA. For example, the Department funds research and academic endeavors. To the extent that such funding goes to entities other than those covered by the ADA, the final rule explicitly codifies these existing requirements for the first time.

In addition to provisions added to the final rule resulting from the ADA, other provisions are added to reflect amendments to the Rehabilitation Act and Supreme Court and other court decisions. These include incorporating longstanding Supreme Court precedent regarding the obligation to provide reasonable modifications by making changes to policies, practices, and procedures, unless those changes can be shown to pose a fundamental alteration to the program or activity. They also incorporate a "direct threat" limitation consistent with not only the ADA but also Supreme Court precedent as well as a provision on illegal use of drugs that reflects an amendment to the Rehabilitation Act. The language to reflect these developments will result in

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[174] Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, 56 FR 35544, 35551 (Jul. 26, 1991).

no additional costs to HHS recipients as they have already been subject to these requirements for many years.

In addition, updating terminology such as changing "individual with a handicap" to "individual with disabilities" or "drug addict" to "individual with a substance use disorder" will have no cost implications for HHS recipients. Nor will additions to the general prohibitions and definitions sections and revisions to the employment and existing facilities sections. With regard to new construction, the final rule requires HHS recipients to use the 2010 Standards for Accessible Design rather than the Uniform Federal Accessibility Standards required by the current section 504 regulation.[175] However, the Department believes that this requirement will impose no new costs since the 2010 Standards have been used by facilities that are covered by the ADA (the vast majority of HHS recipients) since their effective date of March 15, 2012.[176]

In addition, all HHS recipients covered by section 1557 of the Affordable Care Act are required to comply with the 2010 Standards.[177] Accordingly, since 2018, HHS recipients that operate health programs and activities covered under section 1557 have been mandated to use the 2010 Standards. Additionally, as noted above, recipients covered by the ADA have been mandated to use those Standards since 2012.

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[175] *See* 45 CFR 84.23.
[176] U.S. Dep't of Justice, 2010 ADA Standards for Accessible Design, ADA.gov, https://www.ada.gov/regs2010/2010ADAStandards/2010ADAstandards.htm#titleII (last accessed Sept. 29, 2023).
[177] Nondiscrimination in Health Programs and Activities, 81 FR 31376, 31471 (May 18, 2016).

The Department adds details to the current section 504 requirement at § 84.4(b)(2), now appearing in § 84.68(d), to provide services in the most integrated setting appropriate to an individual's needs. Those details are contained in § 84.76 which is consistent with title II of the ADA and relevant case law.[178] Accordingly, the Department believes there are no additional associated costs of implementation of § 84.76.

[178] 8 CFR 35.130(d); *Olmstead v. L.C.* 527 U.S. 581 (1999).