DISCRIMINATION IN THE RENTAL HOUSING MARKET AGAINST PEOPLE WHO ARE DEAF AND PEOPLE WHO USE WHEELCHAIRS:

NATIONAL STUDY FINDINGS

U.S. Department of Housing and Urban Development | Office of Policy Development and Research

Discrimination in the Rental Housing Market Against People Who Are Deaf and People Who Use Wheelchairs: National Study Findings

Prepared for

U.S. Department of Housing and Urban Development
Office of Policy Development and Research

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June 2015

Acknowledgments

This project could not have been completed successfully without the commitment and hard work of test coordinators, advance contact staff members, testers, and other staff members of the local testing organizations that participated.

A panel of expert advisers made valuable contributions to the authors' understanding of assistive communication technologies, reasonable modifications, and other protocol design and data analysis challenges. The panel members (and their organizational affiliations at the time of the study) were Dara Baldwin (National Council on Independent Living), Kelly Buckland (National Council on Independent Living), Barbara Chandler (Metropolitan Boston Housing Partnership), Anne Houghtaling (HOPE Fair Housing Center), Lee Page (Paralyzed Veterans of America), Andrew Phillips (National Association of the Deaf), Ken Walden (Access Living), and Jamie Wichman (Access Living).

The authors also thank Urban Institute colleagues who contributed to the successful completion of this research. The regional coordinators worked closely with the local testing organizations to troubleshoot challenges in the field and to ensure that tests were conducted to the highest standards, and they provided valuable input to the full research team on testing protocols and analysis. The coordinators included Jim Crawford, Lainie Dulaney, Laura Loessner, Thu Nguyen, Max Pollock, and Sarale Sewell. David D'Orio designed the web-based data system used to enter and share testing information, and he developed and managed the process for electronically sampling ads from online sources. Lina Breslav and Lainie Dulaney coded narratives for qualitative analysis. Robert Brunson, Tim Ware, and Jeaneen Zanovello assisted the authors throughout the study with project administration, including preparations for this final report.

Finally, Judson James and Carol Star from the U.S. Department of Housing and Urban Development, Office of Policy Development and Research provided excellent guidance and oversight throughout this research effort.

The authors are responsible for any errors and omissions that remain in this report despite the generous contributions from these individuals and organizations.

Disclaimer

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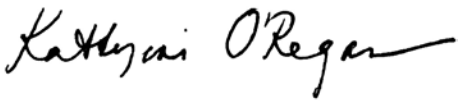
Foreword

This report provides results of the first national paired-testing study of housing discrimination against people who are deaf or hard of hearing and against people who use wheelchairs. Given differences in the challenges faced by people who are deaf or hard of hearing from those experienced by people who use wheelchairs, there are two study designs. Tests with people who are deaf or hard of hearing focused on housing searches conducted with telecommunication relay services, whereas tests with people who use wheelchairs focused on housing searches for accessible buildings and housing units. In both cases, there is systematic evidence of unfavorable treatment. The findings presented here have broad implications for policymakers, fair housing practitioners, and researchers, telecommunications engineers, professionals in the housing construction industry, and those in housing management firms.

When people who are deaf or hard of hearing use a telecommunication relay service to contact housing providers about advertised rental units, providers are less likely to take their calls than calls from hearing homeseekers. Providers are more likely to take calls from people who use the more advanced version of assisted telephoning—Video Relay Service (VRS)—but they do not take all VRS calls. Homeseekers who are deaf or hard of hearing who do successfully reach a housing provider are less likely than other homeseekers to be told about available units. Although this study cannot determine whether the differential treatment is because of the homeseekers' hearing status or the communication delays caused by the technology, the findings indicate significant differences in housing providers' willingness to engage when contacted remotely.

People who use wheelchairs start their search for rental housing at a disadvantage in many communities tested because of the inaccessibility of a significant portion of the available housing stock. Advertised units were first examined by local project staff to determine which units were regarded as accessible for testing. Staff found that, in some metropolitan areas, a major portion of units identified through advertisements are not accessible to people using wheelchairs. Even when housing is accessible, homeseekers in wheelchairs face barriers. When contacted, housing providers are less likely to make an appointment with people who use a wheelchair than they are with ambulatory homeseekers. When meeting in person, providers are less likely to tell homeseekers in wheelchairs about any available units and also are less likely to show them any units. In addition, although housing providers agree to most requests for a reasonable modification to make the housing more accessible, requests are denied in a few clear instances or, more frequently, providers fail to provide a clear response.

By focusing on the experiences of well-qualified homeseekers during early stages of their search, the results in this study may well understate the full extent of unfavorable treatment. Discrimination against marginally qualified homeseekers may be greater, and further forms of discrimination may occur later in the rental housing search process.



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Executive Summary

This executive summary provides an overview of the first national paired-testing study of housing discrimination against people who are deaf or hard of hearing and people who use wheelchairs. This one study is, in effect, two. The challenges faced by people who are deaf or hard of hearing differ from those experienced by people who use wheelchairs, and the study design reflects those differences. Tests with people who are deaf or hard of hearing focused on housing searches conducted with telecommunication relay services (TRSs), whereas tests with people who use wheelchairs focused on housing searches for accessible buildings and housing units. The findings and implications presented in this executive summary and in the full report are relevant not only for policymakers, fair housing practitioners, and researchers, but also for telecommunications engineers, professionals in the housing construction industry, and those in housing management firms.

The principal findings from the two studies are summarized as follows.

- *When well-qualified homeseekers who are deaf or hard of hearing contact housing providers and use assistive communication technologies to inquire about recently advertised rental housing, providers are less likely to respond to their inquiries*. When they do respond, the *housing providers tell homeseekers who are deaf or hard of hearing about fewer available housing options than comparable homeseekers who are hearing*. When providers do tell homeseekers about housing units, they quote about the same rental terms, on average, to homeseekers who are deaf or hard of hearing as they quote to those who are hearing.
- Well-qualified homeseekers who use wheelchairs are more likely than comparably qualified homeseekers who are ambulatory to be denied an appointment to view recently advertised rental housing in buildings with accessible units. Those who do receive an appointment are less likely than their ambulatory counterparts to be told about and shown suitable housing units. The rental terms and costs are similar for both groups. *When homeseekers who use a wheelchair ask about modifications that would make the available housing more accessible to them, housing providers either fail to provide a clear response or explicitly deny more than one-fourth of the requests*.

Findings and Their Implications

This section provides an overview of the specific findings from the study of discrimination against people who are deaf or hard of hearing and against people who use a wheelchair *at the early stages of rental housing transactions*.

Discrimination Against Homeseekers Who Are Deaf or Hard of Hearing

Housing providers are less likely to communicate with homeseekers who are deaf or hard of hearing, and providers tell those homeseekers about fewer available units. Housing providers fail to respond to TRS calls from testers who are deaf or hard of hearing

more often than to calls from hearing testers who call by telephone. Hearing testers successfully reach an agent in 95.8 percent of tests compared with 90.7 percent for deaf and hard-of-hearing testers, a statistically significant difference of 5.1 percentage points. When both testers of a pair do reach a provider to discuss available housing, testers who are deaf or hard of hearing are 2.3 percentage points less likely to be told about any available units. Combining providers' willingness to communicate with a homeseeker and the availability of units reveals that housing providers tell deaf and hard-of-hearing testers about 0.14 fewer housing units per inquiry than they do hearing testers. In other words, in seven attempts to find out about available rental housing, a homeseeker who is deaf or hard of hearing learns about one fewer available unit than a comparable hearing homeseeker. On average, those units have slightly lower rent and, therefore, slightly lower annual cost of occupancy than units about which control testers are told.

Near the end of the remote interactions, testers attempted to make an appointment to meet the housing provider in person and view available units. Housing providers who are willing to communicate with testers who are deaf or hard of hearing and testers who are hearing are equally likely to schedule an appointment with both.

Homeseekers who are deaf and who use VRS are treated more favorably on two factors than those who use the other two relay services. Housing providers are significantly more likely to take calls from homeseekers who are deaf and who use VRS compared with their hearing counterpart than from deaf or hard of hearing testers who contact them using IP Relay or IP CTS. Providers do not take all calls from homeseekers using VRS, however. Providers also are more likely to tell homeseekers using VRS whether units are available.

Discrimination Against People Who Use Wheelchairs

On average, less than one-half of advertisements for privately owned rental housing in the 30 metropolitan housing markets included in the study appeared to lead to units accessible by people who use wheelchairs. Overall, only 44 percent of advertisements for rental units randomly selected for paired testing led to units identified as accessible.[1] Rates of accessibility vary considerably across the 30 MSAs included in this study, from a low of 11 percent to a high of 87 percent. Sites with a greater proportion of rental units in multifamily buildings rather than single-family housing and sites with a greater proportion of rental units in buildings constructed after 1990 have higher rates of accessible units.

When renters who use wheelchairs inquire about advertised housing that appears to be accessible, they are treated less favorably on several key indicators than equally qualified renters who are ambulatory. Housing providers are 1.7 percentage points less likely to make an appointment with homeseekers who use wheelchairs than with control testers. When both testers of a pair are able to meet with a provider and a suitable unit is

[1] For purposes of this study, *accessibility* is defined as the ability of a tester who uses a wheelchair to access a building and access available units. This operational standard is not strictly equivalent to specific laws or regulations. Advance contact staff, protected testers, and control testers had roles in identifying accessibility barriers before tests began and during tests.

available,[2] users of wheelchairs are 2.4 percentage points less likely to be told about any available units. When housing providers tell both testers about available units and where units can be inspected by a person who uses a wheelchair, providers are 3.1 percentage points less likely to show any units to people who use wheelchairs. On average, those units have slightly lower rent and, therefore, slightly lower annual cost of occupancy compared with units people who are ambulatory are told about. No factor consistently contributes to variations in treatment of testers using wheelchairs.

When asked whether they would allow modifications that would improve the accessibility of the available units, housing providers deny 7 percent of requests and fail to provide a clear response 21 percent of the time. Providers who do not provide a clear response say they do not know the answer, need to check with a supervisor, or simply do not offer a final response, which limits the information a homeseeker needs to make an informed decision. Housing providers' modification approval rate varies by the type of request. Housing providers approve more than 80 percent of requests to install bathroom grab bars and lever door handles but approve fewer than 50 percent of requests to lower kitchen cabinets and replace carpets.

Limitations

The paired-testing methodology's strength is that it offers direct observation of differences in treatment, but it has limitations. The estimates of discrimination reported in this study capture treatment that occurred during initial housing search inquiry and information-gathering stages, but they do not capture all forms of discriminatory treatment that renters might experience. Paired testing cannot be applied to later stages in a rental transaction, including the submission of a signed rental application, because that would entail submitting false information. The research methodology cannot observe treatment of existing tenants because the housing provider knows the actual characteristics of residents; creating matched tester pairs would be nearly impossible. Results also probably understate the level of discrimination that occurs because they do not reflect the experience of the average disabled homeseeker. Testers presented themselves to housing providers as well qualified for the housing units about which they inquired. Some evidence suggests that testers posing as marginally qualified homeseekers are more frequently discriminated against (Hunter and Walker, 1996).

Background on the Fair Housing Act and Disability-Based Housing Discrimination

Title VIII of the Civil Rights Act of 1968 and subsequent amendments, often referred to as the Fair Housing Act, make it illegal to discriminate on the basis of race, color, national origin, religion, sex, familial status, or handicap in the sale, rental, and financing of housing. In 1988, the U.S. Congress amended the act to extend coverage to the last two groups,

[2] *Suitable units* are defined as those that are within a tester's price range, are available when needed, and have at least the minimum number of bedrooms required for the tester's (assigned) household. A suitable unit for a tester using a wheelchair also means that the unit is accessible or can be modified to become accessible.

families with children and people with disabilities.[3] Under the act, *disability* is defined to include physical and mental disabilities.[4] The amendments that went into effect in March 1989 make it illegal for a housing provider to refuse to rent or sell a housing unit to someone because of a disability; to impose different application or qualification criteria; or to require different fees, terms, or conditions than those required of homeseekers without disabilities. Furthermore, housing providers are required to make reasonable accommodations in rules, policies, practices, or services that may be necessary for people with disabilities to use and enjoy the housing. Housing providers also are required to allow people with disabilities to make reasonable structural modifications at their own cost that would yield them the "full enjoyment of the premises."[5] Finally, the law requires multifamily housing built for first occupancy after March 13, 1991, to be designed and constructed to include certain features of accessible design.

Since the Fair Housing Act amendments were enacted, discrimination complaints made on the basis of physical and mental disabilities have become the greatest share of those received by federal and local agencies and private fair housing organizations. In 2011, 55 percent of the 1,799 fair housing complaints received by the U.S. Department of Housing and Urban Development (HUD), 47 percent of the 7,551 fair housing complaints received by local Fair Housing Assistance Program agencies, and 44 percent of the 17,701 fair housing complaints received by member organizations of the National Fair Housing Alliance throughout the United States were based on allegations of disability discrimination (NFHA, 2012). The number of complaints might reasonably be expected to continue rising as the U.S. population ages and the number of people with a disability increases (Smith, Rayer, and Smith, 2008).

Study Goals and Methods

Published research on disability-based housing discrimination is sparse, although the relative number of formal complaints of such discrimination suggests the problem is widespread. The goal of the Housing Discrimination Study-Disabilities (HDS-Disabilities) and this report is to produce the first national estimates of discrimination in private-market rental housing against two groups provided protection under the 1988 amendments—people who are deaf or hard of hearing and people who use a wheelchair. HDS-Disabilities builds on the pilot study of discrimination against people with disabilities that found significant levels of discrimination against people who were deaf or hard of hearing and people who used wheelchairs when they searched for rental housing in the Chicago area (Turner et al., 2005). In addition to producing national estimates of discrimination, this study measures the willingness of housing providers to allow a reasonable modification to available units for people who use a wheelchair. It also measures the percentage of advertisements that lead homeseekers to units that are accessible for someone who uses a wheelchair.

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[3] Fair Housing Act, 42 U.S.C. § 3604(f)(3)(A) (2014).

[4] Physical and mental disabilities are defined as hearing, mobility, and visual impairments; chronic alcoholism; chronic mental illness; AIDS; AIDS Related Complex; and mental retardation that substantially limit one or more major life activities. For discussion of what the Fair Housing Act covers, see http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/FHLaws/yourrights.

[5] Fair Housing Act, 42 U.S.C. § 3604(f)(3)(A) (2014).

HDS-Disabilities was conducted using a paired-testing methodology, which is a powerful tool for observing discrimination in action. In a paired test, two individuals—one of whom is a member of a protected class—pose as equally qualified homeseekers. Both testers are trained to make the same inquiries, express the same preferences, and offer the same qualifications and needs. From the perspective of the housing provider, the only difference between the two testers is disability status; testers should receive the same information and assistance. Systematic differences in treatment—telling the protected tester that an apartment is no longer available when the control tester is told about one or more available units, for example—provide direct evidence of discrimination.

The approaches to the two testing tracks were quite different: the tests for people who are deaf or hard of hearing were conducted remotely from three locations, and the tests for people who use wheelchairs were conducted in person in 30 metropolitan statistical areas (MSAs).

With the testing track for people who are deaf or hard of hearing, the study used the following approach.

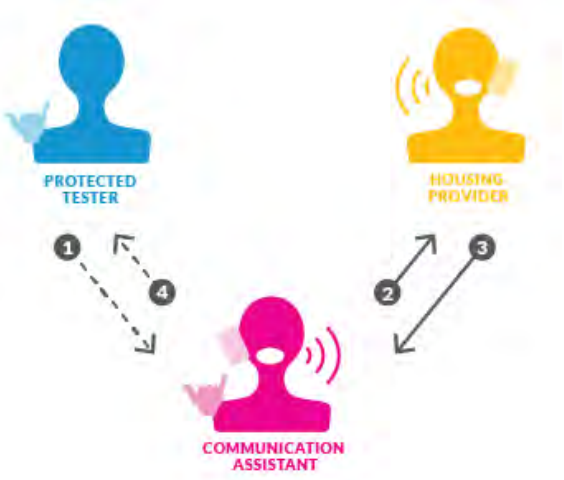
- The 1,665 tests[6] in 168 MSAs accounted for more than four-fifths (82 percent) of the population that is deaf or hard of hearing and that resides in rental housing.[7]
- Testers who are deaf or hard of hearing contacted housing providers by one of three types of TRSs. The technologies used in the study are Video Relay Service (VRS), Internet Protocol Captioned Telephone Service (IP CTS), and Internet Protocol Relay Service (IP Relay). These three services currently are the most commonly used tools with which people who are deaf or hard of hearing communicate remotely with hearing people. Testers who are hearing made contact by telephone. (See exhibits ES-1, ES-2, and ES-3, and the Study Design and Paired-Testing Protocols section for a description of each technology.)
- Testers inquired about advertised and other available housing for rent, including rent costs and terms. Testers who are deaf or hard of hearing did not request any reasonable accommodations or modifications.
- Testers concluded test contacts by requesting an appointment to meet in person, although no site visits were conducted. Testers able to secure an appointment canceled it before the meeting time.

[6] Because the study population for these tests comprised people who used a TRS, the tester pool for conducting the tests included both people who were deaf and those who were hard of hearing.

[7] The American Community Survey (ACS), from which the data are drawn, asks if a person is deaf or has serious difficulty hearing.

Exhibit ES-1. Video Relay Service

To use VRS, a caller who is deaf and communicates in sign language places a call through a service (for example, a video phone, computer web camera, or dedicated VRS camera) to a communication assistant. The caller signs the message to be conveyed to the call recipient. The communication assistant telephones and speaks that message to the recipient. As the recipient speaks the response directly to the communications assistant, the assistant signs the response to the caller through VRS. The use of sign language and speech enables the caller and the call recipient to communicate at or near the pace of spoken language.

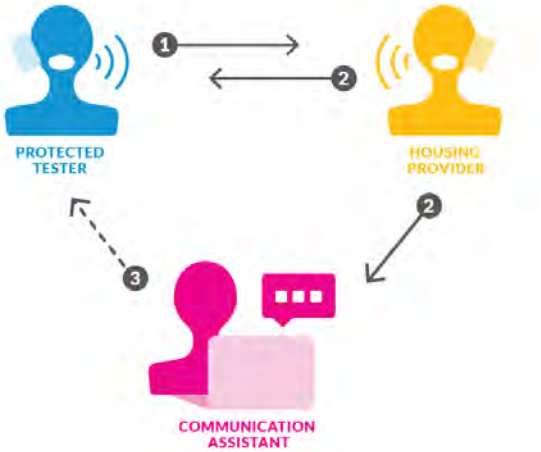


1. PT signs message to HP through CA: *And how much is rent?*
2. CA speaks PT's message to HP: *And how much is rent?*
3. HP speaks message to PT through CA: *The one bedroom is $750.*
4. CA signs HP's message to PT: *The one bedroom is $750.*

CA = communication assistant; HP = housing provider; PT = protected tester. VRS = Video Relay Service.

Exhibit ES-2. Internet Protocol Captioned Telephone Service

With IP CTS, the caller and the call recipient have partial direct contact. A caller who is deaf calls the recipient through a captioned telephone service website and speaks directly to the call recipient. As the recipient speaks a response, a communication assistant repeats the response to the caller and voice recognition technology creates the message in text through the IP CTS service. The delay associated with typing the call recipient's response can last from 7 to 10 seconds.

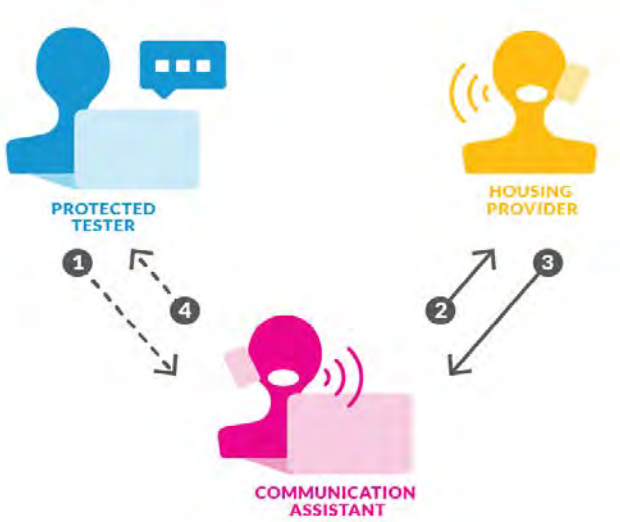


1. PT speaks message to HP: *And how much is rent?*
2. HP speaks message to PT and CA: *The one bedroom is $750.*
3. CA repeats HP's message to PT and voice recognition technology transcribes the message into text for the PT: *The one bedroom is $750.*

CA = communication assistant. HP = housing provider. IP CTS = Internet Protocol Captioned Telephone Service. PT = protected tester.

Exhibit ES-3. Internet Protocol Relay Service

IP Relay is similar to VRS, but instead of signing the message, the caller types it. A caller who is deaf accesses the service (for example, an IP Relay website or IP Relay text application) and types the message to be conveyed to the recipient. The communication assistant telephones the recipient and speaks that message. After the recipient speaks a response directly to the communication assistant, the assistant types the response to the caller through the IP Relay. With IP Relay, typed messages can take 2 to 5 seconds to appear.



1. PT types message to HP through CA: *And how much is rent?*
2. CA speaks PT's message to HP: *And how much is rent?*
3. HP speaks message to PT through CA: *The one bedroom is $750.*
4. CA types HP's message to PT: *The one bedroom is $750.*

CA = communication assistant. HP = housing provider. IP Relay = Internet Protocol Relay Service. PT = protected tester. VRS = Video Relay Service.

For the wheelchair-testing track, the study used the following approach.

- The 1,265 wheelchair tests in a sample of 30 MSAs represented areas containing nearly three-fourths (73 percent) of the population that has a mobility disability and resides in rental housing.[8] In 1,209 of these tests, both testers reached the in-person stage of the test.
- Tests were conducted in person after testers contacted housing providers to make an appointment.
- Testers inquired about suitable advertised and other available housing for rent, including rent costs and terms.[9]
- Testers who use wheelchairs requested permission to make up to three reasonable modifications but did not request any reasonable accommodations.

[8] The ACS, from which the data are drawn, asks if a person has serious difficulty walking or climbing stairs.

[9] *Suitable units* are defined as those that are within testers' price range, are available when needed, and have at least the minimum number of bedrooms required for the testers' (assigned) household. A suitable unit for the tester using a wheelchair also means that the unit is accessible or modifiable to become accessible.

Implications for Research, Education, and Practice

The following suggestions for future research and action steps are based on findings from HDS-Disabilities.

Research

Housing providers' treatment of less qualified homeseekers. Testers participating in HDS-Disabilities were assigned household incomes that made them well qualified for the housing about which they inquired. For some tests they were assigned a high household income, and for other tests they were assigned a low to moderate income, as appropriate. Because all testers in this study posed as well qualified for the advertised housing, however, further paired-testing studies might examine treatment of less qualified homeseekers whose assigned income more closely aligns with the low average incomes of actual renters who are deaf and who use wheelchairs.

Housing providers' treatment of testers who are deaf or hard of hearing during in-person visits. Tests that were conducted for the part of the study about people who are deaf and hard of hearing took place remotely. Results do not indicate the treatment that testers might have experienced had they inquired about available housing during in-person site visits. Most comments that housing providers made during remote interactions with testers who were deaf or hard of hearing were concerned with the provider's ability to communicate with those homeseekers during an in-person meeting.

Design and construction compliance. The number of wheelchair-accessible units found in the study sites is suggestive of a significant problem but, as explained in the Incidence of Discrimination section, the findings do not represent a national estimate of accessibility. The findings do strongly suggest a need for research in this area. Beginning with a carefully defined population of housing structures from which to draw a representative sample of units covered by the Fair Housing Act's design and construction requirements, the study could be carried out by single rather than paired testers who are trained to document any discrepancies between housing units' design and legal requirements. Research could focus on regions or be conducted nationally to produce estimates of the housing stock that does not meet the federal Fair Housing Act design and construction requirements for housing first occupied after March 13, 1991.

Use of TRS technologies. The study drew on TRS usage data to establish targets for the number of tests to be conducted with each of the three TRSs included in the study. As discussed in the report, differences emerged in housing providers' willingness to communicate with homeseekers who are deaf or hard of hearing by the type of TRS used. It would be informative for policymakers to know more about the use of TRSs. Issues to pursue include the demographic and socioeconomic characteristics of people who use the various TRSs; factors that underlie any differences in the characteristics of users by technology type; and what barriers, if any, people who are deaf or hard of hearing experience using the different TRSs.

Educational outreach

Property accessibility and reasonable modification requirements. When testers asked during telephone or e-mail contact if a property was wheelchair accessible, a number of housing providers did not know. Providers also could not (or did not) always respond to testers' requests for permission to make reasonable modifications to lobby areas or apartment interiors. Differences in responses correlated to the complexity of the modifications request suggest that some providers are unaware of or indifferent to the law pertaining to reasonable modifications. Housing providers need increased awareness of the accessibility of their own properties and training in the law regarding requests for reasonable modifications.

Fair Housing Act and other laws that prohibit discrimination in housing against people with disabilities. Findings on the differential treatment of people who are deaf or hard of hearing and people who use wheelchairs, along with housing providers' comments on housing accessibility and modification requests, point to the need for ongoing education on laws prohibiting discrimination based on disability status. Property owners and managers must understand the legal requirements the Fair Housing Act and other laws establish and the properties covered.

Practice

Improvements to TRS technologies. Findings show that housing providers contacted by people using VRS technology were more likely to communicate with the caller than with those using the other TRSs. Compared with the two other technologies used in this study, VRS supports a smoother and quicker pace of communication between a person who is deaf and a person who is hearing. Use of VRS relies on a person's ability to communicate in sign language, however, so this technology is not an option for everyone who needs to use a relay service. To the extent that differential treatment of people who are deaf or hard of hearing is triggered in part by technology rather than by hearing status, improvements in communication technologies could improve the housing search, and possibly the outcomes, for people who begin their housing search remotely.

Demand for wheelchair-accessible rental housing. Discrimination-based impediments to housing access, along with inaccessible housing stock and population trends, likely will increase the need for accessible housing in cities across the United States. Findings from this study show that people who use wheelchairs face reduced housing options compared with people who are ambulatory. As the U.S. population trends older and rates of disability increase, competition could increase among renters for accessible apartments and homes. Increasing pressures on housing stock could be particularly strong in markets where a predominance of housing was built for first occupancy before March 13, 1991, when the Fair Housing Act's design and construction requirements went into effect. Housing policy and industry professionals in cities with older housing stock and an aging population need to consider how to meet an increased demand for accessible units.

Introduction

This report presents findings from the first national study of housing discrimination against people with disabilities. The study applies the paired-testing methodology in metropolitan statistical areas (MSAs) nationwide to measure the incidence and forms of discrimination experienced by renters who are deaf or hard of hearing and renters who use a wheelchair. Findings underscore the challenges people with disabilities face when searching for a home or apartment to rent. Although they might not face higher housing costs, on average, than homeseekers without disabilities, they must contact more housing providers to find housing to rent.

When well-qualified homeseekers who are deaf or hard of hearing[10] contact housing providers using assistive communication technologies to inquire about recently advertised rental housing, providers are less likely to respond to their inquiries. When housing providers do respond, they tell homeseekers who are deaf about fewer available housing options than comparable homeseekers who are hearing. For the housing units they are told about, homeseekers who are deaf are quoted slightly lower rents and about the same rental terms, on average.

Well-qualified homeseekers who use wheelchairs are more likely to be denied an appointment to view recently advertised rental housing in buildings with accessible[11] units than are comparably qualified ambulatory homeseekers. Those who do receive an appointment are less likely than their ambulatory counterparts to be told about and shown suitable housing units.[12] The rental terms and costs are similar for both groups. When homeseekers who use wheelchairs ask about modifications that would make the available housing more accessible to them, housing providers either fail to provide a clear response to, or explicitly deny, more than one-fourth of the requests.

Background and Research on Disability-Based Rental Housing Discrimination

In 1988, the U.S. Congress amended Title VIII of the Civil Rights Act of 1968, often referred to as the Fair Housing Act, to prohibit discrimination based on disability in the sale, rental, and financing of housing. For the purposes of the act, *disability* is defined to include physical and mental disabilities.[13] The amended act, which went into effect in March 1989, makes it illegal for

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[10] In the remainder of this report, *deaf* (lowercase) refers to people who are either deaf or hard of hearing, and *Deaf* (capitalized) refers specifically to people who are deaf rather than hard of hearing.

[11] For the purposes of this study, *accessibility* refers to the ability of the tester who uses a wheelchair to access a building and available units. Advance contact staff members, protected testers, and control testers had roles in in identifying accessibility barriers before and during tests. Testers used an accessibility checklist but did not use it to indicate whether or not building or unite was accessible according to housing accessibility laws.

[12] *Suitable housing units* are defined as units that meet the cost, size, and availability date requirements of both members of a tester pair and are wheelchair accessible or easily modified to be so for the tester who uses a wheelchair.

[13] The Fair Housing Act prohibits discrimination on the basis of race, color, national origin, religion, sex, familial status, or handicap. The amended act extended coverage to the last two groups, families with children and people with disabilities. Physical and mental disabilities are defined as hearing, mobility, and visual impairments; chronic alcoholism; chronic mental illness; AIDS; AIDS Related Complex; and mental retardation that substantially limit one or more major life activities. For discussion of what the act covers, see http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/FHLaws/yourrights.

a housing provider to refuse to rent or sell a housing unit to someone because of a disability; to impose different application or qualification criteria; or to require different fees, terms, or conditions than those required of homeseekers without a disability. Furthermore, housing providers are required to make reasonable accommodations for persons with disabilities, such as changes in rules or services, as long as the changes do not create an undue burden or cost on the provider. Housing providers also are required to allow persons with disabilities to make reasonable structural modifications at their own cost to the interiors and exteriors of units and to public areas that would yield them the "full enjoyment of the premises."[14] Examples include but are not limited to (1) installing an entryway ramp, (2) widening doorways, (3) installing grab bars in bathrooms, (4) lowering kitchen cabinets, (5) installing visible fire alarms, and (6) installing doorbell flashers. Finally, the law requires new multifamily housing built for first occupancy after March 13, 1991, to be designed and constructed to be accessible. See appendix A for more information on the 1988 amendments and joint statements from the U.S. Departments of Justice and Housing and Urban Development (HUD) on design and construction requirements and on reasonable modifications.

Disability discrimination complaints have become the greatest share of those received by federal and local agencies under the Fair Housing Act since persons with disabilities were added as a protected group. In 2011, 55 percent of the 1,799 fair housing complaints received by HUD, 47 percent of the 7,551 fair housing complaints received by local Fair Housing Assistance Program agencies, and 44 percent of the 17,701 fair housing complaints received by member organizations of the National Fair Housing Alliance (NFHA) throughout the United States were based on allegations of disability discrimination (NFHA, 2012). NFHA identifies three factors believed to contribute to the many disability complaints. First, HUD, local governments, and nonprofit organizations have increased their capacities to assist more victims of disability housing discrimination. Second, in cases where a housing provider refuses to make a reasonable accommodation or reasonable modification, disability discrimination might be easier to detect than other forms of discrimination. Finally, developers continue to build inaccessible apartment buildings despite the Fair Housing Act's design and construction standards (NFHA, 2012).

Whereas some fair housing organizations have expanded their enforcement and education programs to include people with disabilities, people who have disabilities continue to face challenges and barriers when seeking housing. In *Discrimination Against Persons with Disabilities: Barriers at Every Step*, Turner et al. (2005) found that adverse treatment of people with disabilities occurs even more often during the initial stages of housing searches than does adverse treatment of African-American or Hispanic renters. The challenge of finding an accessible, affordable, and decent housing unit becomes even more difficult in tight housing markets. A 2009 report to Congress found that approximately 25 percent of renter households with disabilities experienced worst case housing needs. The report defines such households "as very low-income renters who do not receive government housing assistance and who either pay more than one-half of their income for rent, live in severely inadequate conditions, or both" (Souza et al., 2009: iii).

[14] See Fair Housing Act, 42 U.S.C. § 3604(f)(3)(A) (2014).

The number of complaints might reasonably be expected to continue rising as the number of people with a disability increases. Researchers examining rates of disability among aging populations write, "Since disability rates rise with age … the aging of the population will bring large increases in the number of disabled persons" (Smith, Rayer, and Smith, 2008: 3).

Past Research

Since the late 1970s, HUD has rigorously monitored trends in the incidence of racial and ethnic discrimination in both rental and sales markets approximately once each decade through a series of nationwide paired-testing studies. HUD also has sponsored research that extends the paired-testing methodology to other protected classes, including people with disabilities. Paired testing is a powerful tool for observing discrimination in action. In a paired test, two individuals—one a member of a protected class and the other a tester similar in every way except for the characteristic being tested—pose as equally qualified homeseekers. Both testers are carefully trained to make the same inquiries, express the same preferences, and offer the same qualifications and needs. From the perspective of the housing provider, the only difference between the two is the one characteristic, be it race, ethnicity, disability status, or other characteristic; testers should receive the same information and assistance. Systematic differences in treatment—telling the protected homeseeker that an apartment is no longer available but telling the control partner that he or she could move in next month, for example—provide direct evidence of discrimination.

Published research, including paired-testing research, on disability-based housing discrimination is sparse. In addition, fair housing groups that conduct tests focused on disabilities through their investigative and enforcement programs rarely offer publicly available reports on the results of their work.[15] The literature that is available leaves little doubt that persons who are deaf, use a wheelchair, or have other disabilities experience differential treatment in rental housing markets. For example, a paired-testing study conducted by the Equal Rights Center (ERC) found that when testers who were deaf contacted a housing provider through an Internet-based relay communication system, they were treated less favorably than control testers in 45 percent of tests (ERC, 2012). ERC conducted 100 matched-pair telephone tests of randomly selected rental properties in one metropolitan area.

The pilot study of discrimination against persons who were deaf and persons who used a wheelchair in one metropolitan area consisted of 101 paired remote tests with persons who were deaf and 99 paired in-person tests with persons who used wheelchairs. The study found that the tester was refused service in one of four calls made by testers who were deaf using the teletypewriter (TTY) system to inquire about advertised rental units (Turner et al., 2005).[16] When housing providers accepted calls of testers who were deaf, the testers received

[15] Reports might not include much detailed information if complaints and settlements have confidentiality clauses or if settlements state that there is not an admission of discrimination.

[16] Testers using TTY contacted a relay service to place calls to housing providers. Communication assistants read the typed messages from testers to housing providers and then typed providers' responses for transmission to the deaf testers.

significantly less information about the rental application process and fewer opportunities for followup contact than did comparable testers in the control group who made telephone inquiries. Among people who used wheelchairs and visited rental properties to inquire about advertised units, results showed that they were as likely as testers without disabilities to meet with a housing provider. In more than 1 of every 4 visits, however, people who used wheelchairs learned about fewer available units than did testers without disabilities; testers who use wheelchairs were denied opportunities to inspect any unit in 3 of 10 visits. People who used wheelchairs also received less information about the application process, although they were quoted lower fees than were comparable testers without disabilities (Turner et al., 2005).

Goals for the Housing Discrimination Study-Disabilities

The primary goal of the Housing Discrimination Study-Disabilities (HDS-Disabilities) is to produce national estimates of discrimination in rental markets against people who are deaf and people who use a wheelchair. This study also measures housing providers' willingness to allow reasonable modifications to available units for people who use a wheelchair. In addition, it measures the percentage of rental advertisements that lead homeseekers to units that are accessible for someone who uses a wheelchair.[17] This study builds on the study by Turner et al. (2005), which demonstrated the feasibility of using the paired-testing methodology to measure rental housing discrimination against people with a disability. Protocols and measures of discrimination used in HDS-Disabilities draw heavily from those used in the pilot study. Sampling and field procedures draw from the more recent 2012 Housing Discrimination Study (Turner et al., 2013) to reflect changes in rental housing markets, housing search practices, and communication technologies.

Strengths and Limitations of Paired Testing

The paired-testing methodology originated as a tool for fair housing enforcement, because it could be used to detect and document individual instances of discrimination. Since the late 1970s, paired testing also has been used to rigorously measure the prevalence of discrimination across the housing market. When many consistent and comparable tests are conducted for a representative sample of housing units, they directly measure patterns of adverse treatment attributed to the disability status of the homeseeker.

Research testing shares common origins with enforcement testing, but it differs in important ways. Because its goal is to measure the prevalence of discrimination across the market as a whole, research testing usually covers a *representative sample* of available homes and apartments, rather than targeting properties or communities where discrimination is suspected. Research testing requires many tests to produce *generalizable results*, thus covering many different housing providers, rather than multiple tests to establish discrimination by a single provider. To generate results that can be *aggregated* across many tests, research protocols have to be consistent for every test, whereas the best enforcement

[17] The study does not measure providers' willingness to make reasonable accommodations for people who are deaf or people who use wheelchairs or to make reasonable modifications for people who are deaf. It does not assess compliance with the design and construction requirements of the Fair Housing Act.

protocols are flexible enough to respond to circumstances that arise in particular tests. Finally, research testing report forms require predefined, closed-ended responses that can be consistently compared across many tests rather than detailed and nuanced narratives that convey exactly what happened in an individual test.

Paired testing has tremendous power and potential, but the methodology also has limitations. For practical reasons, paired testing cannot be applied to some of the important stages in a rental transaction. For example, third-party testing protocols cannot legitimately involve the formal submission of fraudulent information in a signed rental application, so it is not possible to capture discrimination that might occur at the final stage of a rental transaction. Discrimination against established tenants (such as in lease renewals, property maintenance, or use of amenities) cannot readily be captured through paired testing because the housing provider already knows the details of residents' actual characteristics. As a consequence, the estimates of discrimination reported in this study do not capture all the forms of discriminatory treatment that renters might experience, only those that occur during the initial inquiry and information-gathering stages.

Moreover, the results do not reflect the experience of the average or typical homeseeker, because testers presented themselves as unambiguously well qualified for the homes and apartments about which they inquired. Evidence from research on mortgage lending discrimination suggests that when testers pose as marginally qualified homebuyers, differential treatment occurs more frequently (Hunter and Walker, 1996). The median household income of renter households with a member who is deaf or hard of hearing is $22,500, and the median income of renter households with a member who has a mobility disability is $18,300 (Ruggles et al., 2010). Therefore, the results of this study probably understate the total level of discrimination that occurs in the rental marketplace.

Paired testing is explicitly designed to control for all relevant differences between testers so differences in treatment can be attributed to discrimination against a protected class. Nonetheless, random factors—not only systematic factors—might contribute to observed differences, and some tester attributes or behaviors might not be fully controlled for or observed. Therefore, not every instance of favored treatment to control testers constitutes systematic discrimination, and in some instances testers with a disability experienced more favorable treatment than their test partners—for either random or systematic reasons. Therefore, the results report the share of tests in which the control tester was favored over the protected tester, the share in which the protected tester was favored over the control tester, and the difference between the two. This difference—or net measure—provides a conservative, lower bound measure of systematic discrimination against homeseekers with a disability because it subtracts not only random differences from the gross measure of control-favored treatment but also some differences that might reflect systematic reverse discrimination.

Critics of paired testing have raised ethical and legal objections, arguing that the methodology deceives or entraps research subjects, imposes costs (of interacting with a fictitious customer), and may invade the privacy rights of the person or office being tested (see Edley, 1993). A convincing argument can be made, however, that paired testing is often the only feasible strategy for detecting and measuring discrimination and that the benefits far

outweigh the drawbacks.[18] These studies provide no lure or incentive for rental agents to act any differently from the way they would otherwise act. Responsible testing studies intentionally involve as limited an intrusion as possible and take the minimum amount of time necessary. They also involve responding to offers for housing that are publicly advertised and subject to laws or regulations barring discrimination (Fix and Struyk, 1993).

Organization of This Report

The remainder of this report details the methods used and results found in the study. Because of the different challenges experienced by people who are deaf and people who use wheelchairs, this one study is, in effect, two studies. Accordingly, the key design elements and testing protocols, sampling and analysis methods, and research findings are reviewed separately within each section for each component. The Study Design and Paired-Testing Protocols section describes the study design and data collection protocols. The Sampling and Analysis Methods section documents sampling and analysis methods. The Incidence of Discrimination section presents national estimates of discrimination against people who are deaf and people who use wheelchairs, and it also discusses findings from multivariate analyses. The Conclusions section presents suggestions for future research and actions to further understand and to reduce disability based discrimination.

[18] In *Havens Realty Corp.* v. *Coleman*, 455 US 363 (1982), the Supreme Court held, "A tester who has been the object of a misrepresentation made unlawful … has suffered injury in precisely the form the statute was intended to guard against, and therefore has standing to maintain a damages claim.… That the tester may have approached the real estate agent fully expecting that he would receive false information, and without any intention of buying or renting a home, does not negate the fact of injury." See http://supreme.justia.com/cases/federal/us/455/363/case.html.

Study Design and Paired-Testing Protocols

This study's field protocols and processes built on those used for the 2012 Housing Discrimination Study (Turner et al., 2013) and the 2005 pilot study on disabilities (Turner et al., 2005). A centrally located field director who oversaw regional coordinators managed the testing, which was performed by local testing organizations, including fair housing groups and others capable of conducting this specialized work, in the study sites. See appendix B for a description of data collection oversight and management and appendix C for a list of participating organizations.

Local testing organizations recruited testers according to the types of tests a site was assigned to conduct. Protected testers participating in the component for people who are deaf had to be deaf or hard of hearing. They could know American Sign Language (ASL) or not. All testers participating in this component could be diverse in age but had to be perceived in name and voice as White.[19] Protected testers participating in the component for people who use wheelchairs had to have a mobility disability that required the long-term use of a wheelchair (manual or motorized) or scooter. Testers in this component could be diverse in age, race, and ethnicity. Recruitment in wheelchair testing sites was guided by information on local demographics. Organizations were provided recruitment targets for racial and ethnic groups on the basis of census data for the MSA. Organizations also attempted to ensure a reasonable distribution of testers by sex and age.

Protected and control testers were matched on age, gender, and ethnicity; for wheelchair tests, they were also matched on race. All testers were assigned income and assets to make both testers unambiguously well qualified for the representative sample of advertised units and to make the protected tester slightly better qualified.[20] Test partners also were assigned comparable family circumstances, job characteristics, and housing preferences. Testers contacted rental agents and systematically recorded the information and assistance they received about the advertised unit and other units, including location, rent price, application process, and other terms and conditions. Testers who used wheelchairs also visited the rental agents. Testers were not told who their test partner was; partners did not compare their experiences with one another.

Design and Protocols for Testing With People Who Are Deaf

Overview of Testing Purpose and Design

For the study component about people who are deaf, the goal was to produce a national estimate of rental discrimination against this group. For purposes of this study, the study population was defined as people who use telecommunication relay services (TRSs) to

[19] Testers did not explicitly convey their age during the course of a test. Most deaf and hard of hearing testers did not communicate directly with housing providers, but the communication assistant did provide the tester's name. Also, testers using Internet Protocol Captioned Telephone Service did communicate directly with housing providers, where both the tester's accent and name could be perceived as nonminority.

[20] Assigning income and assets to make the protected tester slightly better qualified is in keeping with the previous housing discrimination studies. The slight difference prevents matched testers from presenting the identical information in the event a housing provider asks about income.

communicate with hearing people. This decision focused the study on people for whom amplification devices alone are insufficient to support talking by telephone.

Tests were conducted remotely—testers contacted housing agents by telephone or over the Internet; they did not proceed to view available housing. All test assignments required the protected tester to use one of three types of TRSs—Video Relay Service (VRS), Internet Protocol Captioned Telephone Service (IP CTS), or Internet Protocol Relay (IP Relay) Service. These three services comprised about 94 percent of TRS usage volume at the time the study began. Data indicate that VRS was the most used service overall and by people who are Deaf. [21] IP CTS was the second most commonly used TRS overall and the service most used by people who are hard of hearing. IP Relay was the third most commonly used TRS overall (RLSA, 2012). These three types of TRSs largely have supplanted the use of TTY relay, which was the technology testers used for the 2005 pilot study.

The TRS technologies differ in how people who are deaf communicate their messages to call recipients and in what equipment is needed to place calls.

To use VRS, a caller who is deaf and communicates in sign language places a call through a service (for example, video phone, computer web camera, or dedicated VRS camera) to a communication assistant. The caller signs the message to be conveyed to the call recipient. The communication assistant telephones and speaks that message to the recipient. As the recipient speaks the response directly to the communication assistant, the assistant signs the response to the caller through VRS. See exhibit 1. The use of sign language and speech enables the caller and the call recipient to communicate at or near the pace of spoken language.

Exhibit 1. Depiction of Video Relay Service

1. PT signs message to HP through CA: *And how much is rent?*

2. CA speaks PT's message to HP: *And how much is rent?*

3. HP speaks message to PT through CA: *The one bedroom is $750.*

4. CA signs HP's message to PT: *The one bedroom is $750.*

CA = communication assistant. HP = housing provider.
PT = protected tester.

[21] Since the research design was finalized, the relative usage volumes for the three TRSs have changed. IP CTS became the most used service, followed by VRS and IP Relay (RLSA, 2014).

With IP CTS, the caller and the call recipient have partial direct contact. A caller who is deaf calls the recipient through a captioned telephone service or website and speaks directly to the call recipient. As the recipient speaks a response, a communication assistant repeats the response to the caller and voice recognition technology creates the message in text through the IP CTS (see exhibit 2). The delay associated with typing the call recipient's response can last from 7 to 10 seconds.

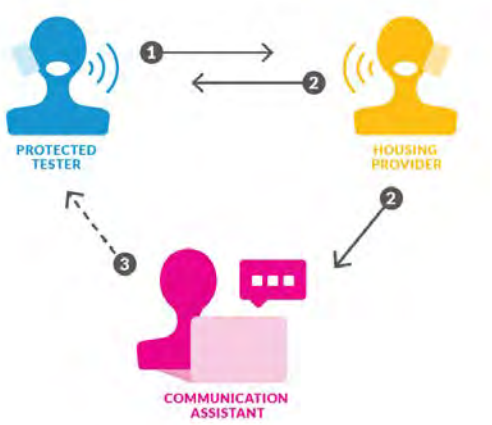
Exhibit 2. Depiction of Internet Protocol Captioned Telephone Service

1. PT speaks message to HP: *And how much is rent?*

2. HP speaks message to PT and CA: *The one bedroom is $750.*

3. CA repeats HP's message to PT and voice recognition technology transcribes the message into text for the PT: *The one bedroom is $750.*

CA = communication assistant. HP = housing provider. PT = protected tester.



IP Relay is similar to VRS, but instead of signing the message, the caller types it. A caller who is deaf accesses the service (IP Relay website, IP Relay text application, and so on) and types the message to be conveyed to the recipient. The communication assistant telephones the recipient and speaks that message. After the recipient speaks a response directly to the communication assistant, the assistant types the response to the caller through the IP Relay. See exhibit 3 for an illustration of the process. With IP Relay, typed messages can take 2 to 5 seconds to appear.

Exhibit 3. Depiction of Internet Protocol Relay Service

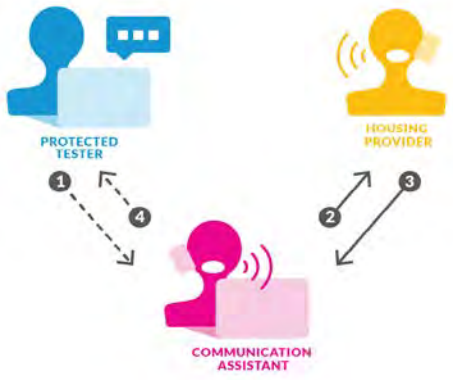
1. PT types message to HP through CA: *And how much is rent?*

2. CA speaks PT's message to HP: *And how much is rent?*

3. HP speaks message to PT through CA: *The one bedroom is $750.*

4. CA types HP's message to PT: *The one bedroom is $750.*

CA = communication assistant. HP = housing provider. PT = protected tester.



Testing Protocols

Protocols were designed to capture whether each member of a tester pair was able to gather information about available units and was able to schedule an appointment to view available units. Neither tester met in person with a housing provider, however. Testers who were able to schedule an appointment were instructed to cancel it within a specified period of time after the remote test contact.

Protocols were divided into eight steps. The first step required making contact on each sampled advertisement before it could be assigned to testers. This advance contact confirmed details from an advertisement and collected additional information required to determine eligibility[22] and to assign tester characteristics. Second, a local test coordinator created a test assignment from information collected from the sampled advertisement and the advance contact. Third, the coordinator met with each tester in the matched pair separately. During those briefings, testers received and reviewed their assignment, reviewed test protocols, and discussed any questions or concerns with the coordinator. Fourth, testers were assigned to contact the housing provider using the assigned type of TRS. Testers who were deaf conveyed their deaf status to the housing provider at the beginning of the contact to ensure the call recipient understood the call was from a person who was deaf.[23] If the housing provider hung up after the first contact, testers were directed to ask the CA if she or he was able to convey that the call was from a person who is deaf before the call was disconnected. If the CA was not able to state as much, the tester made a second attempt to contact the housing provider. If the CA did convey the tester's deaf status before the hangup, the outcome was recorded and no subsequent attempt to contact the housing provider was made.

Testers were provided a web-based phone number and e-mail account, which they used to make appointments and to receive messages from housing providers. The use of web-based technology helped streamline communication by allowing for testers to use a phone number that was solely for use on the project and the digital voicemail of which could be accessed online by test coordinators or transcribed to text. Because voicemail messages from housing providers appeared as a written record in the testers' assigned e-mail account, and test coordinators received an e-mail alert when such messages were received, coordinators were able to monitor important and timely communication by forwarding messages received by tester accounts to a central e-mail account. Testers could make calls with a landline or their own cell phone; their provided phone number—not the number of the phone used to make the call—appeared on the housing provider's caller ID.

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[22] Advertisements could be ruled ineligible for testing for a number of reasons. Ineligible housing included sublets, housing outside of the study's metropolitan statistical area boundaries, ads that included no contact information, and so on. Ads for public and other subsidized housing also were ruled ineligible. Discrimination based on disability is prohibited in housing and other programs and activities that receive federal financial assistance under Section 504 of the Rehabilitation Act of 1973. See http://www.section508.gov/sites/default/files/documents/Section504.pdf.

[23] For the 2005 pilot study, the relay operator explained the TTY call to the recipient at the beginning of the call but did not otherwise explicitly convey that the caller was deaf. The pilot protocol for the current study was modified to ensure the recipient understood the caller was deaf.

Fifth, testers who were able to make contact with housing providers conducted the tests following standardized protocols designed to gather key information for assessing differential treatment. Testers asked about the advertised unit and any other units that were within their price range, were available when needed, and had at least the minimum number of bedrooms required for the tester's (assigned) household. Under no circumstances were testers to agree to a credit check, which would disclose the fact that their assigned income and other information differed from what they told the provider. They did not request any accommodation or modification. Testers attempted to schedule an appointment to view available housing units.

Sixth, testers completed report forms soon after finishing a test to record information on the application process, whether and which utilities were included in the rent, the exact address of the unit, the number of bedrooms, the rent amount, the amount of security deposit and any other fees, the lease length, the date of availability, and any information about the tester gathered by the housing provider (such as income, employment, and family size). See appendix E for all rental forms.

Seventh, after testers completed all report forms, they attended a debriefing meeting with the test coordinator to clarify report forms, if necessary, and to talk about any issues or concerns with the test. Debriefings were in person until coordinators were confident that a tester had mastered testing protocols and was comfortable with all the test report forms. After that, testers had the option of debriefing over the telephone or through a TRS.

The eighth and final step was documenting any followup contact with a housing provider. Testers completed a form to record information on any e-mail or telephone calls from a housing provider and on any followup contact testers were instructed to initiate, including the contact to cancel an appointment when testers successfully scheduled one.

Tests and Testers

Three experienced organizations conducted the tests involving people who were deaf. In 1,448 of the 1,665 tests conducted, both testers were able to communicate with a housing provider.[24] Tests were divided among the TRS technologies in accordance with relative use among people who are deaf and hard of hearing;[25] 922 tests (55 percent) were conducted using VRS, 500 tests (30 percent) were conducted using IP CTS, and 243 (15 percent) were conducted using IP Relay.[26]

A pool of 85 testers conducted the tests, 40 of whom were deaf. Among the 40 testers who were deaf, English was the primary language of 20, and ASL was the primary language

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[24] All test and tester numbers included in this section are unweighted, which accounts for any differences with data presented in the Incidence of Discrimination section.

[25] As of July 2012, Rolka Loube Saltzer Associates reported the following projected minutes of usage by technology type: VRS, 54 percent; IP CTS, 31 percent; and IP Relay, 15 percent. (See http://www.r-l-s-a.com/TRS/reports/2012-07TRSStatus.pdf.)

[26] During the course of the study, relative TRS usage changed. By August 2014, the relative use of IP CTS had increased to 60 percent, VRS was projected to account for 34 percent, and IP Relay accounted for 6 percent. (See http://www.r-l-s-a.com/TRS/reports/2014-08TRSStatus.pdf.)

of 14. The remaining 6 testers indicated that they used another primary language or that they used both English and ASL. Among the 40 deaf testers, 29 conducted tests using the VRS, 16 conducted tests with IP CTS, and 19 conducted tests with IP Relay. One-half of the testers were able to use two or all three types of services.

Design and Protocols for Testing With People Who Use Wheelchairs

Overview of Testing Purpose and Design

The goal for the wheelchair testing component of the study was threefold. The primary goal was to produce a national estimate of rental discrimination against persons who use a wheelchair. The study also was designed to produce findings related to housing providers' willingness to allow reasonable modifications to the building, unit interior, or both and to estimate the percentage of advertisements that lead to accessible units. Although findings on accessible units appear in the Incidence of Discrimination section, the study is not focused on building compliance with design and construction regulations.

Data for people who use wheelchairs were collected from the initial contacts with housing providers, from the appointment contact, and from the in-person visit. All tests began with an appointment contact to capture treatment of the previsit phase. Requiring testers to make appointment contacts during which they disclosed their use of a wheelchair or scooter helped reduce the likelihood that testers would get to a site and encounter an obstacle that would prevent the test from continuing. Testers who used wheelchairs were to request an appointment even if they were told the property was not accessible and to suggest that it might be possible to make a reasonable modification. When one tester of a pair was unable to secure an appointment, the other tester proceeded with the site visit to collect observational data on building and unit accessibility and, in the case of the tester who used a wheelchair, data on responses to reasonable modification requests.

Protected testers were instructed to request up to three modifications given what they encountered when they arrived at the test site. They were not to ask for all modifications that might be needed to make a property fully accessible.[27] In addition, protected testers were directed to tell housing providers that the modifications would be made at the testers' expense. If questioned further by an agent, testers explained that they would restore a modified unit to its original condition when moving out. The list of approved modification requests was reviewed and amended by a panel of experts, comprising researchers, disability advocates, and HUD staff members, to include modifications that in most instances would be considered reasonable. The list is as follows—

- Lobby area and hallways.
    - Install a lever handle on the door.
    - Install an interior ramp to make elevators and hallways accessible from the lobby.

[27] Evidence suggests that the number of modification requests can affect a housing provider's response; hence, the number of modifications a tester could request was limited to three.

- Available and inspected units.
    - Lower thresholds in doorways over which rolling is difficult.
    - Install a lever handle on the door.
    - Reverse the swing of the entry door.
    - Lower the placement of light switches.
    - Reposition outlets.
    - Lower the placement of the thermostat.
    - Replace thick-pile carpeting with low-pile carpeting, tile, or hardwood flooring.
    - Replace a standard shower with a roll-in shower.
    - Install grab bars around the toilet or in the shower.
    - Remove the cabinet under the bathroom sink.
    - Lower the placement of kitchen cabinets.
    - Replace standard kitchen cabinet shelves with revolving or extending shelves.
    - Remove cabinets under the kitchen sink.

Control testers were trained to notice stairs, thresholds, and other property features that might make a building, lobby area, or available housing units inaccessible to people who use wheelchairs. They documented any such observed features.

Testing Protocols

Protocols for the tests for people who use wheelchairs also were divided into eight steps. The first step required making contact on each sampled advertisement before it could be assigned to testers. This advance contact confirmed details from an advertisement and collected additional information required to determine eligibility and to assign tester characteristics. The person making the advance contact also tried to ascertain whether a person using a wheelchair could enter the building with an advertised rental unit. The initial evaluation of test sites was done remotely using online visual tools and by driving by the property. When necessary, project staff members also asked the housing provider whether the building was accessible to someone with a stroller or who was temporarily on crutches. If project staff members were unsure about the accessibility of the building after contacting the housing provider, they drove by the building or walked around the grounds to check for accessible entrances. After the initial site evaluation was complete, only those advertisements for units in buildings believed to be accessible were used to create test assignments. Second, a local test coordinator created a test assignment on the basis of information collected from the sampled advertisement and the advance contact. Third, the coordinator met with each tester in the matched pair separately. During these briefings, testers received and reviewed their assignment, reviewed test protocols, and discussed any questions or concerns with the coordinator. Briefings included discussing any transportation needs for testers using wheelchairs.

Fourth, testers were assigned to contact the housing provider to make an appointment to view available units. During the appointment contact, protected testers mentioned their use of a wheelchair. Testers were assigned a web-based phone number and e-mail account, which they used to make appointments and to receive messages from housing providers. Similar to the testing for homeseekers who were deaf, testing that used these tools enabled coordinators to monitor important and timely communication. When agents called to cancel or reschedule appointments, for example, test coordinators saw the message and alerted testers to take the appropriate next steps. The appointment protocol directed testers to make contact by telephone unless the advertisement provided only an e-mail address. Appointment contacts were documented to allow for analysis of treatment at this early stage of the test.[28]

Fifth, testers conducting visits followed standardized protocols designed to gather key information for assessing differential treatment. Testers began each test by asking about the advertised unit and other available units that were suitable. Suitable units were defined as those that were within a tester's price range, were available when needed, and had at least the minimum number of bedrooms required for the tester's assigned household. A suitable unit for the tester using a wheelchair also meant that the unit was accessible or could be modified to become accessible.[29] Toward the end of the visit, testers in wheelchairs asked whether one or more reasonable modifications could be made to the building or unit interiors based on their observations at the time.[30] Under no circumstances were testers to agree to a credit check, which would disclose the fact that their assigned income and other information differed from what they told the provider.

Sixth, testers completed reports soon after finishing a test visit to record information on the application process, whether and which utilities were included in the rent, the exact address of the unit, the unit number, the number of bedrooms, the rent amount, the amount of security deposit and any other fees, the lease length, the date of availability, and any information about the tester gathered by the housing provider (such as income, employment, and family size). Testers in wheelchairs also documented the response to their reasonable modification request. See appendix E for all rental forms.

Seventh, after testers completed all report forms, they attended a debriefing meeting with the test coordinator to clarify report forms, if necessary, and talk about any issues or concerns with the test. Debriefings were in person until coordinators were confident that a tester had mastered testing protocols and was comfortable with all the test report forms. After that, testers had the option of debriefing over the telephone.

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[28] For the 2005 study, not all tests began with a call to schedule an appointment. Testers using wheelchairs did not disclose their mobility status before the site visit. The study consequently did not produce estimates of discrimination at the appointment stage as this study does.

[29] Note that *suitable* differs from *accessible*: the tester using a wheelchair requires the unit to be accessible or able to be reasonably modified in addition to meeting the assigned size, cost, and availability needs to be considered suitable; the control tester needs to ensure only that the unit meets the assigned size, cost, and availability needs to be considered suitable.

[30] For the 2005 study, control testers always visited first and noted any modifications that would be necessary to make a building and unit accessible. The test coordinator used that information to assign modification requests to testers using wheelchairs. Testers in wheelchairs also requested a parking accommodation.

The eighth and final step was documenting any followup contact with a housing provider. Testers completed a report form to record information on any e-mail or telephone calls from a housing provider and on any followup contact a tester was instructed to initiate. Testers who did not receive an answer to their request for a modification during the site visit were instructed to contact the housing provider remotely one time.

Tests and Testers

Of the 1,265 wheelchair tests conducted by 28 organizations, 1,209 reached the in-person stage of the test. [31] A pool of 398 testers conducted the tests—189 protected and 209 control testers. More than one-half of testers (55 percent among wheelchair testers and 57 percent among control testers) were White and one-fourth were African-American (25 and 23 percent, respectively). Hispanic testers accounted for 16 percent of wheelchair and control testers, and other racial groups accounted for 4 percent of both protected and control testers. Among testers in a wheelchair, most (52 percent) used a power chair. Manual chairs were used by 44 percent of the testers, whereas only 4 percent used a scooter.

Diversity existed in the disabilities of testers, although more people indicated paraplegia than any other reason for their wheelchair use (51 percent). One-fourth of testers indicated they were immobile (24 percent), and 10 percent reported they had quadriplegia. Other disabilities indicated included short stature (5 percent), amputation (3 percent), and obesity (3 percent). In addition, 28 percent of protected testers reported a manual limitation, 2 percent reported a speech problem, and 7 percent indicated some other type of disability. Testers could indicate more than one disability.

Challenges

The field operations team faced two challenges above and beyond the expected complexities associated with large-scale, paired-testing studies conducted in person.

1. Unexpected extreme weather events resulted in the slowdown or closure of testing sites. Testing slowed or halted temporarily in 18 of the 30 sites because of heavy snow, ice storms, extreme cold, and flooding.[32] A devastating tornado in one place required the field team to end testing and start over in a replacement site.
2. Unexpected rental market conditions resulted in an insufficient number of eligible advertisements and a slowed rate of testing in several sites. The field operations team developed a modified sampling strategy to harvest additional advertisements, including sampling advertisements by hand to identify other potential test sites from local sources.

[31] All test and tester numbers included in this section are unweighted, which accounts for any differences with data presented in the Incidence of Discrimination section.

[32] Although severe weather also affected the completion of the deaf and hard of hearing tests, the nature of the remote testing meant that the relative effect was greater on sites completing in-person tests for the wheelchair study.

Sampling and Analysis Methods

The principal objectives of this study were to produce valid and precise national statistical estimates of rental discrimination against people who are deaf and people who use wheelchairs. To achieve these objectives, national samples of rental housing ads were drawn from metropolitan statistical areas across the United States. This section addresses the sampling methods, measurement approaches, and analysis methods used in this study.

The study design called for conducting 1,200 tests involving people who are deaf[33] and 1,200 tests involving people who use wheelchairs. The portion of the study involving people who are deaf was conducted in MSAs that account for more than four-fifths (82 percent) of the population that is deaf and resides in rental housing. The portion of the study involving people who use wheelchairs similarly was conducted in MSAs that account for nearly three-fourths (73 percent) of the population of people with mobility disabilities who reside in rental housing.[34] As discussed in this section, both sampling and testing modes were tailored to the population being studied.

- Sampling rental ads and conducting remote tests by telecommunication relay services for the study of rental discrimination against people who are deaf.
- Sampling MSAs first and then rental ads within selected sites, followed by conducting in-person testing, for the study of rental discrimination against people who use wheelchairs.

Sampling Approach

The sampling approach was designed to achieve the research objectives of this project by tailoring the sample designs and field methods to each testing population. Details of the proposed approaches for drawing the sample of sites and advertisements appear in this section.

A National Sample Design for Testing Discrimination Against People Who Are Deaf

Coverage. The term *coverage* signifies the proportion of the population that is represented by the list from which a sample is drawn. Coverage in the study for people who are deaf is the proportion of that group residing in rental housing in MSAs that were tested (relative to all MSAs in the United States). Covering 100 percent of the study population is ideal, but practical matters such as cost efficiency and detection require that some MSAs be excluded from testing. The best sampling approach strikes a balance between achieving a high coverage of the population and eliminating the risks and costs associated with full coverage. For instance, including a small MSA for the deaf study would run the risk of detection.[35]

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[33] Because the study population for the tests with people who are deaf is defined as persons who use a telecommunication relay service, the tester pool for conducting the 1,200 tests included persons who are deaf and those who are hard of hearing.

[34] Source: 2010 American Community Survey Public Use Microdata Sample analysis.

[35] For the wheelchair tests, it would risk both detection and high cost because of the lack of accessible available rental units over the course of the field period.

Moreover, confining the deaf testing to the largest five MSAs in the country, although efficient and relatively low risk for disclosure, would create a risk of noncoverage bias because most deaf renters by far (about 80 percent) reside in areas other than the five largest sites. Carefully selecting the pool of MSA sites requires finding a balance between high population coverage and acceptably low risk and finding a good level of cost efficiency.

Because the study's component involving people who are deaf did not include in-person visits to landlords, it employed a highly efficient *sample* of U.S. rental ads for generating tests. The study randomly sampled from the collection of all rental ads in the 168 MSAs that accounted for 82 percent of the deaf rental population and 79 percent of the total deaf population.[36]

Metropolitan Statistical Area sites. To achieve a high level of geographical stratification, tests were assigned proportionately to the 168 MSAs in the sampling frame. To facilitate the allocation of tests among the three testing organizations completing the work, the study assembled the 168 MSAs into 30 geographic groups. The results are shown in exhibit 4. First, each MSA was assigned an initial allocation of tests on the basis of the proportional share of the deaf population.[37] Each MSA with 20 or more allocated tests was declared its own separate group, or *superstratum*, for the purpose of fielding the study. The second column of exhibit 4 shows 14 distinct MSAs with 20 or more tests (shown as the first 14 rows). Next, the remaining (168−14 = 154) sites were assembled into 16 geographic groups—that is, superstrata (rows)—containing 9 to 12 MSA sites each and with total test allocations ranging from 42 to 55 tests. Organizing the work this way allowed for a more efficient allocation of sites to testing organizations to balance the workload by region, time zone, and total number of tests. The full listing of all MSA sites can be found in appendix D.

[36] The ACS questionnaire asks respondents if they are deaf or have serious difficulty hearing.

[37] Similar to sampling for the study of discrimination against people using wheelchairs, MSA site allocation for the component for people who are deaf was based on the total population of people who are deaf rather than the subset of the renter population composed of people who are deaf.

Exhibit 4. Single and Grouped Metropolitan Statistical Areas for Testing People Who Are Deaf—Allocated and Completed Tests

Stratum Number	Stratum Name[a]	Number of MSAs	Initially Allocated Tests	Completed Tests
1	New York City-Northeastern NJ	1	78	75
2	Los Angeles-Long Beach, CA	1	58	78
3	Chicago, IL	1	41	55
4	Philadelphia, PA-NJ	1	29	30
5	Dallas-Fort Worth, TX	1	28	32
6	Detroit, MI	1	28	50
7	Houston-Brazoria, TX	1	25	37
8	San Francisco-Oakland-Vallejo, CA	1	23	26
9	Boston, MA-NH	1	22	40
10	Riverside-San Bernardino, CA	1	22	31
11	Tampa-St. Petersburg-Clearwater, FL	1	20	26
12	Phoenix, AZ	1	20	24
13	Atlanta, GA	1	20	40
14	Washington, DC-MD-VA	1	20	16
15	Central	10	48	52
16	Midwest 1	10	55	58
17	Midwest 2	11	54	53
18	Midwest 3	9	53	58
19	Northeast 1	9	42	64
20	Northeast 2	9	42	48
21	Northeast 3	10	42	45
22	South 1	10	52	67
23	South 2	11	49	48
24	South 3	12	52	60
25	South 4	11	53	55
26	South Central	10	43	58
27	West Central 1	10	48	62
28	West Central 2	9	45	64
29	West Northern	7	44	62
30	West Southern	6	44	44
Total		168	1,200	1,458

MSA = metropolitan statistical area.
[a] The MSA definitions used in this study are based on the 1990 Office of Management and Budget (OMB) definitions to allow for the incorporation of American Community Survey microdata for site selection and sampling design. In some cases, these definitions differ from the current OMB MSA definitions.
Notes: Test targets were increased for a number of sites to remedy a sampling anomaly discovered in the first one-third of the field collection. Increasing the number of tests for selected sites approximately retained the original desired statistical power adopted for this study.

Ad sampling. Ad sampling was used to generate a random sample of available rental housing that geographically mimics the distribution of rental housing for a given area. This study

replicated the ad sampling procedure used in Turner et al. (2013), with appropriate adaptations to reflect the broader geographic sampling base for tests with people who are deaf.

The ad sampling was conducted independently for each of the 30 single MSAs and superstrata (rather than separately for each distinct MSA) shown in exhibit 4. A two-stage process was used. ZIP Codes were sampled in proportion to the rental housing across the collection of ZIP Codes in single MSAs and superstrata. For a given week, a set of ZIP Codes was selected, and in the second stage ads from those ZIP Codes were harvested and sampled from a number of online rental ad sites that included the following.

- Apartments.com.
- Rent.com.
- Move.com.
- ForRent.com.
- Craigslist.org.

Duplicates were removed from sampled ads, and then the ads were sent to local test coordinators to be processed and assigned to testers.

The ad sampling protocols featured the following design elements.

- Electronic harvesting of ads.
- Quality control review and purging of ineligible ads.
- Sampling of eligible ads.
- Electronic delivery of ads to local test coordinators.

Every week, ads were sampled from all sources for each ZIP Code chosen for that week's sample. Ads were stratified by source to give each source priority for selection on a rotating basis. For instance, in the first week of sampling, ads were sampled from Apartments.com first; if additional ads were needed, they came from Rent.com, followed by Move.com, and so forth. In the second week, ads were first sampled from Rent.com; if additional samples were needed, they were taken from Move.com, followed by ForRent.com, and so forth. The rotation continued to allow for the primary selection of ads from a different source each week until all sources were given a turn to be used first in the 5-week rotation. Then the process repeated. This method yielded a good mix of rental ads by ad source for all MSAs throughout the field period.

As data collection progressed, finding eligible ads within some sites became challenging because the number of tests already conducted had exhausted much of the advertised pool of housing. In these cases, conducting a hand sampling operation was effective. In this method, the local test coordinators would first exhaust the electronically harvested and sampled ads and then go online and search for rental housing in the sampled ZIP Code, randomly sampling from the ads they found under the supervision of regional coordinators.

Deviations. About one-third of the way into field testing for people who are deaf, quality control monitoring revealed more geographic clustering of tests than expected. A geographic

holes inquiry[38] revealed that the random ZIP Code stream used to harvest ads had been inadvertently censored early in the field period; a single set of about 3,000 ZIP Codes—100 from each single MSA and superstratum—had been used to harvest ads and generate tests. In turn, this finding led to an oversampling of ads and tests in specific neighborhoods within some MSAs. This problem was readily addressed through the adoption of a two-phase sampling strategy, whereby the tests that had been generated up to the date of the problem identification were retained and subsequently weighted to reflect the rental distribution. A representative sample of the remaining ZIP Code stream (that is, sample of the ZIP Code stream minus any ZIP Codes already used) was used for the remaining field period. Thus, phase 1 denotes the sampling and tests that accumulated up to the point of problem detection. Phase 2 represents the sampling and testing in the remaining ZIP Codes (that is, those that previously had been censored) subsequent to the phase 1 period of field testing. This strategy enabled us to retain all the tests that had been conducted and retain approximately the original statistical power adopted for this study.

To ameliorate any remaining imbalance from the phase 1 oversampling, an incremental 262 phone tests were added to the target. Thus, the target number of tests was raised from 1,200 to 1,462. Assignments of incremental tests were tailored to each stratum situation, as some strata needed no increment because testing did not commence in all sites or strata at the same time. Adjusting for imbalances among strata reproduced the geographic distribution of rental housing across superstrata. This adjustment allowed for the resulting collection of tests to be representative of the U.S. rental market and to retain the originally planned statistical power for detecting discrimination.

Results. The rightmost two columns of exhibit 4 present the number of completed TRS tests compared with the original allocation of tests. An additional 258 tests were completed to address the deviation noted previously. Thus, the total number of tests was 1,458, which is within 0.3 percent of the revised target of 1,462 completed tests. The rightmost column of exhibit 4 presents the final number of completed tests conducted by site. Compared with the initial allocation (middle column), completed tests exceeded the corresponding initial allocation except in Washington, DC-MD-VA, which experienced a slight shortfall because of the inclusion of partial tests in which one tester interacted with a housing provider but the other tester did not.[39]

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[38] For this study, the *geographic holes inquiry* involved examining the distribution of sampled ads and completed tests by ZIP Code and by MSA to ensure that tests were geographically dispersed rather than clustered into a few sites or ZIP Codes.

[39] Given the variety of possible outcomes when making TRS contact for tests, local testing organizations could be granted full credit for a test that ultimately would not be used by the analysis team for some analyses, or *partial test*. For example, a partial test occurred when a landlord told one tester that the housing provider had no units available yet the other tester was provided information about available units. Without information on available units from both testers, such a test would be considered incomplete, although data on unit availability would be used for analysis. Washington, DC-MD-VA's allocated test target accordingly was met when taking into account partial tests but fell slightly short when counting only those tests where housing providers discussed available unit with both testers. For more information on the study's quality control processes, see appendix B.

A National Sample Design for Testing for Discrimination Against People Using Wheelchairs

Coverage. A major barrier to in-person testing for people using wheelchairs is their relative rareness in society. Households that include a person with a mobility disability—defined as having serious difficulty walking or climbing stairs—represent less than 5 percent of the total metropolitan renter population (about 1 in 21 rental homes).[40] Thus, one of the challenges of this type of testing is that landlords are more likely to take notice of a rental homeseeker who uses a wheelchair. A sudden influx of renters in wheelchairs could be noticed, which raises the concern that an MSA might be too small for rental testing.

To address this concern, rental testing of people who use wheelchairs was restricted to larger, more populous MSAs by selecting a total population threshold of 450,000 as a lower bound for including that MSA in the sampling frame. Exhibit 5 presents the thresholds considered. It shows that a threshold of 450,000 people captures the 106 most populous MSAs[41] and covers three-fourths of all people living in MSAs, slightly less than three-fourths of renters who have mobility disabilities and live in MSAs, and slightly more than 70 percent of the total population of people with mobility disabilities who live in MSAs. Moreover, MSAs with populations of 450,000 or more were sufficiently large to reduce the risk of disclosure for this testing to an acceptably low level.

Exhibit 5. Exploring Coverage—Lower Bound Population Thresholds for Inclusion in the Metropolitan Statistical Area Site Sampling Frame for Tests With People Who Use Wheelchairs

Metropolitan Statistical Areas Ranked by Population	Total Population Threshold	People With Mobility Disabilities (%)	Renters With Mobility Disabilities (%)	Total Population (%)
97 most populous	500,000	68.6	71.5	72.8
103 most populous	479,566	69.6	72.5	73.7
106 most populous	**450,000**	**70.3**	**73.3**	**74.5**
112 most populous	420,000	71.4	74.2	75.5
167 most populous	260,000	81.0	83.1	84.3

MSA site sampling. A multistage probability sampling design was used for testing involving people who use wheelchairs. A sample of 30 MSAs was drawn as follows. First, 8 certainty sites were chosen that reflect the MSAs with the greatest populations of people with mobility disabilities. For the remaining MSAs in the sampling frame, sites were stratified by size of the mobility-disabled population using the U.S. Census Bureau's 2009 American Community Survey (ACS) Public Use Microdata Sample (PUMS). The result was a proportionate stratified sample of 22 noncertainty MSA sites with probabilities proportional to the population of people with mobility disabilities.[42] Exhibit 6 lists all 30 MSA sites selected for testing, including the allocation of the site sample by stratum status.

[40] Source: 2010 American Community Survey Public Use Microdata Sample analysis.

[41] One MSA was excluded because Turner et al. (2013) discovered that it has unique rental market issues.

[42] Total ambulatory population counts were used rather than counts of the subset who were renters because (1) of a strong correlation between the two estimates, and (2) the total ambulatory population counts were more stable estimates because they relied on a single rare characteristic rather than compounding ambulatory status with rental status.

Exhibit 6. Metropolitan Statistical Area Sites Sampled for Tests With People Who Use Wheelchairs

Stratum	Stratum Number	MSAs for Wheelchair Testing	Allocated Tests	Completed Tests
Self-representing	1	New York City-Northeastern NJ	75	76
	2	Los Angeles-Long Beach, CA	70	72
	3	Chicago, IL	50	50
	4	Dallas-Fort Worth, TX	37	38
	5	Houston-Brazoria, TX	37	37
	6	Philadelphia, PA-NJ	40	40
	7	Detroit, MI	40	40
	8	San Francisco-Oakland-Vallejo, CA	37	37
Non-self-representing	9	Rochester, NY	37	38
	10	Syracuse, NY	37	37
	11	Washington, DC-MD-VA	37	37
	12	Pittsburgh, PA	37	37
	13	Cleveland, OH	37	37
	14	Kansas City, MO-KS	37	37
	15	Dayton-Springfield, OH	37	37
	16	Akron, OH	37	38
	17	Greensboro--Winston-Salem--High Point, NC	37	37
	18	Atlanta, GA	37	40
	19	Memphis, TN-AR-MS	37	37
	20	Orlando, FL	37	39
	21	West Palm Beach-Boca Raton-Delray Beach, FL	37	38
	22	Melbourne-Titusville-Cocoa-Palm Bay, FL	37	40
	23	Miami-Hialeah, FL	37	37
	24	McAllen-Edinburg-Pharr-Mission, TX	37	37
	25	Denver-Boulder, CO	37	37
	26	Las Vegas, NV	37	39
	27	Boise City, ID	37	36
	28	Sacramento, CA	37	36
	29	Bakersfield, CA	37	31
	30	San Diego, CA	37	37
Total			1,200	1,209

MSA = metropolitan statistical area.

[a] The MSA definitions used in this study are based on the 1990 Office of Management and Budget (OMB) definitions to allow for the incorporation of American Community Survey microdata for site selection and sampling design. In some cases, these definitions differ from the current OMB MSA definitions.

The allocation of in-person tests to certainty sites was approximately proportional to the population of people with mobility disabilities.[43,44] The objective was to secure an approximately self-weighted sample of tests (that is, a dataset requiring little weighting to generate statistically valid estimates).

Ad sampling. The second-stage selection in the sample design involved sampling ads within each of the 30 sites, again using the approach of Turner et al. (2013). First, the ZIP Codes for each site containing an estimate of the number of rental housing units were assembled. A random sample of ZIP Codes was generated to reflect the distribution of rental housing by ZIP Code for that site. Every week, a section of the ZIP Code stream was sampled, and the associated collection of ZIP Codes defined the areas from which ads were sampled from the study's online rental ad sources, as discussed in the previous section for the sampling of ads for tests with people who are deaf. Sampled ads were processed to remove duplicates and then sent to the local test coordinators to process and assign to testers. This procedure generated a sample of tests whose geographic distribution closely aligned with the rental housing distribution in the MSA.

Toward the end of data collection, the electronic sample of ads needed to be supplemented with limited amounts of hand sampling to identify landlords and property management companies that had not already been tested. This hand sampling was especially challenging in Bakersfield, CA, and ultimately resulted in six fewer tests completed than were targeted for that site.[45]

Results. The rightmost two columns of exhibit 6 present the number of completed in-person tests compared with the corresponding original allocation by site. The 1,209 in-person tests conducted exceeded the target of 1,200by 0.8 percent.

Sampling Weights

A method of weighting similar to that used in Turner et al. (2013) was used to combine the results across sites and produce national estimates for each component of the study. Separate weights were created for the paired tests of discrimination against people who are deaf and the paired tests of discrimination against people who use wheelchairs. The weights flow from the sample design (discussed previously), in which each MSA site in which testing was conducted represents either itself or a well-defined group of MSAs. If the population share represented by an MSA or group of MSAs is understated in the sample—that is, the sampled site represents less of the sample than it does of the population—then its tests would be assigned an average weight greater than 1. If the population share of an MSA or group of MSAs is overstated in the sample, then its tests receive an average weight greater than 1. The

[43] The 2009 ACS PUMS data also were used to guide test allocations.

[44] The sole exception was the New York City-Northeastern NJ MSA, which was modestly undersampled with little concomitant effect on the precision of statistical estimates. This undersampling was done to spread the sample more evenly over more distinct sites and to ease the burden and increase the feasibility of testing for the local testing organization in New York City-Northeastern NJ.

[45] A minor adjustment equal to the ratio of the targeted to actual numbers of tests (that is, 37/31 = 1.19) was used to account for this discrepancy.

deaf study required an additional adjustment within individual MSAs or MSA superstrata to correct for a sampling error that occurred in the early phases of the study. Additional detail on weights for each of the study's two components follows.

Weights for tests for people who are deaf. National estimates of discrimination against people who are deaf are produced using weights that adjust for underrepresentation or overrepresentation of each stratum of MSAs in the sample and correct for disproportionate sampling within the stratum.

$$\hat{y} = \sum_h W_h y_h = \sum_h W_h \sum_i p_{hi} y_{hi}, \quad (1)$$

where $\hat{y}$ denotes an overall national estimate of discrimination, h indexes the sampling strata, W_h represents the weight for sampling stratum h, and y_h represents the estimate of discrimination for sampling stratum h (that is, in single MSAs or superstrata). Note that the estimate of discrimination for sampling stratum h may contain the paired tests of one site (for example, certainty site) or those of several MSA sites. Also note that within a single MSA site or superstratum h, the estimate y_h is a weighted estimate of the tests within stratum h with weights p_{hi}. The weights p_{hi} correct for the within-stratum differential sampling caused by the inadvertent oversampling of some ZIP Codes that was detected and then corrected (using a two-phase design strategy) during field testing. More specifically, if within an MSA, the tests in ZIP Code 20037, for example, were oversampled twofold, then a weight p_{hi} equal to 0.5 would be assigned to bring the distribution back into balance. The same adjustment was made within a stratum, when one MSA was oversampled relative to the others in the same stratum.[46]

The stratum weights W_h are calculated to ensure that the weighted share of the sample associated with each stratum equals that stratum's of renter households in all MSAs nationally.

Weights for tests for people who use wheelchairs. National estimates to analyze the discrimination against people who use wheelchairs are produced using weights tailored to each site according to its associated stratum.

$$\hat{y} = \sum_h W_h y_h \ , \quad (2)$$

where $\hat{y}$ denotes an overall national estimate of discrimination, h indexes the sampling strata, W_h represents the weight for sampling stratum h, and y_h represents the estimate of discrimination for sampling stratum h. Note that the estimate of discrimination for sampling stratum h may contain the paired tests of one site (for example, certainty site) or those of several MSA sites.

In practice, the weights are based on a poststratification adjustment. The adjustment for a site is the ratio of the desired share of all tests in that MSA implied by the sampling procedure to

[46] A small amount of weight smoothing was used to reduce weighting effects. The smoothing was tailored to each multisite superstratum to ameliorate situations in which a few tests from one constituent MSA site would heavily influence the superstratum estimates because of greater relative weights (for example, greater than 2.0) that resulted from the phase 1 sampling.

the share of tests actually observed in the sample.[47] Because the paired tests are approximately self-weighting *within an MSA* (by design), the only weight adjustment that should be necessary is that of poststratification.

Analysis using weights. As determined in previous housing discrimination studies, one set of weights will not suffice for all analyses, because different outcomes—for example, ability to secure an appointment versus whether told about a unit—are calculated based on different groups of tests. For instance, one or both testers could have secured an appointment in 1,200 tests but proceeded to the point at which the landlord provided information about an available unit in only 1,000 tests. An analytic weight that provides national estimates for a particular outcome must be designed so that each stratum contributes its proper share to the overall estimate based on the distribution of renter households across strata; that is, each specific outcome variable used in the analysis has its own tailored weight.

For tests of discrimination against people who are deaf, analysts calculated test-level analytic weights using within-stratum weights that were based on the full sample and then applied the between-stratum poststratification adjustment separately for each outcome analysis. That is, within a stratum, the within-stratum weight corrects for any oversampling or undersampling that occurred in selecting the sample. This weight is fixed across analyses[48] then combined across strata. For each set of tests being analyzed (for example, tests in which both testers were told about an available unit), each stratum receives its proper population share of renter households nationwide.

For the study of discrimination against people who use wheelchairs, analysts calculated test-level analytic weights separately for each outcome variable.

Measures of Discrimination and Data Analysis

One of the strengths of paired testing is that it provides a detailed picture of the forms discrimination takes—not merely a single "yes or no" answer. This picture is important because forms of discrimination have changed over time and patterns of discrimination differ across protected classes. For example, in testing for discrimination by race and ethnicity, outright refusal to make units available to African-Americans was common in 1977 but rare by 2000. In 2000, Hispanic homebuyers were particularly likely to experience inferior assistance and advice about financing. Understanding such specifics is essential to having effective fair housing enforcement, public education, and housing provider training. In addition, understandable summary measures are required that capture the overall incidence of differential treatment and reveal trends over time. Therefore, this study reports both headline measures of discrimination and more detailed indicators of the various forms that discrimination might take.

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[47] For example, the sampling of noncertainty sites implied that the 3.07 percent of tests should be conducted in each selected noncertainty site. If a given site had 3.50 percent of all paired tests, each test in that site would receive a weight of (3.07/3.50). As a result, that site would account for 3.07 percent of the weighted distribution of all tests.

[48] One exception exists. For the analysis of whether the testers were able to contact the housing provider, the full sample includes all tests. For other analyses, the full sample includes only tests in which both testers communicated with the housing provider.

The remainder of this section first addresses the issues of using gross and net measures of discrimination and explains this study's approach. It then describes the strategy for summarizing the findings across many treatment indicators into a set of headline measures of discrimination against people who are deaf and people who use wheelchairs. The headline measures for people who are deaf are limited to information that can be gathered over the TRS; the measures for people who use wheelchairs include findings related to appointment contacts and inspections and to requests for modifications. The section concludes with a discussion of the approach to data analysis. The data analysis approaches for the two study components are quite similar. Differences in approach, which reflect the differences in sampling and the central and local fielding of the studies, are discussed as needed.

Gross Versus Net Measures of Discrimination

As in previous housing discrimination studies, both gross and net measures of differential treatment for each element of treatment being analyzed are reported. Gross measures represent the share of all tests in which the control homeseeker is favored over the homeseeker who is deaf or the homeseeker who uses a wheelchair. Some tests likely will yield the opposite result (for at least some indicators), with the tester who is deaf or the tester who uses a wheelchair favored over the control tester. Therefore, the results include the incidence of favored treatment for the control testers and the testers who have disabilities.

Although gross measures of differential treatment are easily understandable, they generally overstate the frequency of systematic discrimination because nondiscriminatory random events are responsible for some portion of observed treatment.[49] Such random occurrences can result in protected-class testers experiencing less (or more) favorable treatment than control testers. Looking at only one outcome, namely the frequency of unfavorable treatment, does not show the full story, which can be corrected by examining net measures.

This study reports *net measures* of discrimination, defined as the proportion of tests that favor the control group minus the proportion of tests that favor people with disabilities for a given treatment indicator, with corresponding measures of statistical significance. For a given measure, the net measure provides a direct estimate of the degree of disadvantage in the rental markets for people who are deaf or people who use wheelchairs as compared with similar people who are not deaf or people who do not use wheelchairs. In general, the net measure will understate the rate of systematic discrimination, unless the discrimination in all tests in which the tester who has disabilities is favored is the result of solely random factors. For treatment indicators that can be measured in amounts (for example, rent), the results include the average amounts for the control testers and those with disabilities and the net difference in the average amounts as a measure of the severity of discrimination. Because the difference is measured over a common set of tests, it provides a meaningful measure of the average degree of differential treatment of people who are deaf or people in wheelchairs relative to their matched tester.

[49] For example, an agent who does not feel well might provide less information when talking about units. If the agent feels better when speaking to the second tester who visits subsequently, this difference would show up as unfavorable treatment for the first tester.

Headline Measures of Discrimination

For each type of test, a sequence of key measures provides a rounded picture of both the incidence and the severity of differential treatment. These measures represent treatment milestones in the sequence of events that comprises a paired test. These milestones differ for the test of discrimination against people who are deaf and test of discrimination against people who use wheelchairs, as shown in exhibit 7.

These summary measures highlight both the frequency with which housing agents deny homeseekers with disabilities access to available housing units and the severity of differential treatment experienced by those homeseekers who gain access.[50] The net measures for the number of units available in the tests for people who are deaf and for rents are expected to provide solid and continuous measures of the severity of differential treatment. An agent who favors one tester on cost and multiple customer service items is giving that tester an advantage in the rental process.[51]

In general, these sequences of measures provide an easily understandable description of differential treatment in today's housing markets that no single measure can communicate. They follow the natural sequence of the interaction between the homeseeker and the housing provider, which is appealing for ease in conveying the findings and allows for reliance on data for an inspection. The cost and encouragement elements are measured only for those cases in which an actual unit is available.[52] The sequence for the study of homeseekers who are deaf is conducted by TRS and telephone, and thus it ends naturally with a request for an appointment. The sequence for the study of homeseekers who use wheelchairs begins with a request for an appointment and ends naturally with a request for modifications.

[50] Turner et al. (2013) and studies of employment discrimination implemented a similar, sequential approach to summarize results.

[51] The headline and other measures used in this study differ from those in Turner et al. (2005) in several ways. First, this study does not report hierarchical or consistency measures that combine differential treatment across outcomes. Instead, it reports headline measures that describe the flow of the test. In addition, this study adds measures that combine the rate at which testers are able to reach agents with a measure of unit availability. Second, for continuous measures (for example, number of units, rent, and fees), this study reports the averages for the control and protected testers and the share of tests in which each class of tester was favored by more than 5 percent; the 2005 study reports the share favored for these outcomes. In addition, it summarizes costs by reporting a measure of net total housing costs that was not used in the previous study. Finally, the wheelchair study does not report the number of units learned about or seen because of the likelihood that fewer units would be suitable for the tester in the wheelchair.

[52] This same sequential approach is applied to the detailed (gross and net) measures for the individual elements of each test. That is, availability measures are reported only for tests in which both testers of a pair were able to meet with an agent; inspections, cost, and encouragement outcomes are presented for the subsample of tests in which both testers were told that at least one unit was available.

Exhibit 7. Measures of Discrimination

People Who Are Deaf	People Who Use Wheelchairs
	For each sampled advertisement, whether the property is accessible by people who use wheelchairs and the *share of rental units that are in accessible properties*.[a]
For each test, whether both testers are able to communicate with an agent. Summary measure 1 reports *differential ability to communicate with an agent*.	For each test, whether both testers of a pair are able to obtain an appointment. Summary measure 1 reports *differential denial of in-person meeting*.
For each test, whether both testers of a pair are told that any units are available. Summary measure 2 reports *differential denial of available units*.	For tests in which both testers obtain appointments and do not observe a unit suitable for the tester who uses a wheelchair, whether both are told that any suitable units are available. Suitable refers to units that meet the cost, size, and availability date needed by both testers and the accessibility needs of the tester who uses a wheelchair. Summary measure 2 reports *differential denial of suitable available units*.[b]
For each test, the average number of units recommended. Summary measure 3 reports *differential number of units recommended*.	For those tests in which suitable units are available for both testers and are accessible for viewing, whether both are shown a suitable unit. Summary measure 3 reports the *differential denial of seeing a suitable unit*.
For those tests in which units are available for both testers, the average rent for the recommended units for each tester. Summary measure 4 reports the *differential rent price*.	For those tests in which suitable units are available for both testers, the average rent for the recommended units for each tester. Summary measure 4 reports the *differential rent price*.
For those tests in which units are available to both testers, whether both testers are able to make an appointment to meet with an agent. Summary measure 5 reports *differential denial of in-person meeting*.	Also for tests in which suitable units are available for the tester using a wheelchair, the incidence of refusal to allow a reasonable modification. Summary measure 5 reports *refusal to allow reasonable modifications*.

[a] An important element of studying discrimination against people who use wheelchairs is the need to avoid counting as differential treatment situations in which no accessible unit is available. This study addresses this situation in part by having the advance contact determine, to the extent possible, whether the building is accessible. Paired testing is attempted only when the initial inquiry concludes that the building is accessible. In addition, comparison of suitable available units is undertaken only in the event of an observation of a unit suitable for a tester who uses a wheelchair. Comparison of whether units could be inspected is undertaken only in the event of an observation of a unit that the tester who uses a wheelchair could inspect. The latter is determined in part using information provided in the test narratives.

[b] Because not all available units are accessible to a person who uses a wheelchair, a comparison of the number of units recommended to both testers of a matched pair would likely overstate differences in treatment. Instead, the measure of differential denial of suitable available units compares whether any units are available that meet the needs of each tester in a matched pair.

Note: This table reflects that in the study of people who are deaf or hard of hearing, both testers make the same request about cost, size, and availability date of the unit whereas, in the study of people who use wheelchairs, testers make requests suitable to their needs; that is, any unit meeting the cost, size, and availability date requirements is suitable to the control tester, whereas a unit must also be wheelchair accessible (or easily modified to be so) to be suitable to the tester who uses a wheelchair.

Note that the tests involving people who use wheelchairs do not analyze the difference in the number of units available or shown. The first option would be to measure the number of suitable units available or shown to each tester of a matched pair—that is, the accessible and modifiable units available or shown to the tester who uses a wheelchair and all units for the control tester. With this approach, more units shown to the control tester may simply reflect the number of available inaccessible units in the building—an element that was not intended as part of the measure of discrimination. The second option would be to compare the number of accessible units shown to each tester of a pair—that is, excluding the inaccessible units available or shown to the control tester. Again, the interpretation is not clear. The tester who uses a wheelchair may see more accessible units because the agent responded to the control tester's broad request by showing the control tester mostly inaccessible units. Instead, the study analyzes whether a suitable unit is available or shown using the sample of tests for which at least one accessible unit is available or open for inspection by at least one of the testers.

Analysis Approach

This study's approach to the analysis of paired-testing data is designed to maximize insight into discrimination. It provides a more complete portrait of both the magnitude of and the nuances associated with housing discrimination. The approach features the following.

- Tabular analyses showing overall favorable treatment for control testers and testers who have disabilities and showing the net estimates of adverse treatment (which is their difference).
- Significance levels associated with a two-sided test of hypothesis of "no adverse net treatment."
- Multivariate analyses of whether or how environmental and personal factors might influence aspects of discrimination.
- Analyses of qualitative data to inform quantitative findings.

The tabular analyses present estimates of gross and net adverse treatment from a paired-testing paradigm, thus drawing on the formulation illustrated in exhibit 8 for testing with people who use wheelchairs. The formulation directly applies for outcomes that can be categorized as "yes" or "no" for each tester (for example, told apartment available, told incentives are available). Exhibits 8 and 9 present the following—

- $P11$ = proportion of tests with "yes" for control tester and "yes" for tester who uses a wheelchair.
- $P10$ = proportion of tests with "yes" for control tester and "no" for tester who uses a wheelchair.
- $P01$ = proportion of tests with "no" for control tester and "yes" for tester who uses a wheelchair.
- $P00$ = proportion of tests with "no" for control tester and "no" for tester who uses a wheelchair.
- $P1+$ = proportion of tests with "yes" for control tester.

- $P0+$ = proportion of tests with "no" for control tester.
- $P+1$ = proportion of tests with "yes" for tester who uses a wheelchair.
- $P+0$ = proportion of tests with "no" for tester who uses a wheelchair.

Exhibit 8. Formulation of Gross and Net Adverse Treatment in a Paired Testing Design for Testers Who Use Wheelchairs

	Control Tester		
Tester Who Uses a Wheelchair	Favorable	Unfavorable	Total
Favorable	$P11$	$P10$	$P1+$
Unfavorable	$P01$	$P00$	$P0+$
Total	$P+1$	$P+0$	**1.0**
	Gross unfavorable treatment = $P10$		
	Net unfavorable treatment = $P10 - P01$		

These data are presented in tabular form in exhibit 9. Each row reports the share of tests in which both testers receive favorable treatment, the shares in which only the control tester or only the protected tester receives favorable treatment, the net difference in favored treatment, and the standard error of the net difference. As before, separate tables are devoted to the treatment of testers who are deaf and testers who use wheelchairs.

Exhibit 9. Illustration of Tabular Analyses of Adverse Treatment in Rental Housing Seeking Among Testers Who Use Wheelchairs

	A	**B**	**C**	**D = B − C**	
Outcome (partial list)	**Both Testers**	**Control**	**Tester Who Uses a Wheelchair**	**Net Difference**	**Standard Error**
Tester(s) told units available	$P11$	$P10$	$P01$	$P10 - P01$	SE_{net}
Tester(s) shown units	$P11$	$P10$	$P01$	$P10 - P01$	SE_{net}
Tester(s) offered an incentive	$P11$	$P10$	$P01$	$P10 - P01$	SE_{net}

Note: Net difference entries are flagged with asterisks in exhibits 15 and 18 through 22, the actual data tables, indicating instances of two-sided statistical significance tests at the 0.01, 0.05, and 0.10 levels.

Two approaches are used to describe preference on continuous outcomes, such as the number of housing units recommended or the rent amount. First, the proportions of tests for which the control tester is preferred and for which the tester who is deaf or who uses a wheelchair is preferred, the net difference in the proportions, and the standard error of the net difference are reported. For most of the outcomes defined in dollars (for example, rent and incentives), the average of the measure (for example, average rent) is first calculated across available units. Testers were considered preferred if they have a lower cost by at least 5 percent and compare the proportion of time the control testers and testers of a protected class are preferred. The difference in these proportions provides a net measure of the incidence of differential treatment in the measure of cost.

Second, the averages over all tests of the test-level measure (for example, average rent across units available) were calculated for control testers, testers who use wheelchairs, and testers who are deaf; the net difference in the averages; and the standard error of the net difference. This latter approach provides a summary of the severity of the different treatment observed. Examples of each approach are shown for the outcome "number of units available" in exhibit 10. Note that the column headed "Both Testers" is blank because the measure is defined on the basis of a comparison.

Exhibit 10: Illustration of Tabular Analyses of Adverse Treatment for Number of Recommended Rental Housing Units Among Testers Who Are Deaf

	A	B	C	D = B − C	
Outcome	**Both Testers**	**Control**	**Tester Who Is Deaf**	**Net Difference**	**Standard Error**
Tester told about more available units		$PN_c > N_d$	$PN_c < N_d$	$PN_c > N_d - PN_c > N_d$	SE_{net}
Number of units available		Avg(N_c)	Avg(N_d)	Avg(N_c)−Avg(N_d)	SE_{net}

N_c = number of units shown to control tester on a test. N_d = number of units shown to tester who is deaf on the same test.

$PN_c > N_d$ = proportion of tests with control tester shown more units.

$PN_c < N_d$ = proportion of tests with tester who is deaf shown more units.

Avg(N_c)= average number of units recommended to control testers.

Avg(N_d)= average number of units recommended to testers who are deaf.

Note: *Net difference* entries are flagged with asterisks in exhibits 11 through 14 and 24, the actual data tables, indicating instances of two-sided statistical significance tests at the 0.01, 0.05, and 0.10 levels.

Tables are provided separately at the national level for each component of testing. Supplemental data tables are provided in appendix F.

The studies of discrimination against people who are deaf and people who use wheelchairs differ in two ways that affect the calculation of statistical significance. First, the sample for the study of people who are deaf is essentially a random sample spread across the 168 MSAs in proportion to their share of the deaf population; the sample for the study of people who use wheelchairs is a cluster sample limited to 30 sites. Second, the tests for the study of discrimination against people who are deaf were conducted by three organizations with a limited number of testers who were deaf and were hearing. By contrast, the tests of people who use wheelchairs were conducted by 28 organizations, with each organization hiring multiple testers who use wheelchairs and a comparable number of control testers.

For the national estimates of discrimination obtained in each study, the measures of precision are adjusted to account for these elements of the two studies. For the study of discrimination against people who are deaf, significance levels are adjusted to account for the reduction of statistical precision associated with having a limited number of testers. That is, the results are more similar when conducted by a given tester or tester pair. As a result, the amount of independent information is limited, necessitating the use of robust standard errors clustered on the combination of individual testers used in each test. Rather than assume that the observations are independent, this approach incorporates into the standard error calculation estimates of the correlation of tests for each combination of testers. This approach avoids

both the incorrect assumption that all tests are independent and the complications of adjusting for clustering on two dimensions (each of the two testers used on each test). In addition, the estimates are weighted to account for differential selection probabilities from oversampling ads in some areas and poststratification to align completed tests to geographic and MSA-specific strata.

For the study of discrimination against people who use wheelchairs, adjusting significance levels to account for the complex sample design (that is, use of clustered, two-stage sampling) is also critical. Significance levels are adjusted to account for the reduction of statistical precision associated with having a limited number of sites. In addition, the estimates are weighted so that the sample reflects the national distribution of the population with a mobility disability.

Within each study, the net weighted average difference in each outcome between the control and protected testers was calculated. Robust-clustered standard errors and *t*-tests were then used to conduct a two-sided test of net adverse treatment that accounts for clustering because of either common tester pairs or sites. The degrees of freedom are based on the number of clusters included in the analysis, following the suggestion of Angrist and Pischke (2008).

Multivariate analyses. The methods described provide estimates of adverse treatment nationwide. One might think, however, that the incidence of adverse treatment varies across circumstances or places. For example, discrimination against people who are deaf may be greater for those using a more inconvenient communication technology. Discrimination against persons who use wheelchairs may be greater for those with more severe disabilities. The degree of discrimination might also vary with testers' assigned demographic or economic characteristics. For example, agents might discriminate more against people using a wheelchair if they are unmarried. Discrimination may also vary with the socioeconomic composition of a neighborhood. For example, discrimination against persons using wheelchairs might be greater in areas with older rental housing or with higher average incomes.

Regression models help explore whether and how adverse treatment against people who are deaf and people who use wheelchairs varies with tester characteristics, rental agency characteristics, neighborhood characteristics, and conditions in the local housing market. These models provide estimates of how the net measure of discrimination varies with these factors. Models were estimated for three outcomes from each study component that show significant differences in the nationwide estimates. If notable variation in discrimination exists, it will appear in these measures.

As discussed in the next section, the multivariate models show few significant differences. Therefore, this section describes the models, the following section provides a brief overview of the findings, and appendix G reports selected model coefficients. The basic approach follows that used in Turner et al. (2013); ordinary least squares (OLS) regression is used to estimate relationships between the net differences in treatment for the outcome of interest and factors such as the characteristics of tests, testers, agencies, neighborhoods, and housing markets.

The models for each outcome variable are based on all tests in the national sample for that outcome and for which all independent variables are complete. The dependent variable for

each model is the difference in the treatment of the two testers, categorized as 1 if the control tester is favored, 0 if both testers are treated equally, and -1 if the protected tester is favored.[53] This approach appropriately takes into account the paired nature of the data. OLS regression is used to estimate the model because in practice least squares estimation with limited dependent variables yields results quite similar to the average marginal effects that come from nonlinear models (see, for example, Angrist and Pischke, 2008).

The estimated coefficients from these models reflect the expected change in the net measure of discrimination associated with a one-unit change in the predictor. For example, consider the coefficient of "female testers." The coefficient indicates how much more or less the net measure of discrimination is for female homeseekers than for male homeseekers. In other words, a coefficient of 0.05 for female testers in the wheelchair model of whether a suitable unit is available means that the net difference in the probability of seeing a suitable unit shown to control testers and people who use wheelchairs is 5 percentage points more for women than for men. The reported standard errors and asterisks indicate whether a reported difference is statistically significant.

The technical approaches to the models from the two components differ slightly, again to reflect differences in the study designs. For the tests involving people who are deaf, estimates are weighted to account for oversampling; standard errors are clustered to account for the pair of testers used in the specific test. For the tests involving people who use wheelchairs, estimates are weighted to account for each stratum's representation in the national population, and reported standard errors are clustered by site.

Most of the independent variables (predictors) in the models described in this section are indicators, defined as 1 if a test has a given characteristic and 0 if it does not. Exceptions include the measures of age and income, the maximum number of people seen by the two testers in the study of people who use wheelchairs, and the measures of neighborhood characteristics such as tract per capita income and tract percentage White. In the list of measures included in the model, an asterisk indicates those measures defined as 1 only if both testers meet the condition. For these measures, the model also includes separate indicators for the "control tester only" and "for the protected-class tester only."

For models for the study of people who are deaf, the outcomes of interest are the net differences in (1) whether an agent was contacted, (2) whether an apartment was available, and (3) whether an incentive was received.

Full specification. For the model of net differential contact, the sole predictors are the types of TRSs used. For the models of net differences in availability and incentives, a more complete model specification includes characteristics of the test and testers and the census tract. The predictors are as follows—[54]

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[53] Each model takes the form: $NetDifference_i = a + [b1 \times X1] + [b2 \times X2] + \ldots + [bk \times Xk] + e_i$, where *NetDifference* is the difference in the treatment of the two testers and the *X*s are independent variables used to describe the variation in the net difference across tests.

[54] No characteristics of the agent were included because testers did not meet the agents in person.

- Test characteristics.
    - Type of TRS used.
    - Control tester called first.
    - Month of the test.
- Tester characteristics.
    - Assigned marriage—both testers assigned to be married.
    - Female—both testers female.
    - Log of income assigned to control tester.

Other experiments included the age of the testers, whether the testers were employed,* and whether the testers had previously served as testers.*[55]

Characteristics of the census tract, defined according to the location of the units told to the control tester, are as follows—

- Per capita income.
- Percentage of rental housing in tract built since 1990.
- Percentage of White people in tract.[56]

Other experiments included the average price of rentals and the percentage of rentals in the tract.

For models for the study of people who use wheelchairs, the outcomes of interest are the net differences in whether an appointment was made, whether a suitable unit was available, and whether an available suitable unit was inspected.

This study uses four sets of regression models. The four models are based on (1) reasons for needing a wheelchair, (2) type of wheelchair used, (3) a full specification (including test, tester, agency, and tract characteristics), and (4) effects of housing market conditions. Those sets are described in the following section.

Reasons for tester disability. The first set examines how differential treatment varies with the reason for use of the wheelchair or the disability status. Test coordinators provided this information based on information from the applications of testers, who were able to provide more than one reason. Potential reasons include paraplegia, quadriplegia, amputation, obesity, short stature, manual limitations, limited mobility, and speech or language problems. Those models also include a set of controls for the MSAs.

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[55] Asterisks indicate that the model also includes indicators that only the control tester and only the tester who was deaf had the characteristic. The race of the testers was not included in this model because the protocol was to use only testers who would be perceived to be White.

[56] The tract-level data for the tests for people who are deaf come from the advance contact made before the paired test.

Wheelchair type. The next set examines how differential treatment varies with the type of wheelchair. Types of wheelchairs are manual, motorized, or power wheelchairs and medical scooters. Those models also include a set of controls for the MSAs.

Full specification. The independent variables in this model include test characteristics, tester characteristics, agency characteristics, tract characteristics, and an indicator for each MSA in which testing was conducted.[57] The models include the following variables—

- Test characteristics.
    - Control tester called first.
    - Month of the test.
- Tester characteristics.
    - Assigned marriage—both testers assigned to be married.
    - Female—both testers female.
    - Log of income assigned to control tester.

Other experiments included the age of the testers, whether the testers were employed,* and whether the testers had previously served as testers.*

- Agency characteristics.
    - Faced the same agent.
    - Maximum number of people seen by the two testers (proxy for size of the agency).

Other experiments included whether both testers saw agents who were African-American,* Hispanic,* Asian-American,* or female.*

Characteristics of the census tract, defined according to the location of the office where the control tester was sent, are as follows.

- Per capita income ($10,000s).
- Percentage of rental housing in tract built since 1990.
- Percentage of White people in tract.[58]

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[57] The data allowed for us to test a somewhat broader set of measures than were used in the models for the analysis of people who are deaf, owing to more testers and to the fact that the tests were conducted in person. As a result, those measures included the race and ethnicity of the agent and the tester. In practice, however, these measures were not related to the observed differences in treatment, thus leading the final measures included in the model to be similar across tracks of the study.

[58] For the wheelchair study, in 89 percent of the tests in which both testers met an agent, testers met the agent in the same tracts. In the remaining 11 percent of in-person tests, the two testers were told to meet the agent in a different location. The field staff members think that the testers in wheelchairs were sent to a different location if the office of housing was not accessible. The data focus on the location of the control tester, because (1) the share of tests with different locations is too low to gauge the effects of the tracts separately and (2) the difference in locations is likely to indicate tests where the office is not accessible rather than the effect of the tract characteristics.

Other experiments included the average price of rentals and the percentage of rentals in the tract.

MSA-level characteristics examine the indicator for each MSA. These indicators are included to ensure that the relationships do not simply reflect differences across markets.

The model examining the effects of these characteristics also controls for the MSA where the test was conducted.

Effects of housing market conditions. The goal of this analysis is to assess whether discriminatory treatment is more common in areas where the housing market is tighter or looser. The analysis includes the vacancy rate for rentals in a model of differential treatment and controls for a subset of the variables from the full specification. The vacancy rate is defined as follows.

> Vacancy rate for rentals = (units for rent)/(occupied units + units for rent + units for sale), using data from the U.S. Census Bureau's 2008–2012 American Community Survey 5-year data.

The regression model includes the variables from the full specification that are the same for both testers: control tester went first, month of test, assigned marriage, female, log of control assigned income, both faced same agent, maximum number of people seen, tract per capita income, tract percentage White, and tract percentage of housing built since 1990. The indicators for each MSA are not included in this analysis because their inclusion would cause the vacancy rate to drop out of the model.

Qualitative data analyses. Qualitative data were collected from text boxes built into the electronic report forms and from narrative reports. In addition to being used as source material as part of the test quality control process and for illustrative examples of research findings, these data were analyzed to help elucidate quantitative findings. The data helped us determine the accessibility of available housing units for the wheelchair component of the study and whether the person who uses the wheelchair could inspect the units. They also were used to understand the nature of housing provider comments about disabilities when findings were statistically significant. Findings from this analysis are integrated into the report where appropriate.

Tester identity analysis. When a tester called or e-mailed a housing provider to make an appointment and meet with a provider in person, whether the tester's race or ethnicity was accurately identified was unknown. A similar method to that of Turner et al. (2013) was used to collect data on whether the tester could be identified by race or ethnicity. For the testing of people who are deaf, local test coordinators audio-recorded control testers' reading of a short, prepared script. For the testing of the component for people who use wheelchairs, the coordinators audio recorded all testers' readings of the script and took a photograph of each tester. Test coordinators sent the audio recordings, photographs, and names of all participating testers from both testing components to the regional coordinators. Analyses of differential treatment ultimately showed no difference by race or ethnicity, and therefore race difference was not investigated further through use of the identity data.

Incidence of Discrimination

This section presents national estimates of the incidence and forms of discrimination against people who are deaf and people who use wheelchairs when searching for rental housing.

Discrimination Against People Who Are Deaf

Exhibit 11 provides summary measures for treatment of homeseekers who are deaf at each step of the telephone inquiry for rental housing tested in this study.

- Is the homeseeker able to communicate with an agent about housing? If so,
- Is the homeseeker told about available units?
    - How many units is the homeseeker told about?
- If units are available,
    - What rent is quoted?
    - Is the homeseeker able to make an appointment to meet with an agent?

Exhibit 11. Summary Measures of Discrimination Against Renters Who Are Deaf

Treatment Measures	Control	Deaf	Difference	Standard Error of Difference	*N*
Only one tester able to speak to an agent about housing	**8.3%**	**3.2%**	**– 5.1%*****	1.1%	1,665
If both testers able to speak to an agent:					
Only one tester told units available	**5.5%**	**3.1%**	**– 2.3%****	1.0%	1,448
Average number of units available	**1.55**	**1.46**	**– 0.09***	0.05	1,448
If available units recommended:					
Only one tester able to make an appointment to see a unit	2.3%	1.9%	– 0.4%	0.7%	1,267
Average rent	**$1,252**	**$1,244**	**– $8***	$5	1,265
Overall average number of units available	**1.46**	**1.32**	**– 0.14*****	0.04	1,665

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

Housing providers treat testers who are deaf less favorably than comparably qualified control testers on some but not all measures. Housing providers are less likely to communicate about housing with testers who are deaf than with control testers. When testers are able to reach an agent, testers who are deaf are told about fewer available units but quoted lower rents. At the end of the call, both testers are equally able to make an appointment to meet with a housing provider.

The bottom row of exhibit 11 presents a measure of differential treatment for renters that takes into account both providers' willingness to speak to a homeseeker and the availability of units. Overall, housing providers told testers who are deaf about 0.14 fewer housing units per inquiry than they tell control testers. In other words, during seven attempts to find out about available rental housing, a homeseeker who is deaf learns about one fewer available unit than a comparable homeseeker who is hearing. The remainder of this section provides more details about the treatment of testers at each step of the housing inquiry.

Is the Homeseeker Able To Communicate With an Agent About Housing? If So, Is the Homeseeker Told About Available Units?

Renters who are deaf are less likely to reach an agent, as shown in exhibit 12. Testers who were deaf reached an agent in 90.7 percent of tests compared with 95.8 percent of tests among control testers.[59] Both testers reached the agent in 87.5 percent of paired calls, only the tester who was deaf reached the agent in 3.2 percent of calls, and only the control tester reached the agent in 8.3 percent of calls. This 5.1-percentage-point difference is statistically significant. In 45.7 percent[60] of the tests in which control testers reached a housing provider and the testers who were deaf did not, housing providers hung up on the testers who were deaf. During some others of these tests, testers who are deaf documented that they were able to reach someone, but the housing provider claimed to be too busy for the call or that no leasing agent was available to help.

For example… A housing provider was confused by a call from a tester who was deaf. After the communication assistant explained the call, the provider said that she didn't take those kinds of calls, apologized and hung up. [Call made with Video Relay Service]

On another test… A tester informed the housing provider that he was deaf before asking about the advertised apartment. The provider said she was too busy but could e-mail the tester. After the tester provided his e-mail contact, the call ended. [Call made with Internet Protocol Captioned Telephone Service]

Exhibit 12. Information and Availability Indicators for Testers Who Are Deaf and Testers in Control Group

Treatment Measures	Both	Control	Deaf	Difference	Standard Error of Difference	*N*
Tester(s) able to communicate with an agent about housing	87.5%	**8.3%**	**3.2%**	**– 5.1%*** **	1.1%	1,665
If both testers able to speak to an agent:						
Tester(s) told any units available	87.7%	**5.5%**	**3.1%**	**– 2.3%** **	1.0%	1,448
One tester told about more units than partner		**26.0%**	**19.4%**	**– 6.6%** **	2.6%	1,448
Average number of units available		**1.55**	**1.46**	**– 0.09***	0.05	1,448

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

[59] The 2005 pilot study reported much higher rates of people who are deaf not reaching housing providers. That single-MSA study found that in 26 percent of the 101 tests, only the hearing tester reached an agent; the reverse occurred in only 2 percent of tests (Turner et al., 2005). The national estimates produced in this study are not directly comparable with the pilot estimates because the protocols and the coverage are different. That said, the higher rates of reaching providers in the current study are likely to be at least partially the result of improvements to TRSs, which have led to a more seamless communication experience and less door slamming.

[60] This figure represents an unweighted share of these tests because they were too few to weight. The share does not reflect a national estimate of the percentage of times housing providers hang up on homeseekers who are deaf.

Analysis of variation in the difference of the contact rate between hearing and deaf testers shows an 8-percentage-point gap for callers who used the two technologies that rely on typing messages and a 3-percentage-point gap for callers who used VRS with American Sign Language. This variation is discussed in more detail in the subsection, Variations in Patterns of Discrimination.

For example… In one test, the housing provider told the control tester about two floor plans and that multiple units were available for each plan. The housing provider told the deaf tester about the same two floor plans, but that only one unit was available for each plan.

When homeseekers who are deaf and hearing were able to communicate with someone about housing, testers who are deaf were 2.3 percentage points less likely to be told about any available units. Overall, housing providers told homeseekers who are deaf about 0.09 fewer housing units than people who are hearing when both were able to communicate with an agent. (On average, the control tester was told about 1.55 units, whereas the tester who is deaf was told about 1.46 units.) This finding means that during 11 contacts with rental agents, a homeseeker who is deaf learns about one fewer available unit than a comparable homeseeker who is hearing.

Most comments and information provided to testers who are deaf and control testers do not differ significantly, as shown in exhibit 13. Housing providers were 1.1 percentage points more likely to make a comment about people who are deaf and 0.4 percentage points more likely to make a comment about people with disabilities to testers who are deaf than to testers who are hearing. In nearly all tests, however, neither the tester who is deaf nor the control tester received such comments. When housing providers do make comments to testers who are deaf, comments tend to concern communication issues. Most comments testers documented on test report forms concerned agents who did not know how they would communicate with the homeseeker during a visit to the property unless the homeseeker brought along an interpreter. For example, one housing provider asked a tester who was deaf whether she would be bringing an interpreter with her. After scheduling an appointment, the provider went on to ask the tester whether she spoke English. One exception was a comment made by an agent who said that she was fluent in American Sign Language and would be able to communicate well if the homeseeker visited.

For example… After agreeing to schedule an appointment to view available units, a housing provider told the tester to bring a sign language interpreter with him because the provider did not know any sign language. The provider also asked questions about the tester's ability to pay rent, including whether he received a Section 8 rental voucher or other rent subsidy, and requested proof of income for 2 months and a current bank statement.

When housing providers provide information about available units, they are equally likely to inform each tester about required applications and credit checks. Housing providers were 7.7 percentage points less likely to tell testers who are deaf about required background checks, however.

Exhibit 13. Comments and Helpfulness Indicators

Deaf Treatment Measures	Both	Control	Deaf	Difference	Standard Error of Difference	*N*
If able to speak to an agent:						
Agent comment on persons who are deaf	0.0%	**0.2%**	**1.3%**	**1.1%****	0.4%	1,448
Agent comment on persons with disabilities	0.0%	**0.2%**	**0.6%**	**0.4%***	0.2%	1,448
If available units recommended:						
Tester(s) told comment on fair housing	0.0%	0.0%	0.2%	0.2%	0.1%	1,267
Tester(s) told an application must be completed	98.3%	0.7%	0.6%	– 0.2%	0.4%	1,267
Tester(s) told a credit check must be completed	97.6%	0.6%	1.2%	0.6%	0.5%	1,267
Tester(s) told a background check must be done	20.0%	**25.7%**	**18.0%**	**– 7.7%****	3.8%	1,267
Tester(s) told comments on credit standing	0.1%	1.2%	1.5%	0.2%	0.6%	1,267
Tester(s) told comments on rent history	0.0%	1.1%	1.2%	0.1%	0.6%	1,267
Tester(s) able to make appointment to see unit(s)	94.5%	2.3%	1.9%	– 0.4%	0.7%	1,267

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

If Units Are Available, What Rent Is Quoted?

Overall, the average yearly net cost of units that housing providers offered homeseekers who are deaf is $115 less than the cost of units offered to hearing testers, as shown in the bottom row of exhibit 14. The difference is driven by housing providers who tell homeseekers who are deaf and homeseekers who are hearing different amounts for the components of net costs: rents, fees, and incentives. Providers offer homeseekers who are deaf rents that are less by about $8 per month compared with homeseekers who are hearing.

Testers who are deaf and testers who are hearing are equally likely to be told about lease terms and deposit amounts. When housing providers told both testers about a unit, however, they were 4.6 percent more likely to quote higher fees to the hearing tester; over all tests, average fees quoted were $36 higher for the hearing tester. Housing providers were 4.8 percentage points less likely to tell homeseekers who are deaf about move-in incentives; over all tests, the value of the incentives for testers who are deaf

For example… In one test, the housing provider told the control tester that the application fee and one-half of the first month's rent would be waived on the available unit, which would save the renter $543. The deaf tester called the same day and spoke to the same housing provider. The housing provider told the deaf tester about the same unit and the waived application fee, but not about the rent discount.

was $74 less than the value of those offered to homeseekers who are hearing. Finally, a low percentage of testers are given the choice between a security deposit and a surety bond,[61] and housing providers were 1.3 percentage points less likely to give that choice to homeseekers who are deaf. Whether this difference favors the person who is deaf or the person who is hearing is unclear.

Exhibit 14. Financial Indicators for Testers Who Are Deaf and Testers in Control Group

Treatment Measures	Both	Control	Deaf	Difference	Standard Error of Difference	*N*
If available units recommended:						
Average rent		**$1,252**	**$1,244**	**– $8***	$5	1,265
Tester(s) offered month-to-month contract	0.9%	2.8%	2.0%	– 0.8%	0.7%	1,266
Tester(s) offered 2-year lease	1.6%	2.0%	2.4%	0.3%	0.8%	1,266
Tester(s) told fees required	33.3%	13.2%	10.5%	– 2.7%	1.8%	1,266
One tester told higher fees than partner was told		**22.0%**	**17.4%**	**– 4.6%****	2.3%	1,266
Average fees		**$181**	**$145**	**– $36****	$14	1,266
Tester(s) told about incentives	14.2%	**14.2%**	**9.4%**	**– 4.8%****	2.1%	1,266
One tester told of greater incentives than partner was told		**19.5%**	**12.3%**	**– 7.2%*****	2.5%	1,266
Average yearly incentives		**$259**	**$185**	**– $74****	$32	1,266
Tester(s) told security deposit required	93.0%	1.8%	2.2%	0.4%	0.6%	1,266
Tester(s) given choice between security deposit and surety bond	1.4%	**2.3%**	**1.1%**	**– 1.3%***	0.7%	1,266
Average security deposit		$746	$721	– $25	$17	1,166
Average surety bond		$124	$127	$3	$8	35
Average effective deposit		$746	$721	– $25	$17	1,167
Testers told higher yearly net cost		16.2%	14.5%	– 1.7%	1.8%	1,166
Average yearly net cost		**$15,706**	**$15,591**	**−$115***	$59	1,166

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

[61] A surety bond typically is a small fraction of the cost of a security deposit, nonrefundable, and payable to the surety company that issues the bond rather than to the housing provider. Unlike a security deposit, which may extend through the life of the lease, a surety bond offers coverage for a fixed period. In the event of damage to the unit or unpaid rent at the end of occupancy, the tenant may be financially liable to the surety company.

If Units Are Available, Is the Homeseeker Able To Make an Appointment To Meet With an Agent?

When housing providers provide information about available units, they are equally likely to schedule an appointment with homeseekers who are deaf and homeseekers who are hearing, as shown in the last row of exhibit 13.

Discrimination Against People Who Use Wheelchairs

Exhibit 15 provides summary measures for treatment of homeseekers who use a wheelchair at each step of the rental housing inquiry by agents with suitable units available.

- Is the advertised housing accessible for people who use wheelchairs?
- Is the homeseeker able to make an appointment for an in-person meeting with an agent? If so,
- Is the homeseeker told about an available suitable unit?
- If suitable units are available,
- Is the homeseeker shown a unit?
- What rent is quoted?
- If suitable units are available, is the homeseeker who uses a wheelchair able to get a positive response to a request for a reasonable modification?

On average, less than one-half of advertisements for rental housing in metropolitan area housing markets nationwide appear to lead homeseekers who use a wheelchair to an accessible unit.[62] When inquiring about advertised housing that appears to be accessible, renters who use wheelchairs are treated less favorably, on several key indicators, than equally qualified renters who are ambulatory. Housing providers are less likely to make an appointment with homeseekers who use wheelchairs and, if they do, are less likely to tell such homeseekers about a suitable unit. When people who use wheelchairs are told about a suitable, available unit that is thought to be accessible for inspection, they are less likely to be shown the unit. Housing providers quote people who use wheelchairs slightly lower monthly rents than comparable homeseekers who are ambulatory. When people who use wheelchairs ask about modifications that would make housing more accessible for them, housing providers fail to provide a clear response to or deny more than one-fourth of the requests.

The remainder of this section provides more details about the treatment of homeseekers at each step of the housing inquiry.

[62] As previously stated, *accessibility* is defined as the ability of a tester who uses a wheelchair to access a building and access available units. This operational definition is not strictly equivalent to specific laws or regulations.

Exhibit 15. Summary Measures of Discrimination Against Renters Who Use Wheelchairs

Measure of Accessibility of Properties	
Percent accessible	43.8%
Percent not accessible	56.2%

Note: This measure is based on the local testing organizations' judgment of whether a sampled advertisement was for an accessible property as defined for this study.

Results of Paired Tests					
Wheelchair Treatment Measures	Control	Wheelchair	Difference	Standard Error of Difference	*N*
Only one tester able to make an appointment	**3.6%**	**2.0%**	**– 1.6%****	0.7%	1,265
If a suitable unit is available:					
Only one tester told units available	**3.8%**	**1.4%**	**– 2.4%*****	0.8%	1,176
If available units recommended:					
Only one tester able to inspect any units accessible for inspection	**3.9%**	**0.8%**	**– 3.1%*****	1.1%	1,036
Average rent	**$1,456**	**$1,448**	**– $9****	$4	1,100
Response to reasonable modification request (2,669 requests)					
Request accepted		71.2%			
Request not accepted		6.7%			
Final response not given		21.1%			

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

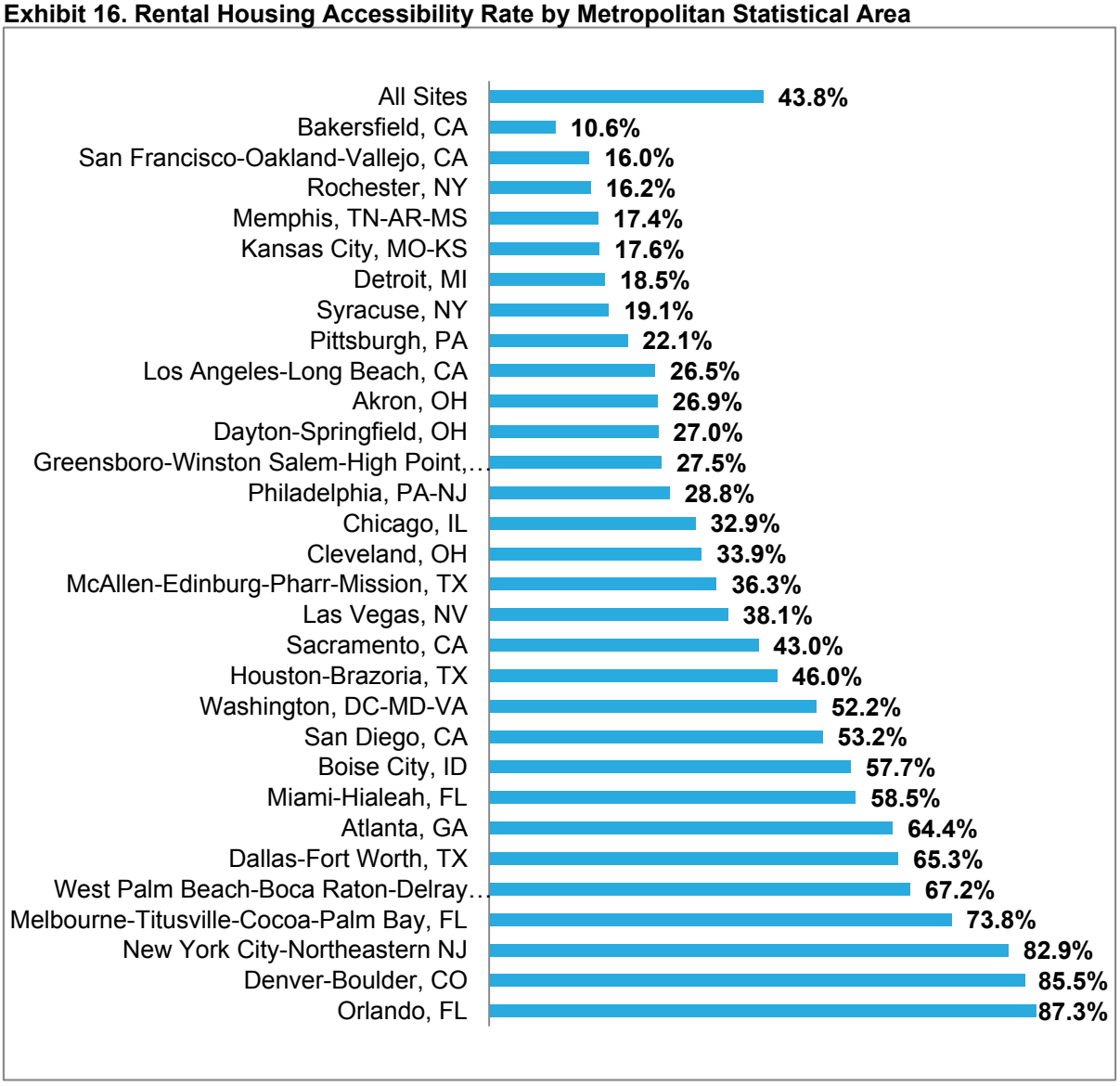
Note: The difference between control and wheelchair tester measures may not equal the measure in difference column because of rounding.

Is the Advertised Housing Accessible for Persons Who Use Wheelchairs?

Overall, only 44 percent of advertised rental units randomly selected for paired testing lead to a unit that was believed to be accessible for people who use wheelchairs. This estimate is a weighted average of the estimates from the 30 metropolitan statistical areas in this study. The underlying data for this estimate are from the samples of advertised housing. Local testing organizations judge whether a unit is accessible. Organizations used a combination of methods to identify accessibility, including online research, review of publicly available photographs and satellite images, pretest contacts with housing providers, and direct observations by staff members and, subsequently, control testers.

Caution is needed in interpreting this measure. First, the study is based on a small share of MSAs in the United States, and the rates of accessibility vary considerably across the MSAs included in the study (see exhibit 16). Furthermore, the measure is based on the judgment of the local testing organizations, whose primary goal was to find units that could be tested rather than, for example, make a formal survey of housing stock.

Exhibit 16. Rental Housing Accessibility Rate by Metropolitan Statistical Area



Note that each MSA is unique and these differences skew some comparisons. For example, the New York City-Northeastern NJ rental market is dominated by brokers. Brokers are present but do not appear to be as prevalent in other MSAs. When testers contact brokers and say they use a wheelchair, brokers often will seek housing specifically that meets those needs, which leads to a high accessibility rate in that MSA. In Bakersfield, CA, the rental market features both a relatively few housing providers and an extremely low vacancy rate. In an already limited market, finding units with the additional criteria of accessibility proved to be difficult.

The investigation of potential patterns of accessibility begins by examining how accessibility rates vary across regions of the country. Exhibit 17 displays each site's accessibility rate by region. Regional averages are not given because the study samples are not representative of regions, but some differences emerge across regions in the accessibility rates for the sampled

MSAs. The Central region rates all tend to be low, ranging from 18 to 33 percent. The rates in the Mid-Atlantic region are less than 30 percent, with the exception of New York City-Northeastern NJ where the use of brokers yielded a high accessibility rate. Low rates might be expected given the generally older housing in those regions. The other two regions include MSAs that range from very low (for example, Memphis, TN-AR-MS; Bakersfield, CA; and San Francisco-Oakland-Vallejo, CA) to very high (for example, Orlando, FL, and Denver-Boulder, CO).

Exhibit 17. Estimated Accessibility Rates by Geographic Region

Mid-Atlantic	%	Central	%
New York City-Northeastern NJ	83	Akron, OH	27
Philadelphia, PA-NJ	29	Chicago, IL	33
Pittsburgh, PA	22	Cleveland, OH	34
Rochester, NY	16	Dayton-Springfield, OH	27
Syracuse, NY	19	Detroit, MI	19
		Kansas City, MO-KS	18
South and Southeast	%	Pacific and Mountain	%
Atlanta, GA	64	Bakersfield, CA	11
Dallas, TX	65	Boise City, ID	58
Greensboro--Winston-Salem--High Point, NC	28	Denver-Boulder, CO	86
Houston-Brazoria, TX	46	Las Vegas, NV	38
McAllen-Edinburg-Pharr-Mission, TX	36	Los Angeles-Long Beach, CA	26
Melbourne-Titusville-Cocoa-Palm Bay, FL	74	Sacramento, CA	43
Memphis, TN-AR-MS	17	San Diego, CA	53
Miami-Hialeah, FL	58	San Francisco-Oakland-Vallejo, CA	16
Orlando, FL	87		
Washington, DC-MD-VA	52		
West Palm Beach-Boca Raton-Delray Beach, FL	67		

Note: The accessibility rates displayed in this table are the share of ads that a test coordinator judged would lead to an accessible unit given a combination of methods to assess accessibility.

The relationships between a site's accessibility rate and a number of variables hypothesized to be related to the accessibility rate are analyzed next. Sites that have a greater proportion of rental units in large multifamily buildings have greater proportions of accessible rental units (see exhibit 18). This greater proportion may be because large multifamily buildings tend to have more floors and are therefore more likely to have elevators. A greater proportion of rentals in small multifamily buildings also might be negatively related to the accessibility rate because these buildings likely have units on upper floors but not elevators. The proportion of rentals in small multifamily buildings is not statistically significant, however.

Exhibit 18. Relationship Between MSA Characteristics and Proportion of Accessible Units

	Coefficient	Standard Error
Percentage of rentals in large multifamily buildings	**1.309*** **	**0.355**
Percentage of rentals in small multifamily buildings	– 0.315	0.444
Percentage of rentals constructed in 1990 or after	**1.023*** **	**0.320**
Percentage of renters age 65 and older	2.810	1.778
Constant	– 0.408	0.278
N	30	
R-squared	0.614	

MSA = metropolitan statistical area.

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

Notes: A large multifamily building is defined as a multifamily building with 10 or more units. A small multifamily building is defined as a multifamily building with fewer than 10 units.

Source: Ruggles et al. (2010)

Sites with a greater proportion of rentals in buildings constructed in 1990 or after have greater proportions of accessible rental units. This relationship is statistically significant. This result might be because of the passage of the 1988 amendment to the Fair Housing Act related to design and construction, which requires buildings built for first occupancy after March 13, 1991, to be accessible.

Finally, the share of older renters might be related to the share of accessible units—either because older people tend to locate in places with more accessible rental units or because more accessible units will have been built in places with a greater proportion of older renters. The data show, however, that the percentage of renters who were age 65 or older does not have a statistically significant relationship to the access rate, despite a large positive coefficient. This nonfinding may be the result of the relatively few sites and very modest variation across sites in the share of elderly (between 4 and 11 percent).

Is the Homeseeker Able To Make an Appointment To Meet With an Agent? If So, Is the Homeseeker Told About an Available Suitable Unit?

People who use wheelchairs are more likely than people who do not use wheelchairs to experience adverse outcomes in their search for housing, as indicated by the data in exhibit 19. Testers who use wheelchairs were 1.6 percentage points less likely than control testers to be able to make an appointment with a rental agent after an initial telephone or e-mail contact. When both testers were able to meet with an agent and a suitable unit was available (as determined by the two testers), wheelchair users were 2.4 percentage points less likely to be told about any available units.

For example… During the call to make an appointment, a housing provider apologized to a wheelchair tester for not having any units to show; the next available unit would not be ready until late May. The wheelchair tester asked to see a model unit instead, but the housing provider said it was rented and could not be shown. The wheelchair tester was unable to make an appointment.

When the control tester called, the housing provider said that one unit was ready to lease and offered to meet with the tester. During the site visit, the housing provider told the control tester about a unit on the first floor that was available immediately and about a second unit available in May. The housing provider showed the model unit to the tester and said the actual unit would be ready to show the next day.

Exhibit 19. Information and Availability Indicators for Wheelchair and Testers in Control Group

Wheelchair Treatment Measures	Both	Control	Wheelchair	Difference	Standard Error of Difference	*N*
Tester(s) able to make an appointment	94.2%	**3.6%**	**2.0%**	**– 1.6%****	0.7%	1,265
If a suitable unit is available:						
Tester told units available	93.8%	**3.8%**	**1.4%**	**– 2.4%*****	0.8%	1,176

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

Note: The difference between control and wheelchair tester measures may not equal the measure in difference column because of rounding.

If Suitable Units Are Available, Is the Homeseeker Shown a Unit?

When housing providers told both testers about available units accessible to the tester in the wheelchair, they were 3.1 percentage points less likely to show any units to the tester using a wheelchair than to the control tester. The source of differential inspection of units is not known. The calculation excludes all tests in which the tester who uses a wheelchair could not currently access the unit. Possible reasons for the observed difference are that some of the remaining units are not actually accessible and that agents prefer not to rent to people who use wheelchairs.

For example… A tester in a wheelchair was told over the phone and during the visit that the available unit might already be rented. The tester then was told about a unit that would be available weeks later but was not shown a unit. The same housing provider did not tell the control tester that the available unit might have been rented and did show the control tester a first floor unit. The interior of that unit was observed to be accessible, but the exterior had a step down to the patio.

In another test, a housing provider showed the tester in a wheelchair apartment floor plans. When the tester asked to view an available apartment, the housing provider said it could not be shown because it was occupied. The housing provider showed an apartment to the control tester that the tester noted was accessible, however.

Testers' narratives provide some insight. In one test, the housing provider showed apartment floor plans to the tester who uses a wheelchair. When the tester asked to view an available apartment, the housing provider said it could not be shown because it was occupied. The housing provider did show an apartment to the control tester, however, and the control tester noted that the apartment was accessible. In some tests, the control tester saw an available unit or unit model that turned out not to be accessible, but whether any accessible units could have been shown to the tester who used a wheelchair is unknown.

Providers show homeseekers who use a wheelchair housing that is in slightly worse condition than the housing they show to homeseekers who are ambulatory (see exhibit 20). Homeseekers using wheelchairs saw 2.7 percentage points more problems per unit than comparable ambulatory homeseekers. The problems documented included peeling paint, broken windows, and exposed wiring. Providers were 2.8 percentage points more likely to

show a unit without any problems to control testers. These results translate to testers who use wheelchairs seeing 0.04 more problems per unit than do control testers—a difference of 1 problem during 25 inspections.

Exhibit 20: Inspections and Unit Problem Indicators for Testers Who Use Wheelchairs and Testers in Control Group

Wheelchair Treatment Measures	Both	Control	Wheelchair	Difference	Standard Error of Difference	*N*
If available units recommended:						
Tester(s) able to inspect any units	94.1%	**3.9%**	**0.8%**	**– 3.1%*** **	1.1%	1,036
If units shown:						
Tester(s) saw at least one unit without any housing quality problems	86.1%	**7.4%**	**4.6%**	**– 2.8%** **	1.3%	994
One tester saw more problems per unit than partner	86.5%	**5.4%**	**8.1%**	**2.7%** **	1.3%	994
Average number of housing quality problems per unit		**0.07**	**0.11**	**0.04** **	0.02	994

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

Note: The difference between control and wheelchair tester measures may not equal the measure in difference column because of rounding.

If Suitable Units Are Available, What Rent Is Quoted?

Overall, the average net cost of units that housing providers offered homeseekers using wheelchairs was $78 less than for those offered to ambulatory testers, as shown in the bottom row of exhibit 21. Agents provide both testers similar information about most financial indicators, including lease terms, fees, and security deposits. The difference in net costs results from housing providers who tell homeseekers using wheelchairs lower amounts for rents and lower amounts of incentives than ambulatory testers. On average, providers told testers using wheelchairs about rents that were $9 less per month than the rents quoted to testers who are ambulatory—a modest but statistically significant difference. Ambulatory testers were offered average incentives $53 higher than testers using wheelchairs; but these greater incentives were not enough to offset the difference in rent.

The lower average rent told to testers using wheelchairs does not appear to result from the paired testers learning about different units. In the 43 percent of tests in which both testers learned about at least one unit in common, a comparison of the rents told to both testers of a pair for the common units shows that the average rent told to the control tester was $3 higher than the average rent told to the tester using a wheelchair ($1,485 versus $1,482).[63]

[63] A unit was considered to have been learned about by both testers if it had the same address, apartment number, and number of bedrooms. Units without an apartment number were considered to be a match if each tester learned about one unit at the address and the number of bedrooms was the same.

Exhibit 21. Financial Indicators for Testers Who Use Wheelchairs and Testers in Control Group

Wheelchair Treatment Measures	Both	Control	Wheel-chair	Difference	Standard Error of Difference	*N*
If available units recommended:						
Average rent		**$1,456**	**$1,448**	**– $9****	$4	1,100
Tester(s) offered month-to-month contract	2.3%	4.2%	5.3%	1.1%	1.1%	1,104
Tester(s) offered 2-year lease	5.8%	3.8%	4.3%	0.5%	1.1%	1,104
Tester(s) told fees required	90.8%	1.8%	2.6%	0.8%	0.6%	1,104
One tester told higher fees than partner was told	61.8%	19.6%	18.6%	– 1.1%	1.5%	1,100
Average fees		$312	$293	– $19	$14	1,100
Tester(s) told about incentives	26.4%	11.5%	8.7%	– 2.8%	1.8%	1,104
One tester told of greater incentives than partner was told	64.4%	**20.4%**	**15.2%**	**– 5.3%****	2.5%	1,100
Average yearly incentives		**$444**	**$391**	**– $53***	$28	1,100
Tester(s) told security deposit required	88.8%	2.9%	2.0%	– 0.9%	0.7%	1,104
Tester(s) given choice between security deposit and surety bond	1.7%	1.5%	1.3%	– 0.2%	0.5%	1,104
Average security deposit		$903	$899	– $4.4	$17	988
Average surety bond		$149	$133	– $15.5	$21	12
Average effective deposit		$905	$897	– $8.1	$17	992
Testers told higher yearly net cost	67.3%	17.5%	15.2%	– 2.3%	1.8%	992
Average yearly net cost		**$18,126**	**$18,048**	**– $78***	$39	992

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

Note: The difference between control and wheelchair tester measures may not equal the measure in difference column because of rounding.

Housing providers were 33.7 percentage points more likely to make comments about housing accessibility, 6.1 percentage points more likely to make comments about people with disabilities, and 4.8 percentage points more likely to make comments about fair housing to a homeseeker who uses a wheelchair than they were to a homeseeker who does not use a wheelchair (see exhibit 22).

An analysis of housing providers' comments documented by testers shows that most comments tended to be neutral, informative, or helpful. Some agents commented that their buildings posed accessibility challenges because they were constructed before the Americans with Disabilities Act (ADA) was signed into law. A housing provider from a newer building said that accessibility should not be a problem for his property because it was only 5 years old. Other comments included a conversation about special parking spaces or questions about whether the tester would be comfortable on the ground floor, which is where many accessible units are located. Agents commented that other renters in the building used a wheelchair, mentioned that a loved one used a wheelchair so they understood accessibility needs, or pointed out a unit with a wheelchair ramp at the entrance.

Exhibit 22. Comments and Helpfulness Indicators for Testers Who Use Wheelchairs and Testers in Control Group

Wheelchair Treatment Measures	Both	Control	Wheelchair	Difference	Standard Error of Difference	*N*
If able to meet with agent:						
Agent commented on housing accessibility	1.9%	**2.3%**	**36.0%**	**33.7%*** **	2.7%	1,208
Agent commented on persons with disabilities	0.2%	**2.1%**	**8.3%**	**6.1%*** **	1.1%	1,208
If available units recommended:						
Tester(s) told comment on fair housing	0.3%	**0.4%**	**5.3%**	**4.8%*** **	0.8%	1,104
Tester(s) told an application must be completed	93.4%	**3.4%**	**2.2%**	**– 1.2%***	0.6%	1,104
Tester(s) told a credit check must be completed	81.6%	7.9%	6.8%	– 1.1%	1.9%	1,104
Tester(s) told a background check must be done	32.9%	16.7%	19.5%	2.7%	2.6%	1,104
Tester(s) told comments on credit standing	0.9%	3.8%	3.6%	– 0.1%	1.1%	1,104
Tester(s) told comments about rent history	0.9%	5.3%	5.2%	– 0.1%	1.6%	1,104

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

Note: The difference between control and wheelchair tester measures may not equal the measure in difference column because of rounding.

Other comments and actions were negative, however. One agent told a tester, "Oh, you're disabled … you don't work." In one case, a housing provider had not removed snow from the pathway the tester would have used to access the unit and refused to walk to the tester's car to discuss the available unit. Another housing provider said that she thought the tester would be able to get out of the wheelchair to enter the building. One tester wrote in the test narrative that a housing provider said he had "never seen any disabled people for the building so this is new for him, especially someone who is severely disabled as I appear to be."

For Example… Positive or neutral comments

"[The housing provider] also mentioned that they have some people living there that are in wheelchairs."

"While we looked at the floor plan she mentioned how one of her family members used a wheelchair and how the [floor plan] would be great because of the space of the apartment."

"[The housing provider] walked me back to my car. She mentioned about trying to find accessible housing must be really hard. I concurred."

Negative comments

"[The housing provider] made the comment that my husband probably helped me with my showers and other care needs, and told me that for liability reasons, any and all modifications would need to be made by me."

"[The housing provider] asked me…what my wife did for a living and if she had a disability."

Housing providers give people who use wheelchairs and homeseekers who are ambulatory roughly the same amount of information about the application process. One exception is that although providers nearly always told both homeseekers that they must complete an application for a recommended unit, they were 1.2 percentage points more likely to tell control testers this information.

If Suitable Units Are Available, Is the Homeseeker Who Uses a Wheelchair Able To Get a Positive Response to a Request for a Reasonable Modification?

When asked whether they would allow modifications that would improve the accessibility of the available units, housing providers mostly agreed but denied or failed to provide an answer to more than one-fourth of the requests. Overall, housing providers agreed to 71.2 percent of modification requests and denied 6.7 percent either at the time of the request or during a subsequent contact, as shown in the last row of exhibit 23. Providers did not provide a clear response to 21.1 percent of requests. These estimates are an unweighted calculation based on all modification requests. Tester narratives suggest that rental agents often do not know whether a modification is allowed and want to consult another person. Regardless of the reason, lack of a final response limits the information a homeseeker needs to make an informed and timely decision.

Exhibit 23. Modification Request Results for Testers Who Use Wheelchairs

Modification Request	*N*	Percent Yes	Percent No	Percent No Final Response
Install bathroom grab bars	689	86.2	0.3	13.4
Install lever door handle	211	83.9	0.5	15.2
Install a ramp from lobby to hallways and elevators	243	77.8	3.7	18.1
Lower doorway thresholds	131	76.3	3.8	18.3
Lower placement of light switches	70	71.4	7.1	20.0
Reverse door swing	45	68.9	6.7	20.0
Remove cabinet under bathroom sink	277	67.9	7.9	24.2
Lower placement of thermostat	127	67.7	3.9	24.4
Remove cabinet under kitchen sink	290	65.2	7.6	25.9
Replace kitchen shelves with revolving or extending shelves	37	62.2	5.4	29.7
Reposition outlets	33	60.6	6.1	27.3
Replace standard shower with roll-in shower	245	51.8	14.7	31.4
Lower placement of kitchen cabinets	63	49.2	27.0	23.8
Replace thick-pile carpet	208	45.2	22.6	30.3
Overall	2,669	71.2	6.7	21.1

The review of tester narratives shows that some housing providers request documentation for necessary modifications. For example, some providers asked for a doctor's note to approve the modification request,[64] whereas others required a written request from the homeseeker that would have to be approved by the company's corporate office. In one test, the housing provider told the tester that it was not possible to make any changes to the available unit because it had been renovated. The provider went on to say that the homeseeker would have to wait for an ADA apartment to become available.

For example… Responses to modification requests

Yes:

A tester asked to remove carpeting and the cabinets below the bathroom and kitchen sinks. The housing provider initially said no, but then said she would ask her manager and call the tester with the answer. When the tester followed up with the housing provider, he was told the modifications were allowed as long as the tester paid for them.

Conditional:

A tester asked permission to place a ramp at the entrance of the unit, and the housing provider replied that the tester needed a doctor to fill out a suite modification form.

No:

A tester asked the housing provider whether it would be permitted to replace the shower with a step with a roll-in shower. The provider said no even after the tester said she would pay for it.

No final response:

A tester requested to build a ramp at the unit entrance. The housing provider said he would have to check the city code first for liability issues, but that changing the door handle and thermostat were allowed. When the tester called to clarify whether the ramp would be allowed, a different person answered and said she would check with the person with whom the tester met. The tester did not receive a return call.

The approval rate for modification requests varies by the type of modification. Housing providers' approval rates varied from more than 80 percent for requests to install bathroom grab bars and lever door handles to less than 50 percent to lower kitchen cabinets and replace carpets. Tester narratives offer some support for the hypothesis that the modification requests receiving higher denial rates require more work, but data do not provide clear reasons for the response differences. For example, in one test, a housing provider denied a request for permission to remove cabinets from under the sink, saying that such a renovation would entail a lot of construction work. This provider suggested that the tester wait for an ADA-compliant unit. In a few tests, more complex modifications, such as removing a bathtub, were denied, and the housing provider offered to install bathroom grab bars instead.

[64] Request for medical documentation of a disability is legal only when the disability is not known by or apparent to a housing provider. On all these tests, the mobility disability was apparent through use of wheelchairs.

Variations in Patterns of Discrimination

The national estimates provide evidence of discrimination in rental markets against people who are deaf and against those who use wheelchairs, but questions remain about the circumstances in which discrimination might be more or less likely. After exploring the potential contributions of homeseeker characteristics, agent attributes, and neighborhood composition to differences in treatment of testers who are deaf and testers who use wheelchairs, few consistent or compelling patterns emerge for either component of this study. Model coefficients are reported in appendix G.

Homeseekers Who Are Deaf

The only factor that consistently contributes to variations in adverse treatment of homeseekers who are deaf is the communication technology they use to contact housing providers.[65] For simplicity, this report presents estimates from a model in which the only predictors of treatment are the type of communication technology. As shown in exhibit 24, housing providers are significantly more likely to take a call from homeseekers who are deaf and who use VRS than from those who use IP Relay Service or IP CTS. The model estimates show that users of IP Relay and IP CTS successfully contacted providers 7.9 percentage points less often than their hearing counterparts. (The IP CTS estimate is reported as the model constant in the exhibit.) VRS users are at much less disadvantage. The model shows that differential treatment was 5.0 percentage points less for VRS users than for IP CTS users; the contact rates for VRS users were, thus, 2.9 percentage points less than for their hearing counterparts. This difference in contact rate by technology is statistically significant. Furthermore, it fits with expectations, given the delays involved in using technologies that rely on typing messages as compared with VRS, which relies primarily on sign language which causes little to no delay.

Smaller differences associated with communication technology are also seen in differential treatment in learning about available units. IP Relay and IP CTS users face greater adverse treatment than VRS users in housing availability. Differential treatment in the offer of incentives is not significantly related to technology type.

[65] One other measure was found to have a statistically significant relationship to the degree of differential treatment. In the model of differential provision of incentives, differential treatment of testers who are deaf is less in census tracts with higher per capita income than in tracts with lower income. No similar difference was seen in the model of differential availability of units.

Exhibit 24. Effect of Communication Technology on Discrimination Against Renters Who Are Deaf

	Contact		Available Unit		Incentives	
	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
Used Internet Protocol Relay Service	– 0.002	0.046	0.018	0.028	– 0.060	0.057
Used Video Relay Service	**– 0.050****	**0.025**	**– 0.038***	**0.022**	– 0.071	0.044
Constant	**0.079*****	**0.022**	**0.042****	**0.018**	**0.095*****	**0.009**
N	1,670		1,452		1,269	
R-squared	0.005		0.005		0.004	

*** Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.

Note: The table reports coefficients from a weighted regression model of the difference in whether testers who are in the control group and testers who are deaf made contact with an agent, learned about an available unit, and learned about incentives. The constant represents the average difference for those testers using the Internet Protocol Captioned Telephone Service (IP CTS). The coefficients on Internet Protocol Relay Service and Video Relay Service provide the difference for those using the particular technology as compared with those using IP CTS.

Homeseekers Who Use Wheelchairs

No factor consistently contributes to variations in treatment of testers who use wheelchairs. Wheelchair type, type of disability, income, and market conditions contribute only modestly to variations in adverse treatment.[66] Housing providers are somewhat less likely to share information about suitable units with homeseekers who use motorized wheelchairs or scooters than with those who use manual wheelchairs. Providers also are less likely to show units to people who have quadriplegia than to homeseekers who have paraplegia.

Discrimination is less against people who use wheelchairs who also have higher (assigned) incomes and learn about a suitable unit or, equivalently, when they look at higher rent housing. This finding suggests that economic class might affect the likelihood of differential treatment of those with mobility disabilities.

To test the hypothesis that housing market conditions influence discrimination against people who use wheelchairs, the study examined whether each measure of differential treatment varies with MSA rental vacancy rates. Marketwide vacancy rates do not contribute to variations in adverse treatment for getting an appointment or for learning about available housing units. In tight rental markets (those with lower vacancy rates), however, homeseekers who use wheelchairs are more likely to be denied opportunities to inspect suitable units.

[66] In addition, some features of the test affect the level of discrimination; greater discrimination in obtaining appointments occurred when the tester in the control group went first or when testers faced different agents.

Conclusions

The differential treatment of homeseekers with disabilities can lead to inequitable opportunities, creating barriers to finding housing that meets their needs and allows for them to live comfortably and independently. As noted in the introduction to this report, complaints of disability discrimination make up the greatest share of those received by federal and local agencies, although discrimination in the sale, rental, and financing of housing based on disability has been illegal since the 1988 amendment to Title VIII of the Fair Housing Act was enacted. This study used a matched paired testing methodology to produce the first national estimates of discrimination in the private rental market against people who are deaf or hard of hearing and people who use wheelchairs. The findings indicate that people who are deaf or hard of hearing face barriers at the early stage of the home search process, including communicating with housing providers and learning about available units. People who use wheelchairs face barriers at several points in the process, including finding accessible units, securing appointments with providers, being shown units, and getting a clear response to their requests to make reasonable modifications.

When people who are deaf or hard of hearing contact housing providers using a telecommunication relay service to learn about an advertised rental unit, they find that providers are less likely to take their calls than they are to take calls from hearing homeseekers. Providers are more likely to take calls from people who use Video Relay Service than other telecommunication relay service types but, even so, do not take all VRS calls. Deaf and hard of hearing homeseekers who do successfully reach a housing provider are less likely than hearing homeseekers to be told about available units. Although this study cannot tease out whether differential treatment is because of the homeseekers' hearing status or the communication delays caused by the technology, findings indicate significant differences in housing providers' willingness to engage when contacted remotely.

People who use wheelchairs start their search for rental housing at a disadvantage in many communities because of the inaccessibility of some portion of the available housing stock. This study was not designed to produce an estimate of the share of rental housing stock that is accessible, but it collected data on the share of advertised units that local project staff indicated had accessible units for testing. The findings suggest that in some metropolitan statistical areas, only a small share of ads lead to units that are accessible to people using wheelchairs.

Even when housing is accessible, homeseekers in wheelchairs face barriers. Housing providers are less likely to make an appointment with people who use a wheelchair than they are with ambulatory homeseekers. When meeting in person, providers are less likely to tell homeseekers in wheelchairs about any available units and also are less likely to show them any units. Providers agree to most requests for a reasonable modification to the available unit or building, but they deny 7 percent of requests and fail to provide a clear response 21 percent of the time. This lack of response limits the information a homeseeker needs to make an informed, timely decision about housing options.

The findings presented in this report are important, but they are not comprehensive. This study focused on the experiences of homeseekers at the early stages of searching for rental

housing on the private market. What would have happened further in the housing search process is unknown. For example, would housing providers' responses to testers who were deaf or hard of hearing have been similar had they met in person, requested an accommodation or modification, or submitted an application? Would providers' responses to testers in wheelchairs have been different if testers submitted an application, pushed for a clear response to their modification requests, or requested an accommodation? In addition, the tests do not tell us whether modification requests agreed to during the application stage would be approved after the tenant signed a lease or how long they would have to wait for approved modifications to be implemented. Another open question is how results would differ if testers had presented themselves to prospective landlords as less well-qualified homeseekers with lower incomes or marginal credit histories.

In addition to addressing the preceding questions, which could form the bases of future paired-testing studies, future research on this subject could take the following research and action steps.

Research on design and construction compliance. The number of wheelchair-accessible units found in the study sites is suggestive of a significant problem in many MSAs, but the findings do not represent a national estimate of accessibility. They do strongly suggest a need for research in this area. Beginning with a carefully defined population of housing structures from which to draw a representative sample of units covered by the Fair Housing Act's design and construction requirements, the study could be carried out by single rather than paired testers who are trained to document any discrepancies between housing units' design and legal requirements. Research could focus on regions or be conducted nationally to produce estimates of the housing stock that does not meet the federal Fair Housing Act design and construction requirements for housing built for first occupancy after March 13, 1991.

Research on TRS technologies. This study drew on usage data to establish targets for the number of tests to be conducted with each of the three TRSs included. As discussed in the report, housing providers' willingness to communicate with homeseekers who are deaf or hard of hearing varied by the type of TRS used. It would be informative for policymakers to know more about the use of TRSs. Issues to pursue include the demographic and socioeconomic characteristics of people who use the various TRSs; factors that underlie any differences in the characteristics of users by technology type; and what barriers, if any, people who are deaf or hard of hearing experience using certain TRSs.

This study also has implications for housing and disability rights advocates, engineers, and housing developers.

Education for housing providers on property accessibility and reasonable modification requirements. When testers asked during telephone or e-mail contact if a property was wheelchair accessible, a number of housing providers did not know. Providers also could not or did not always respond to testers' requests for permission to make reasonable modifications to lobby areas or apartment interiors. The relationship between the differences in responses and the complexity of the modifications request suggest that some providers are unaware of or indifferent to the law pertaining to reasonable modifications. Housing providers need increased awareness of the accessibility of their own properties and training in the law regarding reasonable modifications.

Education for housing providers on laws that prohibit discrimination in housing against people with disabilities. Findings on the differential treatment of people who are deaf or hard of hearing and people who use wheelchairs, along with housing providers' comments on housing accessibility and modification requests, point to the need for ongoing education on laws prohibiting discrimination based on disability status. Property owners and managers must understand the legal requirements of the Fair Housing Act and other laws, including what properties are covered.

Improvements to TRS technologies. Findings show that housing providers contacted by people using VRS technology were more likely to communicate with the caller. Unlike the two other technologies used in this study, VRS supports communication at or near the pace of spoken language between a person who is deaf and a person who is hearing. Use of VRS relies on a person's ability to communicate in sign language, however, so this technology is not an option for everyone. To the extent that differential treatment of people who are deaf or hard of hearing is triggered in part by technology, improvements in communication technologies could improve the housing search, and possibly the outcomes, for people who begin their housing search remotely.

Demand for wheelchair-accessible rental housing. Discrimination-based impediments to housing access, along with inaccessible housing stock and population trends, likely will increase the need for accessible housing in cities across the United States. As the U.S. population trends older and rates of disability increase, competition could increase among renters for accessible apartments and homes. Increasing demand could be particularly strong in markets where a predominance of housing was built for first occupancy before March 13, 1991, when the Fair Housing Act's design and construction standards went into effect. Housing policy and industry professionals in cities with older housing stock and an aging population need to consider how to meet a demand for accessible units.

Because this study is the first to produce national estimates of rental housing discrimination against people who are deaf and people who use wheelchairs, it does not indicate whether the forms and rates of discrimination have changed over time. The results clearly indicate, however, that differential treatment exists in the rental housing market. This study provides useful evidence to policymakers and practitioners working to reduce discrimination and ensure equal opportunity to secure housing.

References

Angrist, Joshua, and Jörn-Steffen Pischke. 2008. *Mostly Harmless Econometrics*. Princeton, NJ: Princeton University Press.

Edley, Christopher Jr. 1993. "Implications of Empirical Studies on Race Discrimination." In *Clear and Convincing Evidence: Measurement of Discrimination in America*, edited by Michael Fix and Raymond J. Struyk. Washington, DC: Urban Institute Press: 377–391.

Equal Rights Center (ERC). 2012. *Disconnected: Housing Discrimination Against the Deaf and Hard of Hearing*. Washington, DC: Equal Rights Center.

Fix, Michael, and Raymond J. Struyk, eds. 1993. *Clear and Convincing Evidence: Measurement of Discrimination in America*. Washington, DC: Urban Institute Press.

Hunter, William C., and Mary Beth Walker. 1996. "The Cultural Affinity Hypothesis and Mortgage Lending Decisions," *Journal of Real Estate Finance and Economics* 13 (1): 57–70.

National Fair Housing Alliance (NFHA). 2012. *2012 Fair Housing Trends Report*. Washington, DC: National Fair Housing Alliance.

Rolka Loube Saltzer Associates (RLSA). 2012. "Interstate TRS Fund Performance Status Report: Funding Year July 2012–June 2013." http:/www.r-l-s-a.com/TRS/reports/2012-12TRSStatus.pdf.

———. 2014. "Interstate TRS Fund Performance Status Report: August 2014." http://www.r-l-s-a.com/TRS/reports/2014-08TRSStatus.pdf.

Ruggles, Steven, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. 2010. "Integrated Public Use Microdata Series: Version 5.0." Machine-readable database. Minneapolis, MN: University of Minnesota.

Smith, Stanley K., Stefan Rayer, and Eleanor A. Smith. 2008. "Aging and Disability: Implications for the Housing Industry and Public Policy in the United States," *Journal of American Planning Association* 74 (93): 289–306.

Turner, Margery Austin, Carla Herbig, Deborah Kaye, Julie Fenderson, and Diane Levy. 2005. *Discrimination Against Persons With Disabilities: Barriers at Every Step*. Washington, DC: U.S. Department of Housing and Urban Development.

Turner, Margery Austin, Rob Santos, Diane K. Levy, Doug Wissoker, Claudia Aranda, and Rob Pitingolo. 2013. *Housing Discrimination Against Racial and Ethnic Minorities 2012*. Washington, DC: U.S. Department of Housing and Urban Development. http://www.huduser.org/portal/Publications/pdf/HUD-514_HDS2012.pdf.

Souza, Maria Teresa, with Robert A. Collinson, Marge Martin, Barry L. Steffen, David A. Vandenbroucke, and Yung-Gann David Yao. 2009. *2009 Worst Case Housing Needs of People With Disabilities*. Washington, DC: U.S. Department of Housing and Urban Development.

Appendix A. Excerpts From Statements on the Fair Housing Act: Disabilities and Reasonable Modifications

Excerpts: U.S. Department of Housing and Urban Development's webpage "Fair Housing—It's Your Right"[67]

1.) What Housing Is Covered?

The Fair Housing Act[68] covers most housing. In some circumstances, the Act exempts owner-occupied buildings with no more than four units, single-family housing sold or rented without the use of a broker, and housing operated by organizations and private clubs that limit occupancy to members.

2.) What Is Prohibited?

In the Sale and Rental of Housing: No one may take any of the following actions based on race, color, national origin, religion, sex, familial status or handicap:

- Refuse to rent or sell housing
- Refuse to negotiate for housing
- Make housing unavailable
- Deny a dwelling
- Set different terms, conditions or privileges for sale or rental of a dwelling
- Provide different housing services or facilities
- Falsely deny that housing is available for inspection, sale, or rental
- For profit, persuade owners to sell or rent (blockbusting) or
- Deny anyone access to or membership in a facility or service (such as a multiple listing service) related to the sale or rental of housing.

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[67] For the full text of the webpage, see http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/FHLaws/yourrights.

[68] For the full text of the Act, see Fair Housing Act, 42 U.S.C. §§ 3601-3610

3.) Additional Protection if You Have a Disability

If you or someone associated with you:

- Have a physical or mental disability (including hearing, mobility and visual impairments, chronic alcoholism, chronic mental illness, AIDS, AIDS Related Complex and mental retardation) that substantially limits one or more major life activities
- Have a record of such a disability or
- Are regarded as having such a disability
- your landlord **may not:**
- Refuse to let you make reasonable modifications to your dwelling or common use areas, at your expense, if necessary for the disabled person to use the housing. (Where reasonable, the landlord may permit changes only if you agree to restore the property to its original condition when you move.)
- Refuse to make reasonable accommodations in rules, policies, practices or services if necessary for the disabled person to use the housing.

4.) Requirements for New Buildings

In buildings that are ready for first occupancy after March 13, 1991, and have an elevator and four or more units:

- Public and common areas must be accessible to persons with disabilities
- Doors and hallways must be wide enough for wheelchairs
- All units must have:
  - » An accessible route into and through the unit
  - » Accessible light switches, electrical outlets, thermostats and other environmental controls
  - » Reinforced bathroom walls to allow later installation of grab bars and
  - » Kitchens and bathrooms that can be used by people in wheelchairs.

If a building with four or more units has no elevator and will be ready for first occupancy after March 13, 1991, these standards apply to ground floor units.

Excerpts: U.S. Department of Justice and U.S. Department of Housing and Urban Development joint statement, April 30, 2013: Accessibility (Design and Construction) Requirements for Covered Multifamily Dwellings under the Fair Housing Act[69]

Accessibility Requirements of the Fair Housing Act

1. What are the accessible features required by the Act?

The Act requires that covered multifamily dwellings be designed and constructed with the following accessible features:

- The public and common use areas must be readily accessible to and usable by persons with disabilities;
- All doors designed to allow passage into and within all premises of covered dwellings must be sufficiently wide to allow passage by persons with disabilities, including persons who use wheelchairs;
- All premises within covered dwellings must contain the following features:
  - » An accessible route into and through the dwelling unit;
  - » Light switches, electrical outlets, thermostats, and other environmental controls in accessible locations;
  - » Reinforcements in bathroom walls to allow the later installation of grab bars;
  - » Usable kitchens and bathrooms such that an individual using a wheelchair can maneuver about and use the space.

Excerpts: U.S. Department of Justice and U.S. Department of Housing and Urban Development joint statement, March 5, 2008: Reasonable Modifications under the Fair Housing Act[70]

2. What is a reasonable modification under the Fair Housing Act?

A reasonable modification is a structural change made to existing premises, occupied or to be occupied by a person with a disability, in order to afford such person full enjoyment of the premises. Reasonable modifications can include structural changes to interiors and

[69] The full document is available at http://www.ada.gov/doj_hud_statement.pdf.

[70] The full document is available at http://www.hud.gov/offices/fheo/disabilities/reasonable_modifications_mar08.pdf.

exteriors of dwellings and to common and public use areas. A request for a reasonable modification may be made at any time during the tenancy. The Act makes it unlawful for a housing provider or homeowners' association to refuse to allow a reasonable modification to the premises when such a modification may be necessary to afford persons with disabilities full enjoyment of the premises.

To show that a requested modification may be necessary, there must be an identifiable relationship, or nexus, between the requested modification and the individual's disability. Further, the modification must be "reasonable." Examples of modifications that typically are reasonable include widening doorways to make rooms more accessible for persons in wheelchairs; installing grab bars in bathrooms; lowering kitchen cabinets to a height suitable for persons in wheelchairs; adding a ramp to make a primary entrance accessible for persons in wheelchairs; or altering a walkway to provide access to a public or common use area. These examples of reasonable modifications are not exhaustive.

3. Who is responsible for the expense of making a reasonable modification?

The Fair Housing Act provides that while the housing provider must permit the modification, the tenant is responsible for paying the cost of the modification.

7. What kinds of information, if any, may a housing provider request from a person with an obvious or known disability who is requesting a reasonable modification?

A housing provider is entitled to obtain information that is necessary to evaluate whether a requested reasonable modification may be necessary because of a disability. If a person's disability is obvious, or otherwise known to the housing provider, and if the need for the requested modification is also readily apparent or known, then the provider may not request any additional information about the requester's disability or the disability-related need for the modification.

If the requester's disability is known or readily apparent to the provider, but the need for the modification is not readily apparent or known, the provider may request only information that is necessary to evaluate the disability-related need for the modification.

17. What if the housing provider fails to act promptly on a reasonable modification request?

A provider has an obligation to provide prompt responses to a reasonable modification request. An undue delay in responding to a reasonable modification request may be deemed a failure to permit a reasonable modification.

Appendix B. Data Collection Oversight, Management, and Quality Control

The data collection oversight, management, and quality control procedures used in this study were based on those used for a number of previous housing discrimination studies, including the national housing discrimination study conducted in 2012, which included more than 8,000 completed tests in 28 metropolitan areas.[1] For this study, a director of field operations and six regional coordinators led the field operations team. Regional coordinators were responsible for training local field test coordinators, overseeing tester recruitment, training testers, overseeing testing and test report preparation, reviewing test reports, and maintaining daily telephone and e-mail contact with test coordinators at each site.

Careful oversight and regular communication allowed the field operations team to identify and correct any problems as soon as they developed. Regional coordinators documented events that posed challenges to the study and conferred with the director of field operations immediately if an issue had no clear resolution. The field operations team met weekly to discuss site progress and to brainstorm solutions to problems.

As in the 2012 housing discrimination study, the research team used the Central Online Data Entry System (CODE), a test management database designed to collect test data in each site. Because CODE integrates the assignment, data entry, and test management functions, it streamlines the process and reduces data entry errors by automating multiple components and implementing checks for consistency and completeness. The field operations staff continuously monitored incoming data, assessed tester adherence to reporting requirements, and tracked progress toward testing targets. CODE automatically assigned identification numbers for rental ads, testers, e-mail and telephone inquiries, in-person visits, and inspected units, thereby reducing a major source of potential data entry errors.

Testers completed electronic forms for telephone calls, appointment contacts, in-person visits, and any followup contact that occurred. Test coordinators reviewed tests to ensure that report forms were complete and accurate before approving tests and submitting them to the research team. After tests were recorded in CODE as complete, the regional coordinator reviewed files to identify any problems with data quality. CODE also allowed for the field operations team to identify which local staff members had entered information on particular report forms and when the information was entered. These data, in turn, allowed the field operations team to identify the rare tests that seemed suspicious and to assess whether a test had been tampered with or fabricated in any respect.

[1] Turner, Margery Austin, Rob Santos, Diane K. Levy, Doug Wissoker, Claudia Aranda, and Rob Pitingolo. 2013. *Housing Discrimination Against Racial and Ethnic Minorities 2012*. Washington, DC: U.S. Department of Housing and Urban Development. http://www.huduser.org/portal/Publications/pdf/HUD-514_HDS2012.pdf.

Appendix C. Local Testing Organizations

For the component of the study with people who are deaf and hard of hearing, 3 local testing organizations recruited and managed testers. For the component of the study with people who use wheelchairs, 28 organizations in 30 metropolitan statistical areas conducted the testing.

LOCAL TESTING ORGANIZATIONS AND SITES

Organization name	Metro area	Study
Housing Research and Advocacy Center (HRAC)	Akron, OH and Cleveland, OH	Wheelchair
Statewide Independent Living Council of Georgia (SILCG)	Atlanta, GA	Wheelchair
Independent Living Center of Kern County (ILCKC)	Bakersfield, CA	Wheelchair
Intermountain Fair Housing Council (IFHC)	Boise City, ID	Wheelchair
HOPE Fair Housing Center	Chicago, IL	Deaf
Access Living	Chicago, IL	Wheelchair
		Deaf
North Texas Fair Housing Center (NTFHC)	Dallas–Fort Worth, TX	Wheelchair
Miami Valley Fair Housing Center (MVFHC)	Dayton–Springfield, OH	Wheelchair
Center for Persons with Disabilities (CPD)	Denver–Boulder, CO	Wheelchair
Fair Housing Center of Southeastern Michigan (FHCSM)	Detroit, MI	Wheelchair
Joy A. Shabazz CIL (JASCIL)	Greensboro–Winston-Salem–High Point, NC	Wheelchair
Independent Living Research Utilization (ILRU)	Houston–Brazoria, TX	Wheelchair
Coalition for Independence (CfI)	Kansas City, MO–KS	Wheelchair
Nevada Legal Services	Las Vegas, NV	Wheelchair
Southern California Housing Rights Center (SCHRC)	Los Angeles–Long Beach, CA	Wheelchair
Valley Association for Independent Living (VAIL)	McAllen–Edinburgh–Pharr–Mission, TX	Wheelchair

Organization name	Metro area	Study
Fair Housing Continuum	Melbourne–Titusville–Cocoa–Palm Bay, FL, and Orlando, FL	Wheelchair
Memphis Center for Independent Living (MCIL)	Memphis, TN	Wheelchair
Center for Independent Living of South Florida, Inc. (CILSF)	Miami, FL	Wheelchair
Center for Independence of the Disabled, New York (CIDNY)	New York–northeastern NJ	Wheelchair
Resources for Human Development (RHD)	Philadelphia, PA–NJ	Wheelchair
Three Rivers Center for Independent Living (TRCIL)	Pittsburgh, PA	Wheelchair
Center for Disability Rights (CDR)	Rochester, NY	Wheelchair
California Foundation for Independent Living Centers (CFILC)	Sacramento, CA	Wheelchair
Fair Housing Foundation (FHF)	San Diego, CA	Wheelchair
		Deaf
Disability Rights Education and Defense Fund (DREDF)	San Francisco, CA	Wheelchair
Fair Housing Council of Central New York (FHCCNY)	Syracuse, NY	Wheelchair
Equal Rights Center (ERC)	Washington, DC–MD–VA	Wheelchair
Legal Aid Society of Palm Beach County, Inc. (LASPBC)	West Palm Beach-Boca Raton-Delray Beach, FL	Wheelchair

Appendix D. Sampling Frame for Deaf Tests

For the deaf and hard of hearing component of the study, telephone testing was conducted in 168 metropolitan statistical areas (MSAs) grouped into 30 strata. Of these 30 strata, 14 consisted of a single MSA and 16 consisted of multiple geographically grouped MSAs.

ALLOCATED AND COMPLETED TESTS BY STRATUM

Stratum number	Stratum name	Metro areas for testing	Allocated tests	Completed tests
1	New York-Northeastern NJ	New York-Northeastern NJ	78	75
2	Los Angeles-Long Beach, CA	Los Angeles-Long Beach, CA	58	78
3	Chicago, IL	Chicago, IL	41	55
4	Philadelphia, PA/NJ	Philadelphia, PA/NJ	29	30
5	Dallas-Fort Worth, TX	Dallas-Fort Worth, TX	28	32
6	Detroit, MI	Detroit, MI	28	50
7	Houston-Brazoria, TX	Houston-Brazoria, TX	25	37
8	San Francisco-Oakland-Vallejo, CA	San Francisco-Oakland-Vallejo, CA	23	26
9	Boston, MA-NH	Boston, MA-NH	22	40
10	Riverside-San Bernardino, CA	Riverside-San Bernardino, CA	22	31
11	Tampa-St. Petersburg-Clearwater, FL	Tampa-St. Petersburg-Clearwater, FL	20	26
12	Phoenix, AZ	Phoenix, AZ	20	24
13	Atlanta, GA	Atlanta, GA	20	40
14	Washington, DC/MD/VA	Washington, DC/MD/VA	20	16

Stratum Grouping	Stratum Name	Metro Areas for Testing	Allocated Tests	Completed Tests
15	Central	Kansas City, MO-KS	48	52
		Oklahoma City, OK		
		Tulsa, OK		
		Little Rock--North Little Rock, AR		
		Wichita, KS		
		Omaha, NE/IA		
		Colorado Springs, CO		
		Fayetteville-Springdale, AR		
		Springfield, MO		
		Lincoln, NE		
16	Midwest 1	St. Louis, MO-IL	55	58
		Columbus, OH		
		Dayton-Springfield, OH		
		Grand Rapids, MI		
		Akron, OH		
		Saginaw-Bay City-Midland, MI		
		Fort Wayne, IN		
		Madison, WI		
		Appleton-Oshkosh-Neenah, WI		
		Evansville, IN/KY		

Stratum Grouping	Stratum Name	Metro Areas for Testing	Allocated Tests	Completed Tests
		Minneapolis-St. Paul, MN		
		Milwaukee, WI		
		Louisville, KY/IN		
		Knoxville, TN		
		Youngstown-Warren, OH-PA		
17	Midwest 2	Lansing-E. Lansing, MI	54	53
		Des Moines, IA		
		Hamilton-Middleton, OH		
		South Bend-Mishawaka, IN		
		Davenport, IA-Rock Island -Moline, IL		
		Toledo, OH/MI		
		Cleveland, OH		
		Indianapolis, IN		
		Cincinnati-Hamilton, OH/KY/IN		
		Memphis, TN/AR/MS		
18	Midwest 3	Kalamazoo-Portage, MI	53	58
		Canton, OH		
		Ann Arbor, MI		
		Rockford, IL		
		Peoria, IL		

Stratum Grouping	Stratum Name	Metro Areas for Testing	Allocated Tests	Completed Tests
19	Northeast 1	Pittsburgh, PA	42	64
		Albany-Schenectady-Troy, NY		
		Harrisburg-Lebanon--Carlisle, PA		
		Hartford-Bristol-Middleton- New Britain, CT		
		York, PA		
		Atlantic City, NJ		
		Trenton, NJ		
		Stamford, CT		
		Worcester, MA		
20	Northeast 2	Baltimore, MD	42	48
		Rochester, NY		
		Allentown-Bethlehem-Easton, PA/NJ		
		Syracuse, NY		
		Lancaster, PA		
		Utica-Rome, NY		
		Newburgh-Middletown, NY		
		New Haven-Meriden, CT		
		Dutchess Co., NY		

Stratum Grouping	Stratum Name	Metro Areas for Testing	Allocated Tests	Completed Tests
21	Northeast 3	Monmouth-Ocean, NJ	42	45
		Buffalo-Niagara Falls, NY		
		Providence-Fall River-Pawtucket, MA/RI		
		Scranton-Wilkes-Barre, PA		
		Springfield-Holyoke-Chicopee, MA		
		Wilmington, DE/NJ/MD		
		Reading, PA		
		Erie, PA		
		Bridgeport, CT		
		Brockton, MA		
22	South 1	Orlando, FL	52	67
		Greenville-Spartanburg-Anderson SC		
		Augusta-Aiken, GA-SC		
		Fayetteville, NC		
		West Palm Beach-Boca Raton-Delray Beach, FL		
		Fort Myers-Cape Coral, FL		
		Pensacola, FL		
		Myrtle Beach, SC		
		Norfolk-VA Beach--Newport News, VA		
		Huntsville, AL		

Stratum Grouping	Stratum Name	Metro Areas for Testing	Allocated Tests	Completed Tests
23	South 2	Baton Rouge, LA Fort Lauderdale-Hollywood-Pompano Beach, FL Mobile, AL Fort Pierce, FL Lafayette, LA Jacksonville, FL Daytona Beach, FL Montgomery, AL Savannah, GA New Orleans, LA Hickory-Morgantown, NC	49	48
24	South 3	Naples, FL Nashville, TN Lakeland-Winter Haven, FL Shreveport, LA Tallahassee, FL Sarasota, FL Johnson City-Kingsport--Bristol, TN/VA Biloxi-Gulfport, MS Charlotte-Gastonia-Rock Hill, NC-SC Birmingham, AL Ocala, FL Wilmington, NC	52	60

Stratum Grouping	Stratum Name	Metro Areas for Testing	Allocated Tests	Completed Tests
25	South 4	Raleigh-Durham, NC Chattanooga, TN/GA Charleston-N. Charleston, SC Miami-Hialeah, FL Richmond-Petersburg, VA Columbia, SC Macon-Warner Robins, GA Greensboro-Winston Salem-High Point, NC Melbourne-Titusville-Cocoa-Palm Bay, FL Jackson, MS Lexington-Fayette, KY	53	55
26	South Central	San Antonio, TX Austin, TX McAllen-Edinburg-Pharr-Mission, TX Beaumont-Port Arthur-Orange, TX Corpus Christi, TX Brownsville-Harlingen-San Benito, TX Killeen-Temple, TX Lubbock, TX Odessa, TX Galveston-Texas City, TX	43	58

Stratum Grouping	Stratum Name	Metro Areas for Testing	Allocated Tests	Completed Tests
27	West Central 1	Santa Cruz, CA	48	62
		Tucson, AZ		
		Las Vegas, NV		
		Fresno, CA		
		Bakersfield, CA		
		Eugene-Springfield, OR		
		Santa Rosa-Petaluma, CA		
		Salem, OR		
		Fort Collins-Loveland, CO		
		Albuquerque, NM		
28	West Central 2	Visalia-Tulare-Porterville, CA	45	64
		Denver-Boulder, CO		
		San Jose, CA		
		Stockton, CA		
		Modesto, CA		
		Santa Barbara-Santa Maria-Lompoc, CA		
		Reno, NV		
		San Luis Obispo-Atascad-P Robles, CA		
		Salt Lake City-Ogden, UT		

Stratum Grouping	Stratum Name	Metro Areas for Testing	Allocated Tests	Completed Tests
29	West Northern	Seattle-Everett, WA	44	62
		Portland, OR-WA		
		Tacoma, WA		
		Boise City, ID		
		Spokane, WA		
		Provo-Orem, UT		
		Anchorage, AK		
30	West Southern	Sacramento, CA	44	44
		San Diego, CA		
		Honolulu, HI		
		El Paso, TX		
		Ventura-Oxnard-Simi Valley, CA		
		Salinas-Sea Side-Monterey, CA		
		Total	**1,200**	**1,458**

Appendix E. Rental Forms

ADVANCE CONTACT FORM – DHH

Control Number: _____
Advance Contact Form sequence: _____

SECTION 1: GENERAL INFORMATION

Who initiated contact?
[ ] Advance Caller/E-mailer or Test Coordinator
[ ] Housing Provider

With whom did you speak, if given: _____

Type of contact:
[ ] Phone
[ ] E-mail
[ ] Text Message

Phone Number of housing provider
(If called/text messaged only): _____

E-mail Address of housing provider
(If e-mailed only): _____

Day of the week that contact was made:
[ ] Monday
[ ] Tuesday
[ ] Wednesday
[ ] Thursday
[ ] Friday
[ ] Saturday
[ ] Sunday

Date (mm/dd/yyyy): ___/___/_____
Time (HH:MM): ___:___
AM or PM:
[ ] AM
[ ] PM

SECTION 2: DISPOSITION OF THE ADVANCE CONTACT

Is this the final advance contact?
[ ] YES, and housing is eligible
[ ] YES, and housing is ineligible
[ ] NO, and will attempt to contact housing provider again

If this is NOT the final advance contact, why not?
[ ] No answer/kept ringing/went to voicemail
[ ] Was hung up on
[ ] Dropped call

[ ] Left message with a person who did not have information
[ ] Housing provider will call back
[ ] Told to call back later
[ ] Other

If other, please specify: _____

If this is the final advance contact and you have determined that ad is INELIGIBLE, what is the reason?

[ ] Housing provider could not be reached after 3 calls
[ ] No reply to e-mail sent w/in 24 hours
[ ] Telephone number incorrect/no longer in service
[ ] Invalid e-mail address
[ ] Automatic email response stating recipient is unavailable
[ ] Outside of target area for MSA
[ ] Located on Indian land (e.g., reservations, Rancherias, etc.)
[ ] Housing for older persons
[ ] Test was already conducted here/Testers have already visited housing provider
[ ] Another reason approved by Director of Field Operations
[ ] Electronic contact form only method to reach agent
[ ] Exceeds price range for MSA
[ ] Share situation
[ ] Single room occupancy
[ ] Apartment locator service charging up-front fee
[ ] Sublet
[ ] Temporary/short term rental
[ ] Public/subsidized housing development
[ ] No unit is available for rent
[ ] Owner does not have more than four units

If this is the final advance contact and you have determined that this ad is ELIGIBLE, please enter information about each available unit (or type of unit, if applicable) below:

Address of available unit	# of Bedrooms	Rent Price	Date Available MM/DD/YY

What are the office hours? _____
_____

Does the agent/rental office accept appointments?
[ ] Yes, you must make an appointment
[ ] Yes, you have the option of making an appointment or just dropping-in during office hours
[ ] No, but you may drop-in anytime during office hours

Verify the address to be visited: _____
_____

SECTION 3: FORM SUBMISSION

General Comments: _____
_____

This form is complete
[ ] Yes
[ ] No

Delete this record (for TC use only)
[ ] Yes
[ ] No

RENTAL ASSIGNMENT FORM – DHH

Site: [auto-fill]
Control # [auto-fill]
Tester Sequence: [auto-fill]
Tester ID # [auto-fill]

TRS Type (for Deaf/Hard of Hearing testers only) [ ] VRS
[ ] IP Relay Service
[ ] IP CTS
Narrative requirement: [auto-fill]

Target date and time of 1st appointment call: _____

SECTION 1: INFORMATION ABOUT TESTER'S HOUSEHOLD FOR SPECIFIC TEST

Household Income	**Gross Monthly Income**	**Gross Annual Income**
Tester	[auto-fill]	[auto-fill]
Spouse	[auto-fill]	[auto-fill]
Total for Household	[auto-fill]	[auto-fill]

Household Members	**Relationship (none, spouse, child)**	**Name**	**Sex**	**Age**
Person 2				
Person 3				
Person 4				
Person 5				

EMPLOYMENT INFORMATION

Tester's Current Occupation: _____
Name of Tester's Current Employer: _____
First line of tester's employer's address: _____
Second line of tester's Employer's address: _____
Length of employment at current job: _____

Name of spouse's current employer: _____
First line of spouse's employer's address: _____
Second line of spouse's employer's address: _____
Spouse's length of employment at current job: _____

CURRENT RENTAL HOUSING SITUATION

Amount of current rent: [auto-fill]

Years at Current Residence: _____

Type of Rental Agreement at Current Residence:	[ ] Month-to-Month
	[ ] Lease
Tester owns a car?	[ ] Yes
	[ ] No

Other characteristics:

Type of current housing:	Renting
Credit standing:	Excellent credit standing, no late payments
History of rent payment at current residence:	Have always paid rent on time
Other:	Non-smoking; no pets
	Just started looking for housing

SECTION 2: INFORMATION ABOUT HOUSING PROVIDER

Name of housing provider (agent, company, and/or complex):	[auto-fill]
Address of advertised unit:	[auto-fill]
City	[auto-fill]
State	[auto-fill]
Zip code:	[auto-fill]
Phone number:	[auto-fill]
E-mail address:	[auto-fill]
Name of advertisement source:	[auto-fill]
Date of advertisement publication:	[auto-fill]
Text of Advertisement:	[auto-fill]
Advertisement URL:	[auto-fill]

TYPE OF HOUSING TO BE REQUESTED

Maximum rental price:	[auto-fill]
Move-in date to request:	[auto-fill]
Number of bedrooms to request:	[auto-fill]
Household Composition:	[auto-fill]
Minimum number of bedrooms willing to accept:	[auto-fill]
Type of unit	[auto-fill]

AREA PREFERENCE

If you are pressed by the agent, you may state that you are looking in:

_____

Remember: You are always open to considering any areas recommended by the agent!

Reason for moving: [auto-fill: Have recently relocated to the area]

SECTION 3: TESTER'S INFORMATION

Tester Name:	[auto-fill]
Home Address:	[auto-fill]
Phone Number:	[auto-fill]
E-mail Address:	[auto-fill]
Race:	[auto-fill]
National Origin:	[auto-fill]
Gender:	[auto-fill]
Age:	[auto-fill]

SECTION 4: FORM SUBMISSION

General comments:	_____
	_____
This form is complete.	[ ] Yes
	[ ] No
Timestamp:	[auto-fill]
Test released:	[auto-fill]

TESTER CONTACT FORM – DHH

Tester ID: _____
Control Number: _____
Appointment Contact Form Sequence: _____

SECTION 1: GENERAL INFORMATION

Who initiated contact?
[ ] Tester initiated to conduct test
[ ] Tester initiated to cancel appointment
[ ] Housing provider

Type of contact:
[ ] Phone
[ ] E-mail
[ ] Text Message

Type of TRS used (testers who D/HH only)
[ ] VRS
[ ] IP Relay Service
[ ] IP CTS

Day of the Week Contact was Attempted:
[ ] Monday
[ ] Tuesday
[ ] Wednesday
[ ] Thursday
[ ] Friday
[ ] Saturday
[ ] Sunday

Date (mm/dd/yyyy): ___/___/_____
Time (hh:mm): ___:___
AM or PM:
[ ] AM
[ ] PM

Name of housing provider, if given: _____
Phone number of housing provider
(If called/text messaged only): _____

E-mail address of housing provider (if e-mailed only): _____

SECTION 2: DISPOSITION OF CONTACT

What were the purpose and result of this particular contact? _____
_____
_____
_____

SECTION 3: FORM SUBMISSION

This form is complete:
[ ] Yes
[ ] No

Delete this record (for TC use only):
[ ] Yes
[ ] No

TEST REPORT FORM – DHH

Site: _____
CONTROL #: _____
TESTER ID NUMBER: _____

SECTION 1: DISPOSITION OF CONTACT

Were you able to reach someone who was able to provide information?

[ ] Yes
[ ] No

If yes, proceed to Section2. If no, why not?

[ ] Housing provider could not be reached after 3 calls
[ ] Wrong number/number no longer in service
[ ] Left message with a person who did not have information and never received a call back
[ ] Agent said s/he would call back and never did
[ ] Agent hung up/refused to provide info
[ ] Other

If other, specify _____
_____

SECTION 2: INFORMATION ABOUT HOUSING PROVIDER

Did you obtain information about housing?

[ ] Yes
[ ] No

If not, why not? Proceed to Section 3 after answering this question.

[ ] Agent suggested we communicate in person
[ ] Other

If other, specify _____
_____

Assigned Units: How many units were available that had your assigned number of bedrooms to request, were available when you need them, and were at or below your price max? _____

Other Units: Because zero (0) is the number to the above question OR the agent volunteered, how many units were available that had at least your minimum number of bedrooms willing to accept, were available when you need them, and were at or below your price max (excluding any "assigned units")? _____

How many TOTAL rental housing units that meet your needs did the agent tell you were available: _____

Did the agent inform you that any of the following was necessary for the application process?

Application form [ ] Yes
[ ] No
Credit check [ ] Yes
[ ] No
Co-signer [ ] Yes
[ ] No
Criminal background check [ ] Yes
[ ] No

Did the agent offer to send you a copy of the rental application?
[ ] Yes
[ ] No

Please indicate if the following pieces of personal information were volunteered by you, requested by the agent, or not obtained by the agent.

	I volunteered	Agent Requested	Agent did not obtain
a. Your marital status			
b. Your household size			
c. Your or spouse's income			
Your or spouse's source of income			
d. Your or spouse's occupation			
e. Your or spouse's length of employment			
f. Your credit standing			
g. Your rent history			
h. Your address/phone number			
i. Other:			

If Other, specify: _____

Did the agent comment on or make reference to any of the following:
Fair Housing Laws, Equal Housing Opportunity, Open Housing Ordinance, ADA or Anti-discrimination Laws
[ ] Yes
[ ] No

If yes, record agent's comment: _____
_____

Race or ethnicity [ ] Yes

[ ] No

If yes, record agent's comment: _____
_____

People who are deaf or hard of hearing [ ] Yes
[ ] No

If yes, record agent's comment: _____
_____

Disability or persons with disabilities [ ] Yes
[ ] No

If yes, record agent's comment: _____
_____

<u>For testers who are deaf or hard of hearing only:</u>

Nature/severity of your disability [ ] Yes
[ ] No

If yes, record agent's comment: _____
_____

Safety risk/liability posed by tester [ ] Yes
[ ] No

If yes, record agent's comment: _____
_____

Liability insurance as a suggestion or requirement to rent
[ ] Yes
[ ] No

If yes, record agent's comment: _____
_____

Your ability to live independently [ ] Yes
[ ] No

If yes, record agent's comment: _____
_____

SECTION 3: APPOINTMENT INFORMATION

Were you able to obtain an appointment? [ ] Yes
[ ] No

If no, why not? (Proceed to Section 4 after answering this question.) [ ] No units were available/nothing to show

[ ] Agent hung up/refused to schedule appt/did not recommend the unit(s)
[ ] Leasing office/agent too busy within the upcoming week
[ ] Other

If other, specify

If yes, proceed with the rest of this section.

Day of the Appointment
[ ] Monday
[ ] Tuesday
[ ] Wednesday
[ ] Thursday
[ ] Friday
[ ] Saturday
[ ] Sunday

Date (mm/dd/yyyy/) _____

Time (hh:mm) _____

AM or PM [ ] AM [ ] PM

Name of the person you have arranged to meet With _____

Location of meeting – specify type (e.g., agent's office or address of specific home) and actual address _____
_____
_____

SECTION 4: FORM SUBMISSION

This form is complete:
[ ] Yes
[ ] No

Did you receive assistance in completing form?
[ ] Yes
[ ] No

Delete this record (for TC use only)
[ ] Yes
[ ] No

AVAILABLE RENTAL UNIT FORM – DHH

Control Number: _____
Tester ID Number: _____
Available Unit Form Sequence: _____

SECTION 1: GENERAL INFORMATION ABOUT AVAILABLE UNIT

Address of Available Unit
Number and Street _____
Unit Number _____
City _____
State _____
Zip Code _____

Type of Building:
[ ] Apartment Building - 4 or Fewer Units
[ ] Apartment Building - 5 or more
[ ] Single-Family Home
[ ] Mobile Home

Number of bedrooms: _____
Date Available (mm/dd/yyyy): _____
Length of Lease? [check all that apply]

[ ] Month-to-month
[ ] Three month
[ ] Six month
[ ] One year
[ ] Two year
[ ] Other

If other, please specify: _____

SECTION 2: COSTS AND INCENTIVES

Costs: Please carefully record all costs related to renting this available unit.

What is the rent per month? _____

Is a security deposit and/or surety bond required?
[ ] 1. Yes – choice of security deposit or surety bond
[ ] 2. Yes – security deposit
[ ] 3. Yes – surety bond
[ ] 4. No
[ ] 5. Did not obtain

If you answered 1, 2, or 3, please report the amount accordingly:
Security deposit amount _____
Surety bond amount _____

Is a non-refundable application fee required?
[ ] Yes
[ ] No
[ ] Did not obtain

If yes, what is the total application fee for your household?

_____

Is a non-refundable move-in fee required? [ ] Yes
[ ] No
[ ] Did not obtain

If yes, what is the total move-in fee for your household? _____

Where you told about any other fees or payment at the time of application or move-in?
[ ] Yes
[ ] No

Name of additional fee 1 _____
Is this a one-time or reoccurring monthly fee? [ ] one-time/annual
[ ] monthly

If this is a reoccurring monthly fee/payment, how many months?

_____

What is the amount of this fee? _____
Name of additional fee 2 _____
Is this a one-time or reoccurring monthly fee? [ ] one-time/annual
[ ] monthly

If this is a reoccurring monthly fee/payment, how many months?

_____

What is the amount of this fee? _____
Name of additional fee 3 _____
Is this a one-time or reoccurring monthly fee? [ ] one-time/annual
[ ] monthly

If this is a reoccurring monthly fee/payment, how many months?

_____

What is the amount of this fee? _____
Name of additional fee 4 _____
Is this a one-time or reoccurring monthly fee? [ ] one-time/annual
[ ] monthly

If this is a reoccurring monthly fee/payment, how many months?

_____

What is the amount of this fee? _____

Financial Incentives/Specials

Were you told about any financial incentives or special if you decide to apply for and rent this unit immediately?
[ ] Yes
[ ] No

Name of financial incentives/specials 1 _____
Is this a one-time/annual or a monthly fee reduction? [ ] one-time/annual
[ ] monthly

If this is a reoccurring monthly fee reduction, how many months?

_____

What is the amount of this incentive or special? _____

Name of financial incentives/specials 2 _____

Is this a one-time/annual or a monthly fee reduction? [ ] one-time/annual

[ ] monthly

If this is a reoccurring monthly fee reduction, how many months?

_____

What is the amount of this incentive or special? _____

Name of financial incentives/specials 3 _____

Is this a one-time/annual or a monthly fee reduction? [ ] one-time/annual

[ ] monthly

If this is a reoccurring monthly fee reduction, how many months?

_____

What is the amount of this incentive or special? _____

Name of financial incentives/specials 4 _____

Is this a one-time/annual or a monthly fee reduction?

[ ] one-time/annual

[ ] monthly

If this is a reoccurring monthly fee reduction, how many months?

_____

What is the amount of this incentive or special? _____

SECTION 3: COMMENTS

Did the housing provider make any of the following comments about the building and/or surrounding neighborhood?

Noise

[ ] Quiet

[ ] Noisy

[ ] No comment

Safety

[ ] Safe / low crime

[ ] Dangerous / high crime

[ ] No comment

Schools

[ ] Good

[ ] Poor

[ ] No comment

Maintenance / Services

[ ] Good Services / Amenities

[ ] Poor Services / Amenities

[ ] No comment

Any other comments about this particular unit/building?

[ ] Yes

[ ] No

If yes, what was the comment? _____
_____

SECTION 4: FORM SUBMISSION

General comments _____
_____
_____

This form is complete [ ] Yes
[ ] No

Delete this record (TC use only) [ ] Yes
[ ] No

RENTAL NARRATIVE – DHH

Control _____
Tester ID Number _____

SECTION 1: NARRATIVE

This form is completed: [ ] Yes
[ ] No

Delete this record (TC use only) [ ] Yes
[ ] No

FOLLOW-UP CONTACT FORM – DHH

Control Number: _____
Tester Id Number: _____
Follow-up Form Sequence Number: _____

*Note if tester called the agent to cancel a scheduled appointment as directed by the Test Coordinator, please use the Tester Contact Form.

SECTION 1: DOCUMENTING FOLLOW-UP CONTACT

Was there any follow-up contact?
[ ] Yes
[ ] No

Who initiated contact?
[ ] Tester
[ ] Housing provider

Name of tester or alias _____
Name of housing provider/agent (if given) _____

Type of contact
[ ] Telephone call / voicemail
[ ] Postal mail
[ ] E-mail
[ ] Text Message

Date and time of contact

Day of the Week:
[ ] Monday
[ ] Tuesday
[ ] Wednesday
[ ] Thursday
[ ] Friday
[ ] Saturday
[ ] Sunday

Date (mm/dd/yyyy): _____
Time (hh:mm): _____
AM or PM:
[ ] AM
[ ] PM

What was the stated purpose of the contact? [select "yes" or "no" for all statements]

Agent called to confirm appointment. [ ] Yes [ ] No

Agent called to confirm cancellation of appointment
By tester. [ ] Yes [ ] No

Agent called to cancel appointment. [ ] Yes [ ] No

Agent wanted to know if tester would like to reschedule appointment.
[ ] Yes [ ] No

Personal message from housing provider thanking tester for calling and/or asking if tester has any additional questions. [ ] Yes [ ] No

Personal message from housing provider asking if tester is still interested in housing.
[ ] Yes [ ] No

Personal message from housing provider wanting to let tester know about more available units.
[ ] Yes [ ] No

Personal message from housing provider wanting to get more information from tester
[ ] Yes [ ] No

Automated message (call or e-mail) from housing provider thanking tester for calling or visiting and/or providing additional general information [ ] Yes [ ] No
Automated message asking tester to take part in a marketing survey or something similar
[ ] Yes [ ] No

Other [ ] Yes [ ] No
If Other, specify: _____

SECTION 2: FORM SUBMISSION

This form is complete [ ] Yes
[ ] No

Delete this record (for TC use only) [ ] Yes
[ ] No

ADVANCE CONTACT FORM – WHEELCHAIR STUDY

Control Number: _____

Advance Contact Form sequence: _____

Please complete one form for each evaluation or contact.

Which of the following are you documenting?

[ ] Completed Initial Site Evaluation

[ ] Advance Contact attempt

[ ] Completed Drive-By Evaluation

SECTION 1: INITIAL SITE EVALUATION

Name of Agent/Company/Complex (if known) _____

Address (if known) _____

_____

Did the advertisement indicate that the unit is accessible?

[ ] Yes

[ ] No

Please explain: _____

_____

Do you have prior knowledge that this site is ineligible for testing?

[ ] Yes

[ ] No

Please explain: _____

_____

In determining this site's accessibility, did you conduct internet research?

[ ] Yes

[ ] No

If yes, please list what source(s) you used: _____

_____

Based on your initial site evaluation, does this site appear to be accessible for people who use a wheelchair?

[ ] Yes

[ ] No

[ ] Unsure

**If you answered "yes" or if you are "unsure", please proceed to make advance contact and answer the questions in Section 2. If you answered "no", please proceed to answer questions in Section 3.*

SECTION 2: ADVANCE CONTACT

GENERAL INFORMATION

Who initiated contact?
[ ] Advance Caller/E-mailer/Test Coordinator
[ ] Housing Provider

With whom did you speak, if given: _____

Type of contact:
[ ] Phone
[ ] E-mail
[ ] Text Message

Phone Number of housing provider
(If called/text messaged only): _____

E-mail Address of housing provider
(If e-mailed only): _____

Day of the week that contact was made:
[ ] Monday
[ ] Tuesday
[ ] Wednesday
[ ] Thursday
[ ] Friday
[ ] Saturday
[ ] Sunday

Date (mm/dd/yyyy): ___/___/_____
Time (HH:MM): ___:___
AM or PM:
[ ] AM
[ ] PM

DISPOSITION OF THE ADVANCE CONTACT

Is this the final advance contact?
[ ] YES, and housing is eligible
[ ] YES, and housing is ineligible
[ ] NO, and will attempt to contact housing provider again

If this is NOT the final advance contact, why not?
[ ] No answer/kept ringing/went to voicemail
[ ] Was hung up on
[ ] Dropped call
[ ] Left message with a person who did not have information
[ ] Housing provider will call back
[ ] Told to call back later
[ ] Other

If other, please specify: _____

If this is the final advance contact and you have determined that this ad is ELIGIBLE, please enter information about each available unit (or type of unit, if applicable) below:

Address of available unit	# of Bedrooms	Rent Price	Date Available MM/DD/YY	

What are the office hours? _____

_____

Does the agent/rental office accept appointments?
[ ] Yes, you must make an appointment
[ ] Yes, you have the option of making an appointment or just dropping-in during office hours
[ ] No, but you may drop-in anytime during office hours

Verify the address to be visited: _____

_____

Did the housing provider give you any indication that the building or units were NOT accessible?
[ ] Yes
[ ] No

If yes, please explain: _____

_____

SECTION 3: DRIVE-BY SITE EVALUATION AND ACCESSIBILITY INFORMATION

In assessing this site's accessibility, did you physically drive by the premises?
[ ] Yes
[ ] No

Based on drive-by site evaluation, does this site appear to be accessible for people who use a wheelchair?
[ ] Yes
[ ] No

If housing was found to be inaccessible through the initial site evaluation, advance contact or the drive-by site evaluation, please select reason for inaccessibility:
[ ] Entrance to building has steps; no ramp
[ ] All units have exterior steps
[ ] All units are multi-story town houses

[ ] All units are built over individual garages
[ ] Route from parking to building lacks accessible curb cuts
[ ] Route from parking to building entrance has steps or steep slopes
[ ] Entrance to building has steep slopes without handrails or edge protection
[ ] Exterior door to building is too narrow (less than 32 inches wide)
[ ] Other

If other, specify: _____

Based on the initial site evaluation, advance contact or the drive-by site evaluation, is the housing ineligible for any reason?

[ ] Yes
[ ] No

If you have determined that ad is INELIGIBLE, what is the reason?

[ ] Housing provider could not be reached after 3 calls
[ ] No reply to e-mail sent w/in 24 hours
[ ] Telephone number incorrect/no longer in service
[ ] Invalid e-mail address
[ ] Automatic email response stating recipient is unavailable
[ ] Outside of target area for MSA
[ ] Located on Indian land (e.g., reservations, Rancherias, etc.)
[ ] Housing for older persons
[ ] Test was already conducted here/Testers have already visited housing provider
[ ] Another reason approved by Director of Field Operations
[ ] Electronic contact form only method to reach agent
[ ] Exceeds price range for MSA
[ ] Share situation
[ ] Single room occupancy
[ ] Apartment locator service charging up-front fee
[ ] Sublet
[ ] Temporary/short term rental
[ ] Public/subsidized housing development
[ ] No unit is available for rent
[ ] Owner does not have more than four units
[ ] Site is inaccessible

SECTION 4: FORM SUBMISSION

General Comments: _____

_____

This form is complete [ ] Yes
[ ] No

Delete this record (for TC use only) [ ] Yes
[ ] No

RENTAL ASSIGNMENT FORM – WHEELCHAIR STUDY

Site: [auto-fill]
Control # [auto-fill]
Tester Sequence: [auto-fill]
Tester ID # [auto-fill]

Transaction Type
(Either "Wheelchair" or "Non-wheelchair"): [auto-fill]

Target date and time of 1st appointment call: _____
Target date and time for scheduling appointment: _____

SECTION 1: INFORMATION ABOUT TESTER'S HOUSEHOLD FOR SPECIFIC TEST

Household Income	**Gross Monthly Income**	**Gross Annual Income**
Tester		
Spouse		
Total for Household		

Household Composition: [auto-fill]

Household Members	**Relationship (none, spouse, child)**	**Name**	**Sex**	**Age**
Person 2				
Person 3				
Person 4				
Person 5				

EMPLOYMENT INFORMATION

Tester's Current Occupation: _____
Name of Tester's Current Employer: _____
First line of tester's employer's address: _____
Second line of tester's Employer's address: _____
Length of employment at current job: _____

Name of spouse's current employer: _____
First line of spouse's employer's address: _____
Second line of spouse's employer's address: _____
Spouse's length of employment at current job: _____

CURRENT RENTAL HOUSING SITUATION

Amount of current rent: [auto-fill]

Years at Current Residence: _____

Type of Rental Agreement at Current Residence: [ ] Month-to-Month
[ ] Lease

Tester owns a car? [ ] Yes
[ ] No

Other characteristics:

Type of current housing: Renting
Credit standing: Excellent credit standing, no late payments
History of rent payment at current residence: Have always paid rent on time
Other: Non-smoking; no pets
Just started looking for housing

SECTION 2: ASSIGNED HOUSING

Information about Housing Provider

Name of housing provider
(Agent, company, and/or complex): [auto-fill]

Address of advertised unit: [auto-fill]
City [auto-fill]
State [auto-fill]
Zip code: [auto-fill]

Phone number: [auto-fill]
E-mail address: [auto-fill]

Name of advertisement source: [auto-fill]
Date of advertisement publication: [auto-fill]
Text of Advertisement: [auto-fill]
Advertisement URL: [auto-fill]

TYPE OF HOUSING TO BE REQUESTED

Maximum rental price: [auto-fill]
Move-in date to request: [auto-fill]
Number of bedrooms to request: [auto-fill]
Minimum number of bedrooms willing to accept: [auto-fill]

Type of unit [ ] Furnished
[ ] Unfurnished

AREA PREFERENCE

If you are pressed by the agent, you may state that you are looking in:

_____

Remember: You are always open to considering any areas recommended by the agent!

Reason for moving:

[ ] Lived at current apartment long enough, ready for a change
[ ] Have to move while landlord is remodeling
[ ] Landlord wants to rent to family member/friend
[ ] Owner selling building; want to start looking now
[ ] Ad sounded like something would be interested in
[ ] Would like to be settled before school starts
[ ] Renting from relative/friend; want own place
[ ] Currently subletting; tenant moving back
[ ] Have recently relocated to the area
[ ] No reason, just would like a new place

SECTION 3: TESTER'S INFORMATION

Tester Name:	[auto-fill]
Phone Number:	[auto-fill]
E-mail Address:	[auto-fill]
Tester's Race:	[auto-fill]
National Origin:	[auto-fill]
Tester's Gender:	[auto-fill]
Tester's Age:	[auto-fill]

For testers using wheelchairs only:

If asked, please state that your cause of disability is: [auto-fill]

General comments: _____

_____

Timestamp: [auto-fill]

Test released: [auto-fill]

INSTRUCTIONS FOR HDS-DISABILITIES APPOINTMENT CONTACTS – CONTROL TESTER

INSTRUCTIONS:

Please contact the housing provider listed on your Rental Assignment Form and request an appointment to view the rental housing that was advertised. If your Rental Assignment Form features a particular advertised unit, you will inquire about this unit. If your Rental Assignment Form provides a general advertisement, you will inquire about viewing units with your assigned number of bedrooms.

You should always contact the housing provider by telephone unless there is only an e-mail address listed, in which case you should contact the housing provider via e-mail. You do not need to make your appointment with any particular agent.

If you are contacting a housing provider via telephone:

- Place the call to the housing provider using your Google Voice number.

To make a call with Google Voice:

1. Log in to Google Voice at voice.google.com
2. On the left-hand side of the screen, click the red Call button, which will prompt a box to appear.
3. Type in the number you wish to call, and choose the forwarding phone you'd like to call with from the drop down menu.
4. Click Connect. Google will now call the forwarding phone you selected in Step 3.
5. Pick up the call when it rings. Google will connect you with the number you typed in Step 3.
6. Talk!

To make a call with Google Voice from one of your Google Voice forwarding phones:

1. Choose one of your Google Voice forwarding phones, and dial your Google Voice number.
2. When the voicemail begins, hit *
3. Enter voicemail pin, and, when prompted, press 2 to make an outgoing call.
4. Dial the number you wish to call.
5. Google Voice will connect you.

- If you cannot reach a housing provider on your first call, leave a message and wait up to 24 hours for a response. In your message, provide your Google Voice number and ask the housing provider to call you back. If you do not receive a response within 24 hours, call once more. If you cannot reach someone during this second call, do not leave a message.
- If you reach the housing provider (or if the housing provider returns your call), express interest in and ask for an appointment to view the advertised rental housing from your Rental Assignment Form. If the housing provider agrees to show you the advertised housing, thank the agent and schedule an appointment. If a housing provider suggests that you view other units in addition to the advertised housing, express interest in viewing units that meet your needs as dictated by your Assigned Housing characteristics.
- If the agent informs you that the advertised housing is not available, ask the agent if any other units are available, and make an appointment to view any unit(s) that:
    1. Have at least the minimum of bedrooms you are willing to consider
    2. Are within your price range; and
    3. Are available up to one week before or after your assigned move-in date
- If the agent indicates that absolutely no housing is available, thank the agent for his/her assistance and ask for the agent's name if it has not yet been provided. Notify the Test Coordinator after your contact with the agent.
- If possible, avoid having an extended or lengthy conversation about rental housing options, your qualifications, or your housing needs over the phone. If necessary, you can always say that you are pressed for time and that you would prefer to discuss these details when you visit the office.
- Some testers have reported that housing providers use text messages to communicate. If you receive a text message from a housing provider, you may respond with a text message. However, you should never initiate communication with a housing provider via text. Always document any message from a housing provider with an Appointment Contact Form. If you ever have any questions about how to record a message, ask your Test Coordinator.
- Always thank the person you speak with for their assistance and ask for their name if it has not been provided by the end of your call.

If you are contacting a housing provider via e-mail:

- Your Test Coordinator must approve all text in appointment contact emails.
- Use only the e-mail address assigned to you for use on HDS tests.
- Follow all above protocol listed above phone contact section.

For both telephone and e-mail contact:

- If you are able to make an appointment, please remember to obtain the exact date and time of your appointment along with the name of the person who will be meeting with you (if applicable). Also, make sure you have the exact address and directions to the rental office.
- Record every contact you make on the Appointment Contact Form as part of your effort to obtain an appointment.

INSTRUCTIONS FOR HDS-DISABILITIES SITE VISITS- CONTROL TESTER

INSTRUCTIONS:

- Always inquire about and ask to view the housing you discussed during your appointment call. Additionally, ALWAYS inquire about and ask to view any other units that align with your Assigned Housing characteristics. During a site visit, Assigned Housing includes units that:
    1. Have at least the minimum number of bedrooms you are willing to consider
    2. Are within your price range
    3. Are available up to one week before or after your move-in date
- There are eleven (11) crucial pieces of information that must be obtained for every unit that you view or are told about during a rental visit. They are listed below:
    1. Exact address (including the unit number)
    2. Number of bedrooms
    3. Rent ($/month)
    4. Security deposit (if any)
    5. Other fees (if any)
    6. Lease length (ALL available lease lengths)
    7. Date of availability
    8. Which utilities are included in rent, if any (list)
    9. Whether an application is required (Y/N)
    10. Whether an application fee must accompany a completed application (Y/N, if Yes, how much?)
    11. Whether a credit check is required (Y/N)
- You are responsible for noting the presence of steps and high entry thresholds around the exterior of the building, throughout interior areas, and within the unit itself. These observations will ultimately be recorded on the Site Visit Report Form and may also be included in your narrative.
- If you are asked to sign a guest log or complete a guest card, you may do so using the information from your Rental Assignment Form, making sure to use your HDS-assigned email and Google Voice number.
- Do not ask for or complete a rental application. If the agent offers you an application, you should agree to take it with you.
- Make sure to obtain the name of the rental agent.
- Check that you have recorded the unit numbers of all units viewed or recommended to you.
- Allow the rental agent to suggest any follow-up contact. You should not initiate, suggest or offer to make any arrangements for future contact with the rental agent. As a tester, you may thank a rental agent for his or her assistance, but you must refrain from suggesting that you will get back to the agent or that the agent should contact you.
- Notify your Test Coordinator upon completion of a site visit.

INSTRUCTIONS FOR HDS-DISABILITIES APPOINTMENT CONTACTS – TESTERS WHO USE WHEELCHAIRS

INSTRUCTIONS:

Please contact the housing provider listed on your Rental Assignment Form and request an appointment to view the rental housing that was advertised. If your Rental Assignment Form features a particular advertised unit, you will inquire about this unit. If your Rental Assignment Form provides a general advertisement, you will inquire about viewing units with your assigned number of bedrooms.

At the outset of your call, you must mention that you use a wheelchair. You should always contact the housing provider by telephone unless there is only an e-mail address listed, in which case you should contact the housing provider via e-mail. You do not need to make your appointment with any particular agent.

If you are contacting a housing provider via telephone:

- Place the call to the housing provider using your Google Voice number.

To make a call with Google Voice through a computer:

1. Log in to Google Voice at voice.google.com
2. On the left-hand side of the screen, click the red Call button, which will prompt a box to appear.
3. Type in the number you wish to call, and choose the forwarding phone you'd like to call with from the drop down menu.
4. Click Connect. Google will now call the forwarding phone you selected in Step 3.
5. Pick up the call when it rings. Google will connect you with the number you typed in Step 3.
6. Talk!

To make a call with Google Voice from one of your Google Voice forwarding phones:

1. Choose one of your Google Voice forwarding phones, and dial your Google Voice number.
2. When the voicemail begins, hit *
3. Enter voicemail pin, and, when prompted, press 2 to make an outgoing call.
4. Dial the number you wish to call.
5. Google Voice will connect you.

- If you cannot reach a housing provider on your first call, leave a message and wait up to 24 hours for a response. In your message, provide your Google Voice number and ask the housing provider to call you back. **You must mention that you use a wheelchair in your message.** If you do not receive a response within 24 hours, call once more. If you cannot reach someone during this second call, do not leave a message.
- If you reach the housing provider (or if the housing provider returns your call), express interest in and ask for an appointment to view the advertised rental housing from your Rental Assignment Form. If the housing provider agrees to show you the advertised housing, thank the agent and schedule an appointment. If a housing provider suggests that you view other units in addition to the advertised housing, express interest in viewing units that meet your needs as dictated by your Assigned Housing characteristics.
- If the agent informs you that the advertised housing is not available, ask the agent if any other units are available, and make an appointment to view any unit(s) that:
    1. Have at least the minimum of bedrooms you are willing to consider;
    2. Are within your price range; and
    3. Are available up to one week before or after your assigned move-in date.
- If the agent indicates that absolutely no housing is available, thank the agent for his/her assistance and ask for the agent's name if it has not yet been provided. Notify the Test Coordinator after your contact with the agent.
- If a housing provider mentions a specific barrier to building entry such as a step or narrow doorway, you will ask if there is an alternate method of entry. If an alternate method of entry is possible, proceed to make a site visit appointment. If the housing provider indicates that the building is not at all accessible, thank the provider for his/her time and end the call.
- If a housing provider indicates that the building is accessible, but that the lobby area or the unit is not accessible, proceed to make a site visit appointment, and suggest that a modification might be possible.
- If a housing provider suggests that you consider another property, proceed to make an appointment for the newly suggested property, so long as the newly suggested property is within the same management company or family of properties. If you make such an arrangement, or if you are unsure about the eligibility of a newly suggested property, notify your Test Coordinator.
- If possible, avoid having an extended or lengthy conversation about rental housing options, your qualifications, or your housing needs over the phone. If necessary, you can always say that you are pressed for time and that you would prefer to discuss these details when you visit the office.

- Some testers have reported that housing providers use text messages to communicate. If you receive a text message from a housing provider, you may respond with a text message. However, you should never initiate communication with a housing provider via text. Always document any message from a housing provider with an Appointment Contact Form. If you ever have any questions about how to record a message, ask your Test Coordinator.
- Always thank the person you speak with for his/her assistance and ask for his/her name if it has not been provided by the end of your call.

If you are contacting a housing provider via e-mail:

- Your Test Coordinator must approve all text in appointment contact emails.
- Use only the e-mail address assigned to you for use on HDS tests.
- Follow all protocols listed above phone contact section.

For both telephone and e-mail contact:

- If you are able to make an appointment, please remember to obtain the exact date and time of your appointment along with the name of the person who will be meeting with you (if applicable). Also, make sure you have the exact address and directions to the rental office.
- Record every contact you make on the Appointment Contact Form as part of your effort to obtain an appointment.

INSTRUCTIONS FOR HDS-DISABILITIES SITE VISITS- TESTERS WHO USE WHEELCHAIRS

INSTRUCTIONS:

- Always inquire about and ask to view the housing you discussed during your appointment call. Additionally, ALWAYS inquire about and ask to view any other units that align with your Assigned Housing characteristics. During a site visit, Assigned Housing includes units that:
    1. Have at least the minimum number of bedrooms you are willing to consider
    2. Are within your price range
    3. Are available up to one week before or after your move-in date
- There are eleven (11) crucial pieces of information that must be obtained for every unit that you view or are told about during a rental visit. They are listed below:
    1. Exact address (including the unit number)
    2. Number of bedrooms
    3. Rent ($/month)
    4. Security deposit ($, if any)
    5. Other fees (if applicable, $ and purpose)
    6. Lease length (ALL available lease lengths)
    7. Date of availability
    8. Which utilities are included in rent, if any (list)
    9. Whether an application is required (Y/N)
    10. Whether an application fee must accompany a completed application (Y/N, if Yes, how much?)
    11. Whether a credit check is required (Y/N)
- Toward the end of the visit, after gathering basic rental information, you will request permission to make a reasonable modification at your own expense. If asked, you will indicate that you would restore a modified unit to its original condition upon moving out. Modification requests may pertain to interior areas leading to the unit (lobby, hallways, and doors) or to the unit itself. You will NOT request exterior building modifications relating to building entry or accessibility. You may request modifications from the following options:
    1. Interior areas leading to the unit
        - Install a lever handle on doors
        - Install interior ramp to make elevators/hallways accessible from the lobby
    2. Available and inspected units
        - Lower thresholds in doorways that are difficult to roll over
        - Install a lever handle on doors
        - Reverse the swing of the entry door
        - Lower light switches
        - Adjust height of outlets
        - Lower thermostat

    - Replace thick-pile carpeting with low-pile carpeting, tile, or hardwood flooring
    - Install grab bars around toilet and/or in shower
    - Replace standard shower with roll-in shower
    - Remove cabinet under bathroom sink
    - Lower kitchen cabinets
    - Replace standard kitchen cabinet shelves with revolving or extending shelves
    - Remove cabinets under the kitchen sink
    - Install ramp at entrance or within unit
- The first modification request that you will make should relate to interior areas leading to the unit, *if such a modification is needed.* You will then make at least one, but no more than three, modification requests for each unit viewed, unless no modification is needed to a unit. Note: If there is a modification request that would apply across all units viewed (i.e. every unit has an identically high entry threshold) you should make this request one time and count it as one of the allowed three requests for each unit.
- It is likely that some housing providers will not have an immediate yes or no answer about whether the requested modifications will be allowed. If you do not receive an answer about modifications during the site visit AND do not hear from the housing provider within three days following the site visit, you must contact the provider for an answer. If you are unable to reach the housing provider on the first attempt, you may leave a message. You will only initiate one attempt to reach the housing provider. Any contact made by either the tester or the housing provider following the site visit must be recorded on a Follow-Up Contact Form. Responses to interior area modification requests must be recorded on the Site Visit Report Form. Responses to unit modification requests must be recorded on Available Rental Unit Forms.
- If you are asked to sign a guest log or complete a guest card, you may do so using the information from your Rental Assignment Form, making sure to use your HDS-assigned email and Google Voice number.
- Do not ask for or complete a rental application. If the agent offers you an application, you should agree to take it with you.
- Make sure to obtain the name of the rental agent.
- Check that you have recorded the unit numbers of all units viewed or recommended to you.
- Allow the rental agent to suggest any follow-up contact. You should not initiate, suggest, or offer to make any arrangements for future contact with the rental agent. As a tester, you may thank a rental agent for his or her assistance, but you must refrain from suggesting that you will get back to the agent or that the agent should contact you.
- Notify your Test Coordinator upon completion of a site visit.

APPOINTMENT CONTACT FORM- WHEELCHAIR STUDY

Tester ID: _____
Control Number: _____
Appointment Contact Form Sequence: _____

SECTION 1: GENERAL INFORMATION

Who initiated contact?
[ ] Tester
[ ] Housing Provider

Name of housing provider, if given: _____

Type of contact:
[ ] Phone
[ ] E-mail
[ ] Text Message

Phone number of housing provider
(If called/text messaged only): _____

E-mail address of housing provider (if e-mailed only): _____

Day of the Week Contact was Attempted:
[ ] Monday
[ ] Tuesday
[ ] Wednesday
[ ] Thursday
[ ] Friday
[ ] Saturday
[ ] Sunday

Date (mm/dd/yyyy): ___/___/_____
Time (hh:mm): ___:___
AM or PM:
[ ] AM
[ ] PM

SECTION 2: DISPOSITION OF CONTACT

Was appointment scheduled?
[ ] NO
[ ] YES, appointment was scheduled
[ ] YES, appointment was confirmed (previously scheduled)

If appointment was NOT scheduled, why not?
[ ] No answer; left message
[ ] No answer/kept ringing; did not leave message
[ ] Was hung up on
[ ] Dropped call
[ ] Left message with a person who did not have information
[ ] Told housing provider will call back
[ ] Told to call back later

[ ] Housing provider refused to make appointment
[ ] Housing provider cancelled appointment; suggested rescheduling
[ ] Housing provider cancelled appointment; did not reschedule
[ ] No response within 24 hours to e-mail inquiry sent
[ ] Told to call a different location
[ ] Other

If other, please specify: _____

If you were unable to schedule an appointment, complete below:

For testers using wheelchairs only:

If housing provider refused to make an appointment, did the housing provider indicate that there were no accessible units available?
[ ] Yes
[ ] No

If housing provider refused to make an appointment, did the housing provider indicate that the building entry is inaccessible for people using wheelchairs?
[ ] Yes
[ ] No

If you were told the main building entry is inaccessible, did you ask about any alternate building entrances that could allow access for people using wheelchairs?
[ ] Yes
[ ] No

If Yes, what were you told?
[ ] There are no alternate building entrances
[ ] There are alternate building entrances, but none will allow access for people using wheelchairs
[ ] Other

If Other, please describe: _____

If you were told that the building lobby/hallways are inaccessible or there are no accessible units available, did you suggest that a modification to building lobby or to available units could be made?
[ ] Yes
[ ] No

If Yes, please describe: _____

For all testers:

If you were unable to make an appointment, did the housing provider direct you to any other units or buildings that are not affiliated with the housing provider/management company?
[ ] Yes
[ ] No

If an appointment was scheduled/confirmed, complete below:

Day of the Week:
[ ] Monday

[ ] Tuesday
[ ] Wednesday
[ ] Thursday
[ ] Friday
[ ] Saturday
[ ] Sunday

Date (mm/dd/yyyy): ___/___/_____
Time (hh:mm): ___:___
AM or PM: [ ] AM
[ ] PM

Name of person you have arranged to meet with: _____

Location to meet (housing provider's office, address of specific home, other):
_____
_____

Additional Information: _____
_____

For testers using wheelchairs only:

Did housing provider make any comments about your ability to live independently?
[ ] Yes
[ ] No

Did the housing provider ask whether your spouse has a disability?
[ ] Yes
[ ] No

Did the housing provider ask about your source of income?
[ ] Yes
[ ] No

Did the housing provider make any comments about not wanting to rent to people using wheelchairs?
[ ] Yes
[ ] No

If Yes, please specify: _____

General comments (Testers using wheelchairs: please note when during the appointment call you identified as a person using a wheelchair):
_____
_____

SECTION 3: FORM SUBMISSION

This form is complete: [ ] Yes
[ ] No

Delete this record (for TC use only): [ ] Yes
[ ] No

SITE VISIT REPORT FORM – WHEELCHAIR STUDY

Site: _____
CONTROL #: _____
TESTER ID NUMBER: _____

SECTION 1: INFORMATION ABOUT HOUSING PROVIDER

Name of Test Site (Agent/Company/Complex, if known): _____

Address of leasing office _____
Suite number (if applicable): _____
City: _____
State: _____
Zip Code: _____

SECTION 2: DATE AND TIME OF SITE VISIT:

Date (mm/dd/yyyy): ___/__/_____
Day of Week:
[ ] Monday
[ ] Tuesday
[ ] Wednesday
[ ] Thursday
[ ] Friday
[ ] Saturday
[ ] Sunday

Appointment Time (hh:mm): __ __:__ __
AM or PM:
[ ] AM
[ ] PM

Time began (office arrival)
Arrival time (hh:mm): ___:___
AM or PM:
[ ] AM
[ ] PM

Time greeted by staff/agent (if applicable)
Time (hh:mm): ___:___
AM or PM:
[ ] AM
[ ] PM

Time began meeting with agent (if applicable)
Time (hh:mm): ___:___
AM or PM:
[ ] AM
[ ] PM

Time ended (departure)
Departure Time (hh:mm): ___:___
AM or PM:
[ ] AM
[ ] PM

Did a companion or personal aide assist you with transportation?

[ ] Yes
[ ] No

Did a companion or personal aide assist you with entering the building?

[ ] Yes
[ ] No

SECTION 3: INFORMATION ON PERSONS WITH WHOM YOU HAD CONTACT DURING YOUR VISIT

Name: _____

Position: _____

Race/Ethnicity:

[ ] White
[ ] Black
[ ] Hispanic
[ ] Asian/Pacific Islander
[ ] American Indian
[ ] Don't Know
[ ] Other

Sex/Gender:

[ ] M
[ ] F

Age Group:

[ ] 18-30
[ ] 31-45
[ ] 46-65
[ ] Over 65

Primary Person who provided info:

[ ] Yes
[ ] No

Did this person have a discernible disability?

[ ] Yes
[ ] No

If yes, please specify: _____

Name: _____

Position: _____

Race/Ethnicity:

[ ] White
[ ] Black
[ ] Hispanic
[ ] Asian/Pacific Islander
[ ] American Indian
[ ] Don't Know
[ ] Other

Gender:
[ ] M
[ ] F

Age Group:
[ ] 18-30
[ ] 31-45
[ ] 46-65
[ ] Over 65

Primary Person who provided info:
[ ] Yes
[ ] No

Did this person have a discernible disability?
[ ] Yes
[ ] No

If yes, please specify: _____

Name: _____
Position: _____

Race/Ethnicity:
[ ] White
[ ] Black
[ ] Hispanic
[ ] Asian/Pacific Islander
[ ] American Indian
[ ] Don't Know
[ ] Other

Gender:
[ ] M
[ ] F

Age Group:
[ ] 18-30
[ ] 31-45
[ ] 46-65
[ ] Over 65

Primary Person who provided info:
[ ] Yes
[ ] No

Did this person have a discernible disability?
[ ] Yes
[ ] No

If yes, please specify: _____

Were you able to meet with an agent to discuss housing options?
[ ] Yes
[ ] No

If No, why not? _____

Did you meet with the agent:

[ ] Individually (i.e., one-on-one)
[ ] In a group (i.e., with at least one other homeseeker)

SECTION 4: AVAILABILITY OF UNITS

How many units were you told were available that had your assigned number of bedrooms, were available when you need them, and were at or below your price max?

_____

Whether you asked or the agent offered, were you told that any other units were available?

[ ] Yes
[ ] No

(Other units had at least your minimum number of bedrooms than what you were assigned, were at or below your price max, and were available when you need them.)

If Yes, how many other units were you told were available?

_____

How many TOTAL units did the agent tell you were available?

_____

If no units were available, were you offered to be placed on a waiting list?

[ ] Yes
[ ] No

How many TOTAL units did you inspect? _____

(Model units inspected may be included in this total if they represent an actual available unit.)

For testers using wheelchairs only:

Were you referred to any of the following during your visit?

[ ] Assisted Living
[ ] Nursing Home
[ ] Group Home
[ ] Low Income Housing
[ ] Other (specify): _____
[ ] None of the above

SECTION 5: APPLICATION INFORMATION

Did the agent inform you that any of the following was necessary for the application process?

Application form?

[ ] Yes
[ ] No

Credit check?

[ ] Yes
[ ] No

Co-signer? [ ] Yes
[ ] No

Criminal background check? [ ] Yes
[ ] No

Did the agent ask you to complete an application during your visit?
[ ] Yes
[ ] No

Did the agent give you an application to take with you?
[ ] Yes
[ ] No

SECTION 6: QUALIFICATIONS

Please indicate if the following pieces of personal information were volunteered by you, requested by the agent, exchanged in an earlier contact, or not obtained by the agent.

	I volunteered	Agent Requested	Exchanged in earlier contact	Agent did not obtain
a. Your marital status				
b. Your family size				
c. Your or spouse's income				
d. Your or spouse's source of income				
e. Your or spouse's occupation				
f. Your or spouse's length of employment				
g. Your spouse's disability status				
h. Your credit standing				
i. Your rent history				
j. Your address/phone number				
k. Other:				

If Other, specify: _____

SECTION 7: COMMENTS

Did the agent make any comments on your qualifications to rent?
[ ] Yes
[ ] No

If yes, what was the comment? _____

Did the agent comment on or make reference to any of the following:
Fair Housing Laws, Equal Housing Opportunity, Open Housing Ordinance, or Anti-discrimination Laws?

[ ] Yes
[ ] No

If Yes, what was the comment or reference? _____
_____

Did the agent comment on any of the following, and if so, what was the nature of the comment?

Housing accessibility? [ ] Yes
[ ] No
If yes, what was the comment? _____
_____

Disability or persons with disabilities? [ ] Yes
[ ] No
If yes, what was the comment? _____
_____

For testers using wheelchairs only, did the agent comment on any of the following, and if so, what was the comment?

Nature/severity of your disability? [ ] Yes
[ ] No
If yes, what was the comment? _____
_____

Liability insurance as a suggestion or requirement to rent?

[ ] Yes
[ ] No
If yes, what was the comment? _____
_____

Your ability to live independently? [ ] Yes
[ ] No
If yes, what was the comment? _____
_____

SECTION 8: ACCESSIBILITY

For Testers using wheelchairs only:

Did you have to request that the agent meet you at an alternate location to discuss your housing options (outside, at a nearby café, etc.) due to accessibility barriers?

[ ] Yes

[ ] No

Did the agent assist you with writing down key information about available housing?

[ ] Yes
[ ] No

Did you request reasonable modifications for any available units or the building?

[ ] Yes
[ ] No

If you requested to make any reasonable modifications to the lobby area/hallways, please indicate which of the following you requested:

Install a lever handle on door

[ ] Yes
[ ] No

Install interior ramp to make elevators/hallways accessible from the lobby

[ ] Yes
[ ] No

When you asked the housing provider if you could make the modification to the lobby area/hallway, what were you told? (*Please answer for each lobby area/hallway modification request that you asked about.*)

[ ] The housing provider said that I could make the modification and pay for it myself
[ ] The housing provider would make the modification, but I would have to pay for it
[ ] The housing provider would make the modification at no cost to me
[ ] The housing provider would not allow me to make the modification
[ ] The housing provider had to check with someone else to see if the modification could be made
[ ] The housing provider had to check to see how much the modification costs
[ ] The housing provider did not know if the modification could be made, and did not offer to find out
[ ] Something else (please explain):
_____

For Control Testers only:
Please answer the following questions regarding the site's accessibility:

Were there steps leading to the building entry and no ramp?

[ ] Yes
[ ] No

Were there steps and no ramp between the building entry/lobby or hallway and an elevator?

[ ] Yes
[ ] No

Do all units have exterior steps leading to the entryway?

[ ] Yes
[ ] No

Were there interior steps leading to the unit and no ramp?

[ ] Yes
[ ] No

Was there a high threshold in the doorway leading into the unit?

[ ] Yes
[ ] No

Are all units multi-story town houses?

[ ] Yes
[ ] No

Are all units built over garages?

[ ] Yes
[ ] No

Did the route from parking to the building lack curb cuts?

[ ] Yes
[ ] No

Did the route from the sidewalk or parking area to the building entrance have steps or steep slopes, without handrails or edge protection?

[ ] Yes
[ ] No

Did the exterior door to the building appear too narrow for a wheelchair to pass through?

[ ] Yes
[ ] No

Did you inspect <u>at least one unit</u> that could be reached, entered and potentially lived in by a person using a wheelchair, either in its present condition or with certain structural modifications to make the unit more accessible?

[ ] Yes
[ ] No

SECTION 9: MATERIALS RECEIVED

Did the agent provide you with any of the following items THAT YOU DID NOT ASK FOR? (check all that apply)

Business Card

[ ] Yes
[ ] No

Brochure

[ ] Yes
[ ] No

Listings

[ ] Yes
[ ] No

Floor Plan

[ ] Yes
[ ] No

Rental/Lease Agreement [ ] Yes
[ ] No

Gift [ ] Yes
[ ] No

Food or beverage [ ] Yes
[ ] No

Other [ ] Yes
[ ] No

If Other, specify: _____
_____

SECTION 10: ARRANGEMENTS FOR FUTURE CONTACT

Were arrangements for future contact made? [ ] Yes
[ ] No

If arrangements for future contact were made, please specify:

The agent said that he/she would contact you [ ] Yes
[ ] No

The agent invited you to call him/her [ ] Yes
[ ] No

Other (specify): [ ] Yes
[ ] No

Specify: _____

SECTION 11: FORM SUBMISSION

This form is complete: [ ] Yes
[ ] No

Did you receive assistance from a companion or personal aide in completing form?
[ ] Yes
[ ] No

Delete this record (for TC use only) [ ] Yes
[ ] No

AVAILABLE RENTAL UNIT FORM – WHEELCHAIR STUDY

Control Number: _____
Tester ID Number: _____
Available Unit Form Sequence: _____

SECTION 1: GENERAL INFORMATION ABOUT AVAILABLE UNIT

Address of Available Unit
Number and Street _____
Unit Number _____
City _____
State _____
Zip Code _____

Type of Building:
[ ] Apartment Building - 4 or Fewer Units
[ ] Apartment Building - 5 or more
[ ] Single-Family Home
[ ] Mobile Home

How many floors are in the building? _____
On which floor is the available unit located? _____

Number of bedrooms: _____
Number of bathrooms: _____
Date Available (mm/dd/yyyy): _____

Length of Lease? [check all that apply]
[ ] Month-to-month
[ ] Three month
[ ] Six month
[ ] One year
[ ] Two year
[ ] Other

If other, please specify: _____

Did you inspect a unit during your site visit?
[ ] Yes
[ ] No

What type of unit did you inspect?
[ ] Actual available unit
[ ] Model unit
[ ] Other unit similar to the actual available unit

Did the unit have any of the following INTERIOR physical conditions?

Broken plaster or peeling paint:
[ ] Yes
[ ] No

Discoloration of a floor, wall or ceiling due to water leakage:
[ ] Yes

[ ] No

Exposed wiring [ ] Yes

[ ] No

Did the building's EXTERIOR have any of the following physical conditions?

Sagging roof [ ] Yes

[ ] No

Broken window [ ] Yes

[ ] No

Boarded up windows [ ] Yes

[ ] No

SECTION 2: COSTS AND INCENTIVES

Costs: Please carefully record all costs related to renting this available unit.

What is the rent per month? _____

Is a security deposit and/or surety bond required? [ ] Yes – choice of security deposit or surety bond

[ ] Yes – security deposit

[ ] Yes – surety bond

[ ] No

If yes, please report the amount accordingly:

Security deposit amount _____

Surety bond amount _____

Were you told about any additional mandatory fees? [ ] Yes

[ ] No

Name of first mandatory fee: [ ] Admin/processing fee

[ ] Agent's/broker's/realtor's/ALS fee

[ ] Amenity fee (access to gym, pool, etc.)

[ ] Application fee (total per household)

[ ] Cleaning/pest control fee

[ ] Credit/background check fee (separate from application fee)

[ ] HOA/condo fee

[ ] Key/lock/access fee (for first set)

[ ] Maintenance fee

[ ] Move-in fee (total per household)

[ ] Parking/garage fee

[ ] Township/village/borough fee

[ ] Other

If other, please specify: _____

Is this a one-time/annual or monthly fee? [ ] One-time/annual

[ ] Monthly

Amount of fee _____

Name of second mandatory fee: [ ] Admin/processing fee

[ ] Agent's/broker's/realtor's/ALS fee

[ ] Amenity fee (access to gym, pool, etc.)

[ ] Application fee (total per household)
[ ] Cleaning/pest control fee
[ ] Credit/background check fee (separate from application fee)
[ ] HOA/condo fee
[ ] Key/lock/access fee (for first set)
[ ] Maintenance fee
[ ] Move-in fee (total per household)
[ ] Parking/garage fee
[ ] Township/village/borough fee
[ ] Other If other, please specify:
_____

Is this a one-time/annual or monthly fee?
[ ] One-time/annual
[ ] Monthly

Amount of fee
_____

Name of third mandatory fee:
[ ] Admin/processing fee
[ ] Agent's/broker's/realtor's/ALS fee
[ ] Amenity fee (access to gym, pool, etc.)
[ ] Application fee (total per household)
[ ] Cleaning/pest control fee
[ ] Credit/background check fee (separate from application fee)
[ ] HOA/condo fee
[ ] Key/lock/access fee (for first set)
[ ] Maintenance fee
[ ] Move-in fee (total per household)
[ ] Parking/garage fee
[ ] Township/village/borough fee
[ ] Other

If other, please specify:
_____

Is this a one-time/annual or monthly fee?
[ ] One-time/annual
[ ] Monthly

Amount of fee
_____

Incentives: Please carefully record all incentives related to renting this available unit.

Were you told about any incentives available to you if you decide to apply and rent the unit right away?
(Do not include incentives available if you refer a friend or if you rent the apartment before your assigned move-in date. If the agent offered a free month's rent amortized over the length of the lease, record this only as a free month's rent.)
[ ] Yes
[ ] No

Name of first incentive:
[ ] Gift card/cash back
[ ] Reduced/waived admin/processing fee
[ ] Reduced/waived agent's/Broker's/Realtor's/ALS fee

[ ] Reduced/waived amenity fee
[ ] Reduced/waived application fee (total per household)
[ ] Reduced/waived cleaning/pest control fee
[ ] Reduced/waived credit/background check fee (separate from application fee)
[ ] Reduced/waived HOA/condo fee
[ ] Reduced/waived key/lock/access fee (for first set)
[ ] Reduced/waived maintenance fee
[ ] Reduced/waived move-in fee (total per household)
[ ] Reduced/waived parking/garage fee
[ ] Reduced/waived rent (free months)
[ ] Reduced/waived rent (monthly reduction)
[ ] Reduced/waived security deposit
[ ] Reduced/waived township/village/borough fee
[ ] Other

If other, please specify: _____

Is this a one-time/annual or monthly incentive?
[ ] One-time/annual
[ ] Monthly

Amount of incentive: _____

Name of second incentive:
[ ] Gift card/cash back
[ ] Reduced/waived admin/processing fee
[ ] Reduced/waived agent's/Broker's/Realtor's/ALS fee
[ ] Reduced/waived amenity fee
[ ] Reduced/waived application fee (total per household)
[ ] Reduced/waived cleaning/pest control fee
[ ] Reduced/waived credit/background check fee (separate from application fee)
[ ] Reduced/waived HOA/condo fee
[ ] Reduced/waived key/lock/access fee (for first set)
[ ] Reduced/waived maintenance fee
[ ] Reduced/waived move-in fee (total per household)
[ ] Reduced/waived parking/garage fee
[ ] Reduced/waived rent (free months)
[ ] Reduced/waived rent (monthly reduction)
[ ] Reduced/waived security deposit
[ ] Reduced/waived township/village/borough fee
[ ] Other

If other, please specify: _____

Is this a one-time/annual or monthly incentive?
[ ] One-time/annual
[ ] Monthly

Amount of incentive: _____

Name of third incentive:

[ ] Gift card/cash back
[ ] Reduced/waived admin/processing fee
[ ] Reduced/waived agent's/Broker's/Realtor's/ALS fee
[ ] Reduced/waived amenity fee
[ ] Reduced/waived application fee (total per household)
[ ] Reduced/waived cleaning/pest control fee
[ ] Reduced/waived credit/background check fee (separate from application fee)
[ ] Reduced/waived HOA/condo fee
[ ] Reduced/waived key/lock/access fee (for first set)
[ ] Reduced/waived maintenance fee
[ ] Reduced/waived move-in fee (total per household)
[ ] Reduced/waived parking/garage fee
[ ] Reduced/waived rent (free months)
[ ] Reduced/waived rent (monthly reduction)
[ ] Reduced/waived security deposit
[ ] Reduced/waived township/village/borough fee
[ ] Other

If other, please specify: _____

Is this a one-time/annual or monthly incentive?

[ ] One-time/annual
[ ] Monthly

Amount of incentive: _____

SECTION 3: COMMENTS

Did the housing provider make any of the following comments about the building and/or surrounding neighborhood?

Noise

[ ] Quiet
[ ] Noisy
[ ] No comment

Safety

[ ] Safe / low crime
[ ] Dangerous / high crime
[ ] No comment

Schools

[ ] Good
[ ] Poor
[ ] No comment

Maintenance / Services

[ ] Good Services / Amenities
[ ] Poor Services / Amenities
[ ] No comment

Any other comments about this particular unit/building?

[ ] Yes
[ ] No

If yes, what was the comment? _____

_____

For testers using wheelchairs only: Related to this unit, did the housing provider make any comments regarding any of the following:

Safety risk/liability posed by tester? [ ] Yes
[ ] No

If yes, what was the comment? _____
_____

Self-reliance/mobility of tester? [ ] Yes
[ ] No

If yes, what was the comment? _____
_____

Prior to your asking about reasonable modifications, did the housing provider volunteer any information about the unit's accessibility?

[ ] Yes
[ ] No

If yes, then what did they volunteer?

[ ] Unit is accessible
[ ] Unit is not accessible; no mention of modifications
[ ] Unit is not accessible; mention of modifications
[ ] Unsure of accessibility; no mention of modifications
[ ] Unsure of accessibility; mention of modifications
[ ] Other

If other, please describe: _____

SECTION 4: REASONABLE MODIFICATIONS (FOR TESTERS USING WHEELCHAIRS ONLY)

Which of the following reasonable modifications did you request for this unit?

Available and Inspected Units:

Install a lever handle on door [ ] Yes
[ ] No

Lower thresholds in doorways that are difficult to roll over
[ ] Yes
[ ] No

Reverse the swing of the entry door [ ] Yes
[ ] No

Lower light switches [ ] Yes
[ ] No

Reposition outlets [ ] Yes
[ ] No

Lower thermostat [ ] Yes
[ ] No

Replace thick-pile carpeting with low-pile carpeting, tile, or hardwood flooring
[ ] Yes

[ ] No

Install grab bars around toilet and/or in shower [ ] Yes

[ ] No

Replace standard shower with roll-in shower [ ] Yes

[ ] No

Remove cabinet under bathroom sink [ ] Yes

[ ] No

Lower kitchen cabinets [ ] Yes

[ ] No

Replace standard kitchen cabinet shelves with revolving or extending shelves

[ ] Yes

[ ] No

Remove cabinets under the kitchen sink [ ] Yes

[ ] No

Install ramp at entrance or within unit [ ] Yes

[ ] No

When you asked the housing provider if you could make the modification, what were you told? (*Please answer for each modification option listed above that you asked about.*)

[ ] I could make the modification myself and pay for it myself

[ ] The housing provider would make the modification, but I would have to pay for it

[ ] The housing provider would make the modification at no cost to me

[ ] The housing provider would not allow the modification

[ ] The housing provider had to check with someone else to see if the modification would be allowed

[ ] The housing provider had to check on the modification costs

[ ] The housing provider did not know if the modification could be made, and did not offer to find out

[ ] Something else (please explain):

_____

Did the housing provider tell you that any conditions would be imposed if the unit modification were to be made (e.g., insurance, licensed contractor, waiver of liability, return to original state upon move-out, extra deposit)?

[ ] Yes

[ ] No

If yes, which one(s)?

[ ] Insurance

[ ] Licensed contractor

[ ] waiver or liability

[ ] Return unit to original state upon move-out

[ ] Extra deposit

Please explain: _____

SECTION 5: FORM SUBMISSION

General comments _____
_____
_____

This form is complete [ ] Yes
[ ] No

Delete this record (TC use only) [ ] Yes
[ ] No

RENTAL NARRATIVE – WHEELCHAIR STUDY

Control _____
Tester ID Number _____

SECTION 1: NARRATIVE

This form is complete: [ ] Yes
[ ] No

Delete this record (TC use only) [ ] Yes
[ ] No

FOLLOW-UP CONTACT FORM – Wheelchair Study

Control Number: _____
Tester Id Number: _____
Follow-up Form Sequence Number: _____

SECTION 1: DOCUMENTING FOLLOW-UP CONTACT

Was there any follow-up contact?
[ ] Yes
[ ] No

Who initiated contact?
[ ] Tester
[ ] Housing provider

(Alias) Name of Tester _____
Name of housing provider/agent (if given) _____

Type of Contact
[ ] Telephone call / voicemail
[ ] Postal mail
[ ] E-mail
[ ] Text Message

Date and time of contact

Day of the Week:
[ ] Monday
[ ] Tuesday
[ ] Wednesday
[ ] Thursday
[ ] Friday
[ ] Saturday
[ ] Sunday

Date (mm/dd/yyyy): _____
Time (hh:mm): _____
AM or PM:
[ ] AM
[ ] PM

What was the stated purpose of the contact? [select "yes" or "no" for all statements]

Personal message from housing provider thanking tester for calling and/or asking if tester has any additional questions.
[ ] Yes
[ ] No

Personal message from housing provider asking if tester is still interested in housing.
[ ] Yes
[ ] No

Personal message from housing provider wanting to let tester know about more available units.
[ ] Yes
[ ] No

Personal message from housing provider wanting to get more information from tester.
[ ] Yes
[ ] No

Personal message from housing provider wanting to provide information about reasonable modification request.

[ ] Yes
[ ] No

Contact initiated by tester following up with housing provider about reasonable modification request.

[ ] Yes
[ ] No

Automated message (call or e-mail) from housing provider thanking tester for calling or visiting and/or providing additional general information.

[ ] Yes
[ ] No

Automated message asking tester to take part in a marketing survey or something similar.

[ ] Yes
[ ] No

Other

[ ] Yes
[ ] No

If Other, specify: _____

If housing provider provided information about reasonable modification requests, what were you told?

[ ] The housing provider said that I could make the building or unit modification myself and pay for it myself
[ ] The housing provider would make the building or unit modification, but I would have to pay for it
[ ] The housing provider would make the building or unit modification at no cost to me
[ ] The housing provider agreed to make some of the building or unit modifications and not others (please explain): _____
[ ] The housing provider would not allow me to make any building or unit modifications
[ ] The housing provider still did not know if the building or unit modification could be made, and did not offer to find out
[ ] The housing provider said the unit was no longer available
[ ] Something else (specify):

_____

SECTION 2: FORM SUBMISSION

This form is complete

[ ] Yes
[ ] No

Delete this record (for TC use only)

[ ] Yes
[ ] No

Appendix F. Supplemental Data Tables

IP CTS treatment measures		Both	Control	Wheelchair	Difference	n
Tester(s) able to speak to someone about housing		86.5%	10.3%	2.5%	−7.8%	500***
If able to speak to someone: Tester(s) told any units available						
Info and availability	One tester told about more units than partner Average number of units available (per call) Agent comment on people who are deaf	84.7%	7.5%	3.3%	−4.2%	425**
	Agent comment on persons with disabilities	53.9%	25.5%	20.6%	−4.9%	425
		1.52		1.44	-0.08	425
		0.0%	0.0%	0.3%	0.3%	425
If available units recommended:						
Tester(s) able to make appointment to see unit(s) Tester(s) told comment on fair housing		93.6%	3.5%	1.8%	−1.8%	356
Comments and	Tester(s) told an application must be completed	0.0%	0.1%	0.2%	0.1%	356
requirements	Tester(s) told a credit check must be completed Tester(s) told a background check must be done Tester(s) told comments on credit standing	97.5%	1.5%	0.7%	−0.7%	356
Average rent		$1,262		$1,267	$5	355
Rent and lease	Tester(s) offered month-to-month contract	1.5%	2.1%	3.0%	0.8%	356
Tester(s) told fees required		31.3%	13.9%	10.4%	−3.5%	356
One tester told higher fees than partner Average fees		60.0%	23.2%	16.8%	−6.4%	356
Tester(s) told about incentives		$182		$167	$15	356
One tester told higher incentives than partner		13.4%	17.5%	7.9%	−9.6%	356**
Fees, incentives, and	Average yearly incentives	66.9%	22.5%	10.6%	−11.9%	356***
move-in costs	Tester(s) told security deposit required	$222		$148	−$74	356**
Tester(s) given choice btwn sec deposit & bond		92.0%	2.8%	0.9%	−1.9%	356
Average security deposit		0.5%	3.1%	1.3%	-1.8%	356
Average surety bond		$749		$724	-$25	328
Average effective deposit		$90		$90	$0	5 ***
Testers told higher yearly net cost Average yearly net cost		$748		$720	-$28	329
		71.3%	13.2%	15.6%	2.4%	328
Overall	**Overall average number units available**	1.43		1.27	−0.16	500 **

Note: IP CTS = Internet Protocol Captioned Telephone Service *** indicates statistical significance at the 0.01 level, ** at the 0.05 level, * at the 0.10 level.

IPR treatment measures		Both	Control	Wheelchair	Difference	n	
Tester(s) able to speak to someone about housing		84.8%	10.8%	3.1%	−7.7%	243	*
If able to speak to someone: Tester(s) told any units available							
Info and availability	One tester told about more units than partner Average number of units available (per call) Agent comment on people who are deaf	90.8%	7.0%	1.0%	−6.0%	206	**
		58.2%	25.8%	15.9%	−9.9%	206	
	Agent comment on persons with disabilities	1.52		1.45	-0.07	206	
		0.0%	0.0%	1.8%	1.8%	206	*
If available units recommended:							
Tester(s) able to make appointment to see unit(s) Tester(s) told comment on fair housing		93.1%	2.8%	0.2%	−2.7%	186	
Comments and	Tester(s) told an application must be completed	0.0%	0.0%	0.5%	0.5%	186	
requirements	Tester(s) told a credit check must be completed Tester(s) told a background check must be done Tester(s) told comments on credit standing Tester(s) told comments on rent history	96.8%	1.4%	1.1%	−0.3%	186	
		96.4%	0.9%	2.7%	1.7%	186	
		21.5%	38.3%	15.0%	-23.3%	186	**
		0.8%	0.9%	2.6%	1.7%	186	
Average rent		$1,196		$1,190	−$6	186	
Rent and lease	Tester(s) offered month-to-month contract	1.1%	1.9%	0.7%	−1.1%	186	
Tester(s) offered two-year lease		3.5%	2.2%	3.8%	1.6%	186	
Tester(s) told fees required		31.5%	12.4%	14.9%	2.6%	186	
One tester told higher fees than partner Average fees		60.5%	20.3%	19.1%	−1.2%	186	
Tester(s) told about incentives		$142		$435	−$6	186	
One tester told higher incentives than partner		11.5%	10.3%	6.8%	−3.5%	186	
Fees, incentives, and	Average yearly incentives	75.9%	15.4%	8.7%	−6.4%	186	
move-in costs	Tester(s) told security deposit required	$252		$166	−$87	186	
Tester(s) given choice btwn sec deposit & bond		91.5%	1.3%	2.0%	0.6%	186	
Average security deposit		3.4%	4.1%	0.4%	-3.7%	186	*
Average surety bond		$736		$735	$0	168	
Average effective deposit		$148		$146	-$2	11	
Testers told higher yearly net cost Average yearly net cost		$736		$734	-$2	168	
		67.2%	18.6%	14.2%	-4.5%	168	
Overall	**Overall average number units available**	1.40		1.30	−0.10	243	

Note: IPR = Internet Protocol Relay; *** indicates statistical significance at the 0.01 level, ** at the 0.05 level, * at the 0.10 level.

VRS treatment measures		Both	Control	Wheelchair	Difference	n	
Tester(s) able to speak to someone about housing		88.8%	6.5%	3.6%	−2.8%	922	**
If able to speak to someone: Tester(s) told any units available							
Info and availability	One tester told about more units than partner	88.9%	3.9%	3.5%	−0.5%	817	
	Average number of units available (per call)	54.4%	26.3%	19.3%	-6.9%	817	**
	Agent comment on people who are deaf	1.57		1.47	-0.10	817	
	Agent comment on persons with disabilities	0.0%	0.3%	1.8%	1.5%	817	**
If available units recommended:							
Tester(s) able to make appointment to see unit(s)		95.3%	1.6%	2.4%	0.9%	725	
Tester(s) told comment on fair housing		0.0%	0.0%	0.2%	0.2%	725	
Comments and	Tester(s) told an application must be completed	99.1%	0.2%	0.3%	0.2%	725	
requirements	Tester(s) told a credit check must be completed	98.5%	0.4%	0.7%	0.3%	725	
	Tester(s) told a background check must be done	24.6%	22.0%	20.8%	-1.2%	725	
	Tester(s) told comments on credit standing	0.0%	1.7%	1.2%	-0.5%	725	
	Tester(s) told comments on rent history						
Average rent		$1,258		$1,243	−$15	724	***
Rent and lease	Tester(s) offered month-to-month contract	0.5%	3.4%	1.7%	−1.7%	724	
Tester(s) offered two-year lease		1.3%	1.4%	2.3%	0.9%	724	

Tester(s) told fees required		34.9%	12.9%	9.5%	−3.4%	724
One tester told higher fees than partner	Average fees	60.8%	21.7%	17.4%	−4.3%	725
Tester(s) told about incentives		$189		$135	−$54	725***
One tester told higher incentives than partner		15.2%	13.3%	10.8%	−2.4%	724
Fees, incentives, and	Average yearly incentives	67.4%	18.7%	13.9%	−4.8%	725
move-in costs	Tester(s) told security deposit required	$281		$210	−$72	725 *
Tester(s) given choice btwn sec deposit & bond		94.0%	1.3%	3.0%	1.6%	724 **
Average security deposit		1.5%	1.5%	1.1%	-0.4%	724
Average surety bond		$747		$716	-$31	670
Average effective deposit		$129		$136	$7	19
Testers told higher yearly net cost	Average yearly net cost	$746		$718	-$28	670
		68.6%	17.4%	14.0%	-3.4%	670
		$15,758		$15,560	-$198	670 ***
Overall	**Overall average number units available**	1.48		1.35	-0.13	924 **

Note: VRS = Video Relay Service; *** indicates statistical significance at the 0.01 level, ** at the 0.05 level, * at the 0.10 level.

Appendix G. Multivariate Analysis Tables

EXHIBIT G-1. REGRESSION MODEL OF THE EFFECT OF THE TYPE OF WHEELCHAIR ON DIFFERENTIAL TREATMENT OF TESTERS WHO USE WHEELCHAIRS

	Appointment		Available unit		Inspection	
Type of wheelchair	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Motorized or power chair	−0.004	0.015	0.012	0.013	0.024	0.023
Scooter	−0.019	0.024	**0.038****	**0.014**	0.001	0.043
Constant	0.021	0.008	0.014	0.008	0.016	0.014
N	1,237		1,150		1,015	
R-squared	0.028		0.041		0.081	

Notes: The table reports coefficients from a weighted regression model of the difference in whether testers in the control group and testers who use wheelchairs made an appointment, learned about a suitable available unit, and inspected a unit. The model independent variables are those listed in the table, as well as controls for metropolitan area. Analysis is restricted to tests in which there is a suitable unit and the type of wheelchair is known.

*** difference is statistically significant at the 0.01 level, ** at the 0.05 level, * at the 0.10 level.

EXHIBIT G-2. REGRESSION MODEL OF THE EFFECT OF THE REASONS FOR USE OF WHEELCHAIR ON DIFFERENTIAL TREATMENT OF TESTERS WHO USE WHEELCHAIRS

	Appointment		Available unit		Inspection	
Reason for use of wheelchair	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Paraplegic	0.012	0.020	−0.014	0.031	−0.031	0.025
Quadriplegic	0.021	0.031	0.006	0.031	0.040	0.032
Amputee	0.044	0.040	−0.005	0.061	−0.064	0.068
Obese	0.039	0.028	0.160	0.085	0.044	0.077
Short stature	−0.048	0.047	0.041	0.043	−0.018	0.062
Manual limitations	−0.021	0.018	−0.002	0.020	−0.018	0.017
Limited mobility	0.023	0.019	−0.004	0.029	−0.015	0.025
Speech or language	0.070	0.057	0.011	0.032	−0.040	0.027
Other	0.008	0.030	**−0.093****	**0.034**	−0.006	0.038
Constant	0.009	0.019	0.034	0.029	0.055	0.024
N	1,260		1,173		1,033	
R-squared	0.034		0.054		0.085	

Notes: The table reports coefficients from a weighted regression model of the difference in whether control testers and testers who used wheelchairs made an appointment, learned about a suitable available unit, and inspected a unit. The model independent variables are those listed in the table, as well as controls for metropolitan area. Analysis is restricted to tests in which there is a suitable unit.

*** difference is statistically significant at the 0.01 level, ** at the 0.05 level, * at the 0.10 level.

EXHIBIT G-3. SOURCES OF VARIATION IN DISCRIMINATION AGAINST RENTERS: REGRESSION MODELS OF THE DIFFERENCE IN TREATMENT OF TESTERS WHO USE WHEELCHAIRS

	Appointment		Available unit		Inspection	
	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Test characteristics						
Control tester went first	**0.031*** **	**0.009**	0.018	0.012	0.009	0.016
Tester characteristics						
Assigned marriage	0.026	0.016	0.010	0.019	−0.008	0.013
Female	−0.019	0.015	−0.018	0.015	0.011	0.019
ln (control assigned income)	−0.029	0.023	**−0.095*** **	**0.030**	−0.041	0.038
Agency characteristics						
Same agent	**−0.029** **	**0.011**	0.017	0.013	−0.016	0.014
Max # people seen	0.005	0.011	−0.006	0.008	−0.010	0.011
Tract characteristics						
Per capita income ($10,000)			−0.001	0.002	0.003	0.003
% new housing/100			−0.044	0.041	−0.035	0.081
% white/100			0.001	0.030	−0.051	0.044
Constant	0.309	0.212	**0.805*** **	**0.224**	0.416	0.317
N	1,258		1,171	1,171	1,033	
R-squared	0.051		0.071		0.094	

Source: United States Census Bureau, "Summary File," 2008–2012 American Community Survey, http://ftp2.census.gov/ (accessed May 1, 2014).

Note: The table reports coefficients from a weighted regression model of the difference in whether control testers and testers who used wheelchairs made an appointment, learned about a suitable available unit, or inspected a suitable unit. The model independent variables are those listed in the table, as well as controls for metropolitan area and calendar month. Tract characteristics are based on the location of the unit where the control tester met the agent. Analysis is restricted to tests in which there is a suitable unit.

*** difference is statistically significant at the 0.01 level, ** at the 0.05 level, * at the 0.10 level.

EXHIBIT G-4. METROPOLITAN VACANCY RATES AND LEVELS OF DIFFERENTIAL TREATMENT: REGRESSION MODELS OF THE DIFFERENCE IN TREATMENT OF TESTERS WHO USE WHEELCHAIRS

	Appointment		Available unit		Inspection	
Market measure	Coefficient	Standard error	Coefficient	Standard error	Coefficient	Standard error
Metro area rental vacancy rate (percent)	0.0014	0.0032	0.0027	0.0025	−0.0056**	0.0027
N		1,258		1,171		1,033

Source: United States Census Bureau, "Summary File," 2008–2012 American Community Survey, http://ftp2.census.gov/ (accessed May 1, 2014).

Notes: The table reports coefficients from a weighted regression model of the difference in whether control testers and testers who use wheelchairs made an appointment, learned about a suitable available unit, and were shown a suitable. The model independent variables are vacancy rate and other variables listed in exhibit WC-3. Analysis is restricted to tests in which there is a suitable unit.

*** difference is statistically significant at the 0.01 level, ** at the 0.05 level, * at the 0.10 level.

EXHIBIT G-5. SOURCES OF VARIATION IN DISCRIMINATION AGAINST RENTERS REGRESSION MODELS OF THE DIFFERENCE IN TREATMENT OF TESTERS WHO ARE DEAF AND HARD OF HEARING

	Contact		Available unit		Incentives	
	Coefficient	**Standard error**	**Coefficient**	**Standard error**	**Coefficient**	**Standard error**
Test characteristics						
Control tester went first			−0.002	0.015	−0.009	0.031
Tester characteristics						
Used Internet Protocol Relay Service	−0.002	0.046	0.009	0.027	−0.084	0.060
Used Video Relay Service	**−0.050****	**0.026**	**−0.042***	**0.023**	−0.084	0.044
Assigned marriage			0.003	0.019	−0.003	0.034
Female			0.018	0.019	0.003	0.044
ln (control assigned income)			0.004	0.023	0.027	0.034
Tract characteristics						
Per capita income ($10,000)			0.005	0.005	**−0.015****	**0.006**
% new housing/100			−0.003	0.074	−0.058	0.105
% white/100			−0.015	0.042	0.060	0.077
Constant	0.079	0.022	−0.080	0.181	−0.108	0.309
N	1,670		1,449		1,266	
R-squared	0.005		0.017		0.019	

Source: United States Census Bureau, "Summary File," 2008–2012 American Community Survey, http://ftp2.census.gov/ (accessed May 1, 2014).

Notes: The table reports coefficients from a weighted regression model of the difference in whether control testers and testers who are deaf or hard of hearing made contact with an agent, learned about an available unit, and learned about incentives. The model independent variables are those listed in the table, as well as calendar month in the models of availability and incentives. The available unit model is based only on units where both testers communicated with an agent. The tract is based on the information gathered at the advance call.

*** difference is statistically significant at the 0.01 level, ** at the 0.05 level, * at the 0.10 level..

U.S. Department of Housing and Urban Development
Office of Policy Development and Research
Washington, DC 20410-6000

June 2015