

Driving Change ★ Creating Opportunity

# Data about Disability: Gaps and Opportunities for Transportation Research

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U.S. DEPARTMENT OF LABOR  
OFFICE OF DISABILITY EMPLOYMENT POLICY





- Part of U.S. Department of Labor
- Non-regulatory
- ODEP's mission is to develop and influence policies and practices that increase the number and quality of employment opportunities for people with disabilities.

*[www.dol.gov/agencies/odep](http://www.dol.gov/agencies/odep)*



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# Agenda

- Definitions and Principles
  - What is disability?
  - The history and the frontier of disability measurement
  - Universal design
- Practical matters
  - A couple great data sources for disability prevalence (the percent of people who have a disability) and some suggested use cases for transportation designers and researchers
  - Disability is diverse! Some demonstrations and how to avoid treating people with disabilities as a monolithic group

Disability is a fluid construct, which makes it difficult to measure.

**What percent of Americans have a disability?**

**12.6 percent**

*(Census Bureau, American Community Survey, 2015-2019)*

**OR?**

**26.7 percent**

*(Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2019)*

One definition of people with disabilities:

those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others

From UN Convention on the Rights of Persons with Disabilities

**History:** In 2008, the Census Bureau introduced the six disability questions currently used in numerous federal surveys.

**17** a. Is this person deaf or does he/she have serious difficulty hearing?

Yes  
 No

b. Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?

Yes  
 No

**19** Because of a physical, mental, or emotional condition, does this person have difficulty doing errands alone such as visiting a doctor's office or shopping?

Yes  
 No

**18** a. Because of a physical, mental, or emotional condition, does this person have serious difficulty concentrating, remembering, or making decisions?

Yes  
 No

b. Does this person have serious difficulty walking or climbing stairs?

Yes  
 No

c. Does this person have difficulty dressing or bathing?

Yes  
 No

This doesn't mean that this is how disability should always be measured. Can you think of an example of someone with a disability who might not answer "Yes" to one of these questions? 6

## Frontier: Testing new measures of disability in the Current Population Survey (CPS)

- ODEP's current project:
  - Revise CPS disability supplement that will be fielded in July 2024
  - Improve our ability to identify people with disabilities who may not be captured in the six "standard" disability questions included in the CPS and other major public surveys

**Possible new topics: mental health conditions, autism, chronic pain, duration and severity of condition, work-limiting disability**



Universal design is an approach to design that works to ensure products and buildings can be used by virtually everyone, regardless of their level of ability or disability. If a design works well for people with disabilities, it works better for everyone.

- Universal design in transportation:
  - Curb cuts easier for wheelchair users, stroller-pushers, and roller-skaters alike to cross the street
  - Audible bus stop announcements and pedestrian signals make traveling easier for the visually impaired, and those of us who are simply distracted
  - A transit wayfinding system that uses symbols, in addition to words, can make travel less confusing for people with cognitive disabilities, and for people who don't read English



*Image: Toole Design*  
<http://www.accessiblesociety.org/topics/universaldesign/>



# One fabulous example



In **Project Sidewalk**, you'll virtually travel through cities completing missions to find and label accessibility features and problems in the environment, including:

Curb Ramps



Missing Curb Ramps



Obstacles in Path



Surface Problems



We'll begin with a short, interactive tutorial.

Notice that there is no curb ramp at the end of this crosswalk. Click the "Missing Curb Ramp" button to label it.



Project Sidewalk is designed and operated by the Makeability Lab at the University of Washington

<https://sidewalk-sea.cs.washington.edu/>

## The American Community Survey: two access options, one great source of disability data

	ACS Microdata (PUMS)	ACS Summary Data
<b>Unit</b>	<ul style="list-style-type: none"> <li>Persons or housing units</li> </ul>	<ul style="list-style-type: none"> <li>a specific geographic entity such as a state, county, or place</li> </ul>
<b>Smallest Unit of Geography (where disability estimates are available)</b>	<ul style="list-style-type: none"> <li>Public Use Microdata Areas (PUMAs)</li> <li>Larger counties</li> </ul>	<ul style="list-style-type: none"> <li>Census tracts</li> </ul>
<b>Access</b>	<ul style="list-style-type: none"> <li>IPUMS USA (<a href="http://usa.ipums.org/">usa.ipums.org/</a>)</li> </ul>	<ul style="list-style-type: none"> <li>Tabulations on <a href="http://data.census.gov">data.census.gov</a></li> <li>Census API wrappers                             <ul style="list-style-type: none"> <li>For R users: <i>tidycensus</i></li> <li>For Python users: <i>CensusData</i></li> </ul> </li> </ul>
<b>Use Case</b>	<p>What percent of people with disabilities in my county or city have access to a vehicle and a smartphone at home?</p> <p>What percent of people with visual impairments in my county or city have home internet, a smartphone, and a computer or tablet at home?</p>	<p>What percent of working age people with disabilities live in a census tract where at least 10,000 jobs are accessible within a 45-minute transit commute?</p>

# Microdata example: Who are you designing for?

		County in NYC				
		Bronx	Kings	New York	Queens	Richmond
Limited English Proficiency	No Disability	13.8%	10.0%	7.1%	13.5%	4.4%
	Disability	20.5%	21.9%	21.9%	20.4%	8.1%
No home internet, computer or smartphone	No Disability	4.9%	6.9%	4.3%	3.9%	5.1%
	Disability	16.9%	22.6%	21.2%	16.6%	14.3%
No home internet or household vehicle	No Disability	8.6%	8.6%	6.5%	4.8%	3.8%
	Disability	22.6%	24.5%	25.1%	15.9%	12.9%

Source: ACS 2015-2019 public use microdata (accessed through IPUMS USA)

# Summary data example

		United States	New York State	Bronx County, New York	Kings County, New York	New York County, New York	Queens County, New York	Richmond County, New York
	<b>Total</b>							
<b>Sex</b>	<b>Male</b>							
	<b>Female</b>							
<b>Race/ Ethnicity</b>	<b>Black</b>							
	<b>AI/AN</b>							
	<b>Asian</b>							
	<b>NHPI</b>							
	<b>Other</b>							
	<b>Multiple</b>							
	<b>White, NH</b>							
	<b>Hispanic</b>							
<b>Age</b>	<b>Under 5</b>							
	<b>5 to 17</b>							
	<b>38 to 34</b>							
	<b>35 to 64</b>							
	<b>65 to 74</b>							
	<b>75+</b>							

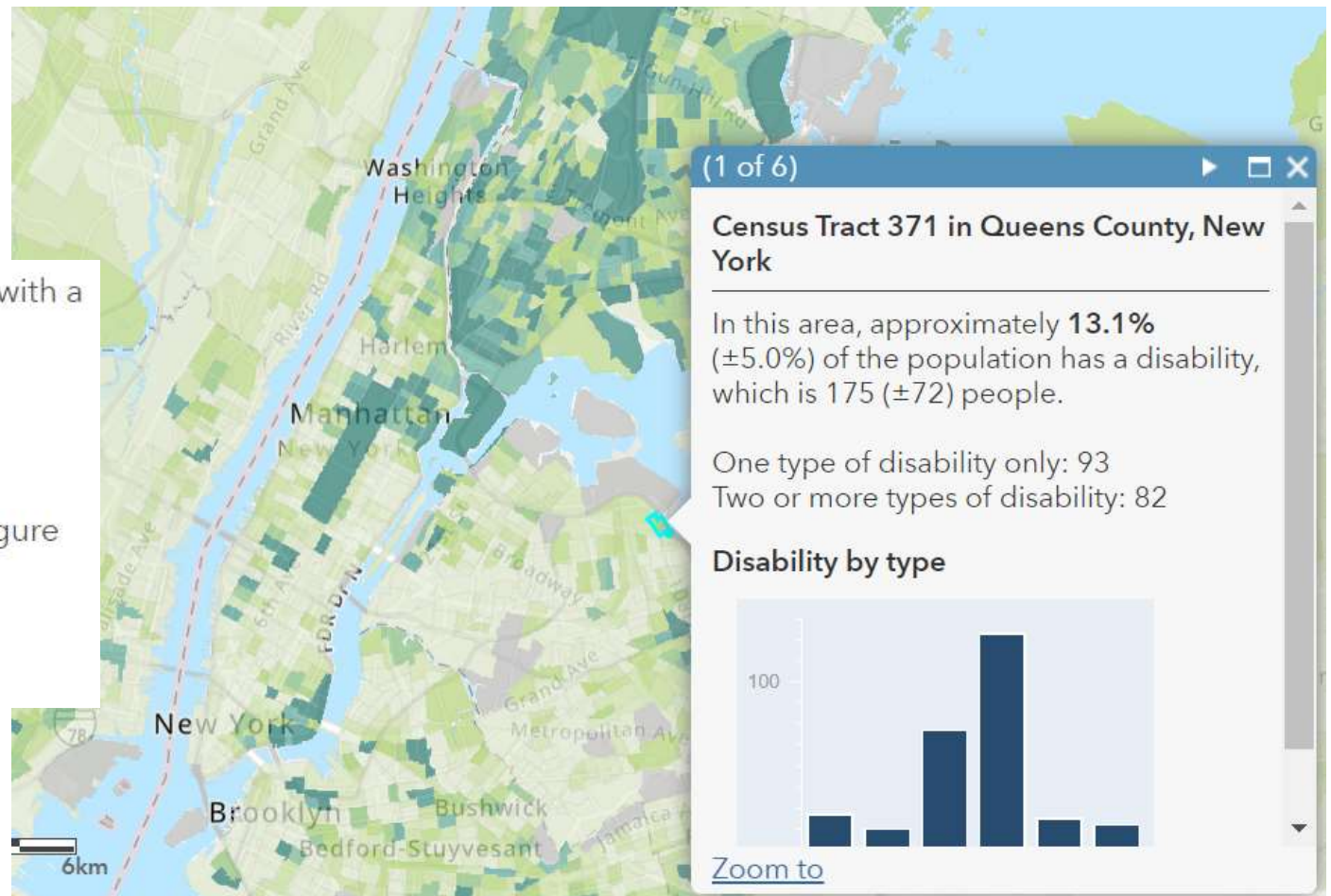
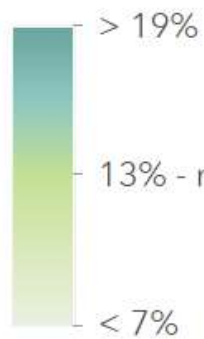
Disability prevalence varies by county, race, sex, and age in NYC (% with disability)

		United States	New York State	Bronx County, New York	Kings County, New York	New York County, New York	Queens County, New York	Richmond County, New York
	<b>Total</b>	12.6	11.5	15.2	10.0	10.3	9.6	9.8
<b>Sex</b>	<b>Male</b>	12.5	10.9	13.6	8.7	9.1	8.6	9.2
	<b>Female</b>	12.7	12.1	16.7	11.1	11.3	10.6	10.4
<b>Race/ Ethnicity</b>	<b>Black</b>	14	12.7	14.6	11.1	15.8	11.4	11.4
	<b>AI/AN</b>	16.9	17.5	21.7	13.8	18.4	13.6	13.5
	<b>Asian</b>	7.1	6.8	11.1	6.6	7.0	7.0	6.1
	<b>NHPI</b>	10.8	11.5	13.1	9.2	11.4	10.5	1.8
	<b>Other</b>	8.3	10.3	13.8	10.2	13.5	6.9	9.1
	<b>Multiple</b>	10.9	10.6	14.9	9.4	9.8	9.1	9.7
	<b>White, NH</b>	13.9	12.1	18.1	9.8	7.5	12.6	10.6
	<b>Hispanic</b>	9.0	11.2	15.4	11.2	15	8.5	8.4
<b>Age</b>	<b>Under 5</b>	0.7	0.6	1.1	0.5	0.4	0.7	0.3
	<b>5 to 17</b>	5.5	5.2	8.2	3.4	4.9	3.8	3.0
	<b>38 to 34</b>	6.3	5.4	7.2	3.4	3.2	3.6	4.4
	<b>35 to 64</b>	12.6	11.0	18.0	9.5	9.6	8.3	9.4
	<b>65 to 74</b>	24.8	21.8	34.7	24.9	21.4	20.4	19.6
	<b>75+</b>	48.4	46.6	55.5	53.7	45.8	47.3	43.9

Source: ACS 2015-2019 Disability Characteristics Table S1810 (accessed through data.census.gov)

# Summary Data example

Percent of population with a disability



<https://arcg.is/111O1b0>

Source: ACS 2015-2019 Disability Characteristics

# Summary

Thank you!  
Contact me:  
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- Disability:
  - Is a fluid construct (in space, over generations, and over one's life course)
  - And intersects (not uniformly) with other constructs like gender and race
- Functional abilities are often more informative than labels when it comes to:
  - Understanding the various social and environmental barriers that people with disabilities face
  - Crafting inclusive policy and design solutions (see: Universal Design)
- Disability data from the Census Bureau's ACS can provide a snapshot in time...
  - About some (but certainly not all) of the functional abilities that enable social participation
  - And can be part of a portfolio of equity measures (ex: were people with disabilities as likely as people without disabilities to live in places with good transportation access in 2019, compared with in 2015?)
  - And it should inspire us to seek not only equitable outcomes, but also equitable processes ("Nothing about us without us!")