Good Shepherd Rehabilitation Network
2021-22 Community Health Needs Assessment

Disability, Diversity, Equity & Inclusion

Prepared March 2022

Good Shepherd Rehabilitation Network is the eighth largest rehabilitation provider in the country, according to *Modern Healthcare* magazine. Founded in 1908 in Allentown, Pennsylvania, Good Shepherd offers a post-acute continuum of care for adults and children with physical and cognitive challenges. Good Shepherd's 2,100 Associates treat 65,000 patients at more than 60 locations in Pennsylvania and New Jersey. Good Shepherd cares for adults and children with catastrophic injuries and conditions, such as spinal cord injury, brain injury, stroke, amputation and major multiple traumas and provides outpatient musculoskeletal and orthopedic rehabilitation services, long-term acute care and long-term care.

The Good Shepherd Physician Group is highly regarded for clinical excellence and its commitment to maximizing patients' functional outcomes, delivering compassionate care and being a national leader in the use of innovative rehabilitation technologies. Good Shepherd physicians are experts who specialize in various aspects of rehabilitation care. Good Shepherd is the world's leading clinical user of the Ekso Bionics® exoskeleton to treat patients with spinal cord injuries and was one of four facilities internationally designated by Ekso as a "Center for Robotic Excellence." Good Shepherd's long-term care facilities have consistently received 5-star ratings from *US News and World Report*.

Good Shepherd is a not-for-profit health-care network with a strong commitment to building better communities through partnerships with organizations whose vision and values reflect its own. Good Shepherd partners with the University of Pennsylvania Health System (UPHS) to provide comprehensive rehabilitation and specialty services in the Greater Philadelphia area through Good Shepherd Penn Partners, a joint venture.

The Muhlenberg College Institute of Public Opinion is a research center that conducts scientific based survey research projects on public policy and political issues of local, statewide, and national concern. In service to the College's pedagogical and community mission, the Institute also undertakes projects in conjunction with community partners to examine contemporary issues relevant to policy makers and to the public. It is directed by Dr. Christopher Borick, Professor of Political Science at Muhlenberg College (borick@muhleberg.edu).

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The views expressed in this report do not reflect the views of the Polling Institute, Muhlenberg College, or Good Shepherd Rehabilitation Network.

Disability, Diversity, Equity & Inclusion

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Project Overview & Research Methodology

This report responds to the Patient Protection and Affordable Care Act of 2010 (Section 501(1) (3)), which requires charitable hospital organizations to conduct a community health needs assessment (CHNA) and to adopt an implementation strategy to meet the community health needs identified through that assessment at least once every three years.[1] Community health needs assessments, when done well, are processes of community engagement, involve the collection and analysis of data on health outcomes, help identify health disparities and the social determinants of health, and assist hospitals in identifying resources that can be used to address priority needs. Requirements of CHNAs under the ACA also require that hospitals take into account input from persons who represent the broad interests of the community served by the hospital facility, including those with special knowledge of or expertise in public health.

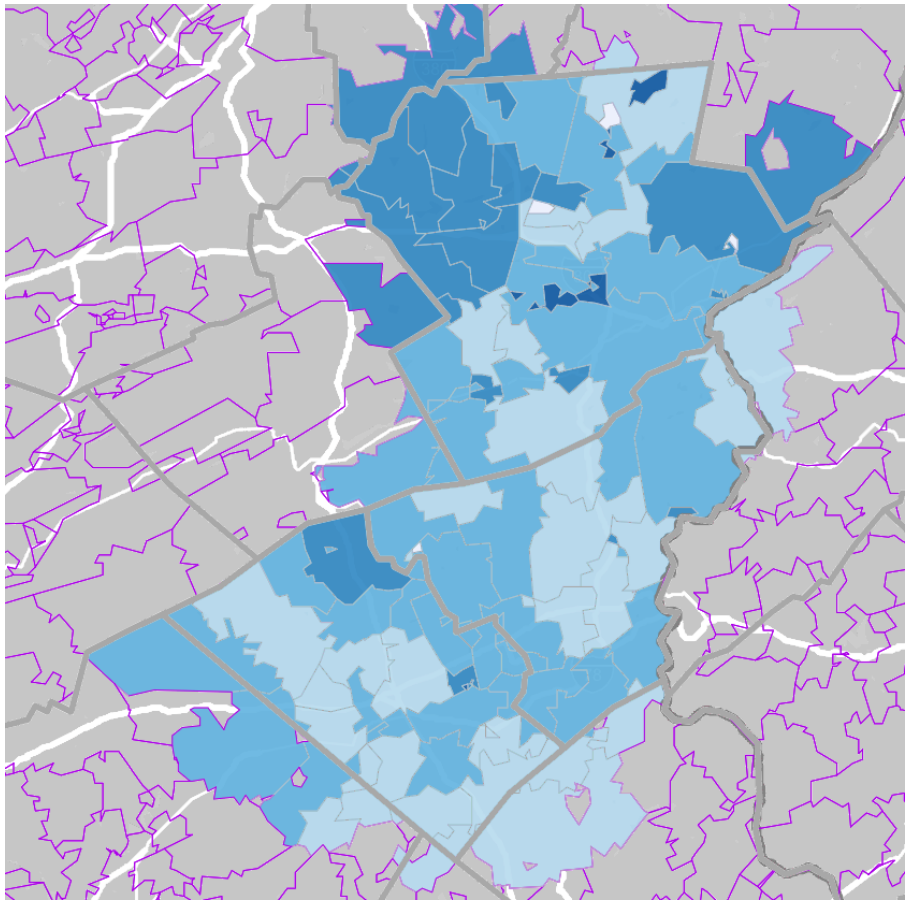
An important stage in a CHNA is identifying and defining the community that a charitable hospital serves. Geographically, Good Shepherd Rehabilitation Network (GSRN) is headquartered in the city of Allentown in the county of Lehigh, Pennsylvania, although its network and partnerships reach more than 70 locations in Pennsylvania and New Jersey. For the purposes of this CHNA, the community is defined regionally to include the Pennsylvania counties of Lehigh, Northampton, and Monroe.[2] Utilizing data from the US Census Bureau's American Community Survey, **Map 1** summarizes the percentage of the population with a disability (by zipcode) in this three-county region. Good Shepherd's primary population of interest includes people with disabilities since these individuals are most likely to be directly served by GSRN. Nonetheless, disability is partially a function of the social environment and many individuals, perhaps most, will at some time in their life experience some form of disability. Therefore, the findings from the CHNA are relevant to all individuals living in the region.

As seen in **Map 1**, individuals with disabilities live throughout the three-county area, and range from about 5% to 30% of the overall population in more local geographies. For example, about 13.5% of all residents of Lehigh County have a disability, but in the zipcode of 18080 (Slatington) about 21% of individuals have a disability. More dramatically, in 18101 (Allentown) more than 26% of individuals have some kind of disability. In Monroe County, where the overall percentage of people with disabilities in the population is 14.9%, in zipcode of 18321 (Bartonsville) 28.4% of the population has a disability. **Appendix I,** which includes population data on people with disabilities in the major townships and boroughs of each county, is useful to read in combination with **Map 1**, and provides further information about the distribution of the population of people with disabilities.

[1] The Patient Protection and Affordable Care Act of 2010 (PPACA), Pub. L. No. 111-148, 124 *Stat*. 119. This report represents only the research portion of GSRN's CHNA. Neither the Muhlenberg College Institute of Public Opinion, nor the researchers engaged in this project, are responsible for ensuring compliance with the ACA or for other requirements related to IRS reporting for nonprofit hospital organizations, details of which are available at: https://icdr.acl.gov/resources/disability-dataGSRN CHNA 2021-22.

[2] Approximately 57% of GSRN's patients reside in Lehigh or Northampton counties.

Map 1. Percentage of individuals with a disability in
Lehigh, Northampton, and Monroe Counties by ZIP Code Tabulation Area



21.8%–36.9%	*5*
16.2%–21.7%	*17*
11.5%–16.1%	*36*
4.9%–11.4%	*29*
0%–4.8%	*4*
No Data	*5*

Source: American Community Survey, 2019 Five-Year Estimates. *Note*: Includes the non-institutionalized civilian population.

With the community of interest defined to include Lehigh, Northampton, and Monroe counties, this CHNA uses a three-prong research methodology to provide evidence-based analysis of health needs in our community, helping GSRN comply with federal law while giving voice to people with disabilities and their families. In each stage of the research process, a significant priority is examining issues related to diversity, equity, and inclusion. Although our community has made notable progress in some areas of life for people with disabilities, much work remains. Moreover, the COVID-19 pandemic and renewed attention to diversity and inclusion in the wake of racial violence in the US, have shifted attention toward the social determinants of health—such as systemic inequalities and discrimination—that intersect with disability and access to health in complex ways. The World Health Organization (WHO) notes that people with disabilities face stigma, discrimination, and poor health services when they access health care; there is an urgent need to "scale up disability inclusion" at all levels of health care.[3]

2021-22 CHNA Research Methodology

- √ Update key secondary data from national and state data sources
- √ Gather new primary data from three county telephone survey of approximately 1000 adults
- √ Solicit insight and expertise from key stakeholders
- √ Reflect on what was learned from previous CHNA in 2018-2019

The research methodology for the CHNA (**Figure 1)**, includes the following:

1. First, this study summarizes secondary data from a variety of publicly available national and state data sources, including the US Census Bureau's American Community Survey (ACS), the Centers for Disease Control's Behavioral Risk Factor Surveillance System (BRFSS), the Robert Wood Johnson' County Health Rankings, and the PA Department of Health. These data are especially useful in helping to identify social and environmental determinants of health that interact with individual level characteristics in shaping the health and wellbeing of people with disabilities.

2. Second, this study summarizes findings from a telephone-based survey administered to a randomly selected sample of 1019 residents in Lehigh, Northampton, and Monroe counties in October 2021. The survey, administered by the Muhlenberg College Institute of Public Opinion,

[3] World Health Organization, "Disability and Health," November 24, 2021: https://www.who.int/news-room/fact-sheets/detail/disability-and-health

measures attitudes toward people with disabilities, experiences of discrimination in health care settings, and experience with and interest in telemedicine/telehealth opportunities (an emergent form of health care delivery with potentially important implications for access and inclusion).

3. Third, this study includes findings from two forums of key stakeholders (e.g., people with disabilities, heads of public and private agencies serving the disability community, educators, elected representatives, etc.). These forums brought together community members and individuals with special expertise in health and disability to share additional insight about diversity, equity, and inclusion concerns for disabled people and to help validate the secondary and survey data. Key stakeholders were also invited to provide written feedback after the forum. A list of organizations and agencies that participated in the community forums is available in **Appendix II**.

In addition to these steps, an important consideration in this CHNA are findings from GSRN's previous CHNA conducted in 2018-2019. Good Shepherd has a long history of supporting research to improve lives for people with disabilities in our community; what we have learned from past efforts informs the current study. Key health concerns that emerged from the previous CHNA in 2018-19 included: 1) a need to develop more nuanced understanding about disability among health care workers, policymakers, and the general public; 2) troublesome inequalities in income, education, and employment that disadvantage people with disabilities; 3) ongoing transportation access issues in the region; 4) access and equity concerns in the area of information and communication; 5) a need for additional mental health care and support groups for people with disabilities, especially for post-school age young and middle-age adults; 6) ongoing challenges related to supporting caregivers and family members of people with disabilities; and 7) challenges related to the lack of health data and information, particularly at local geographies, about people with disabilities. Using these findings, GSRN's previous CHNA implementation plan identified four goals: 1) improving data collection; 2) improving universal accessibility in bathrooms; 3) improving resources and services for individual ages 21-64; and 4) increasing the number of support groups in the community for people with disabilities.

Executive Summary of Key Findings[4]

The research summarized in this report emphasizes 1) the contours and characteristics of the population of people with disabilities in Lehigh, Northampton and Monroe counties; 2) community attitudes toward people with disabilities; 3) individuals' experiences of discrimination in health care settings; and 4) individuals' experiences with and interest in telehealth for a range of health care services. Three key themes emerge from these findings:

Disability is an Axis of Inequality

People with disabilities in the three-county area of Lehigh, Northampton, and Monroe are more likely to live in poverty, to be low-income, to have lower levels of educational attainment, and to be unemployed compared to people without disabilities. These and other social determinants of health (including, for example, housing and transportation) shape physical and mental health in critical ways. Understanding the demographics of the disabled population in our region (including data on disability prevalence) is a first step toward addressing health related needs, but it is a just a start. Researchers have access to individual level health data for people with disabilities across the state of PA, but we lack similar health outcome measures at the county level.[5] As one community member put it, *awareness that inequity exists* for people with disabilities, especially when it comes to access to health and health care, is a necessary step for making our community more equitable. Primary data on health inequities among people with disabilities in our region would complement the information we have about the social determinants of health. The paucity of this kind of data makes it more difficult to track progress or to create inclusive strategies for improving public health.

DEI Work Must Include Disability

Our community has made notable progress in improving access and inclusion for people with disabilities. As one stakeholder put it, the willingness to *embrace disability and all its forms is definitely one of the strengths of our community.* Additionally, community leaders and individuals increasingly hold more complex understandings which recognize disability as a product of interaction—an interaction between individuals and the social, economic, political, and cultural environments in they live. Nonetheless, there are important gaps in perceptions of community inclusiveness which suggest that disability is not only an axis of inequality, but also intersects in important and complex ways with other categories of identity. Many disabled individuals continue to experience discrimination and unfair treatment, including in health care settings. One community leader noted, "*I think the needle has moved. I do think there is more acceptance. I definitely can see that through my lifetime, but you know, we're not there yet*." To the extent that disability is a diverse part of the human experience, it is not possible to fully serve the goals of diversity, equity, and inclusion without a core emphasis on disability.

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[4] In recognition of the complexity of disability as an aspect of identity, this report alternates between "person first" language (e.g., person with a disability) and "identity first" language (e.g., disabled person).

[5] For example, the CDC's BRFSS survey shows that in the state of Pennsylvania, 14% of disabled individuals have diabetes, 10% have heart disease, 43% have obesity, and 32% are current smokers.

Telehealth May Help Promote Health Access & Equity

It is perhaps not an exaggeration to say that the COVID pandemic brought with it a new era in telehealth, in large part because policy changes helped reduce barriers to delivering telehealth.[6] At the same, the COVID pandemic magnified health equity concerns, particularly for people with disabilities.[7] Telehealth is a bit of a "mixed bag" for people with disabilities. Telehealth services may help mitigate some access barriers, such as those associated with transportation or physical access, or programmatic barriers, such as those linked to inconvenient scheduling options. At the same time, however, telehealth services may create unique barriers that undermine health equity. For example, telehealth may be inaccessible to individuals with communication, speech, hearing, or visual disabilities. Moreover, telehealth could unintentionally reinforce a "digital divide" largely defined by geography, income, age, and education. Telehealth has great potential especially in reducing time, cost, and transportation costs and potentially improving accessibility. Inclusive telehealth requires attention to potential challenges, including regional variation in availability, communication challenges between providers and patients, and multicultural competency among health care providers, including competency about disabilities.[8]

[6] Valdez, Rupa, et. al., 2021, "Ensuring Full Participation of People with Disabilities in an Era of Telehealth," *Journal of the American Medical Informatics Association* 28 (2): 389-392.

[7] Not only were disabled people at higher risk for poor outcomes due to COVID, they faced inaccessible public health information about testing and treatments; troubling access health care, especially personal care; food, housing, employment, and transportation insecurities; loss of social support; and a lack of personal protective equipment. See Chao, et. al., 2020, "Multicultural Competencies of Healthcare Professionals and Disability-Inclusive in Telehealth during the COVID-19 Pandemic," *Early Childhood, Special Education, and Counselor Education Faculty Publications* (3) https://uknowledge.uky.edu/edsrc_facpub/3

[8] Chao, et. al, 2020.

Disabilities in the Region: Summary of Secondary Research

This section summarizes what we know about the population of people with disabilities in Lehigh, Northampton, and Monroe counties drawing primarily on data from the US Census Bureau's American Community Survey (ACS). The ACS is helpful in estimating the prevalence of particular kinds of disabilities among subgroups of the population, but is limited when it comes to understanding the particular health needs of people with disabilities. Moreover, researchers increasingly view disability as a product of interaction between individuals and the social, economic, political, and cultural environment in which we live. Although the ACS offers some insight about interactions between disabilities and inequalities in educational attainment, employment, and income, these kinds of interactions can be difficult to glean from secondary data.

Population

Disability is, in part, related to trends in overall population growth, decline, and aging. While the state of Pennsylvania has generally experienced slowing population growth overall, some counties, especially those in the southeastern part of the state, have experienced significant population growth. According to the Pennsylvania State Data Center, both Lehigh and Northampton counties experienced greater population growth compared to the statewide average. Lehigh County grew by 7.2% between 2010 and 2020, while Northampton County grew by 5.1% during the same time frame. The major cities in the Lehigh Valley—Allentown, Bethlehem, and Easton—all experienced population growth in the past 10 years. Monroe County, in contrast, has seen a loss of population of almost 1% since 2010.[9]

In much the same way that population growth and decline vary across the state, the same is true for aging populations. Older Pennsylvanians increasingly make up a larger share of the statewide population—in 2019, seniors were about 18% of the population and were the fastest growing cohort in the state. The same cannot be said for all counties in the state, however. Lehigh County, for example, has been grown "younger" over the past decade, while Northampton County and Monroe County have been growing "older."[10]

Figures 2 and 3 illustrate the shifting population of people with disabilities in the three counties of interest.[11] As shown, there are approximately 110,849 people with disabilities across Lehigh,

[9] PA State Data Center, Census 2020 Dashboard, County Profiles, available online at: https://pasdc.hbg.psu.edu/Census-2020-Dashboards/Census-2020-County-Data.

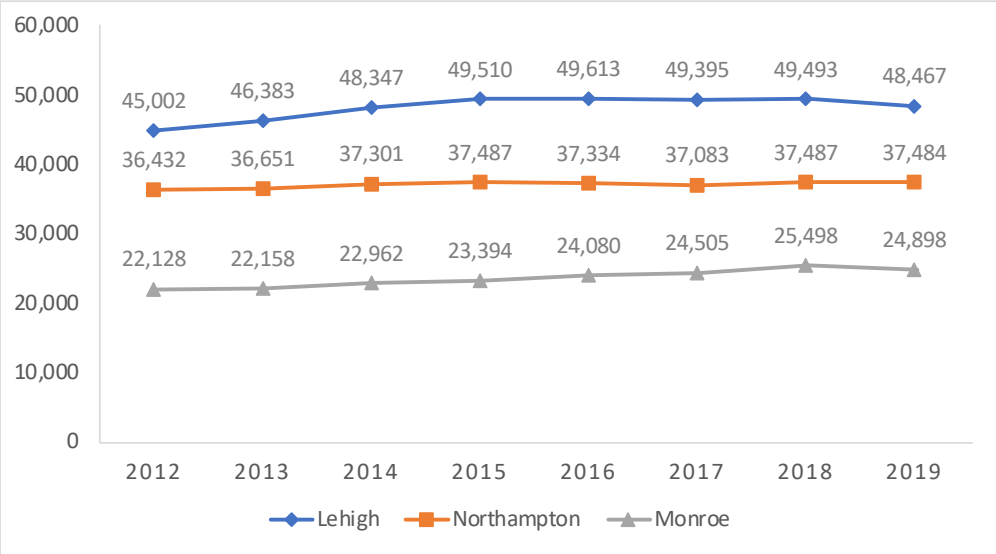
[10] For one point of comparison, consider the 2019 median age by county which was 39.1 in Lehigh, 42.4 in Northampton, and 42.9 in Monroe. ACS 2019 Five-Year Estimates. Table S0101. Statewide the median age is 40.8. Nationwide the median age is 38.1.

[11] The ACS's definition of disability is not without controversy. Data reported define disabilities as follows: Hearing difficulty (deaf or having serious difficulty hearing); Vision difficulty (blind or having serious difficulty seeing, even when wearing glasses); Cognitive difficulty (because of a physical, mental, or emotional problem, having difficulty remembering, concentrating, or making decisions); Ambulatory difficulty (having serious difficulty walking or climbing stairs); Self-care difficulty (having difficulty bathing or dressing); Independent living difficulty (because of a physical, mental, or emotional problem, having difficulty doing errands alone such as

Northampton, and Monroe counties. This number represents an increase from 103,566 in 2012, although the growth has been uneven across the counties. This can be seen most clearly in **Figure 3** which shows the percentage of each county's population with a disability.

Table 1 provides a closer look at the prevalence of disability type in the three counties of interest in 2019, the most recent year for which disability data at the county level is available. Ambulatory difficulties are the most common in each of the three counties, followed by independent living and cognitive disabilities (with some variation in prevalence across counties).

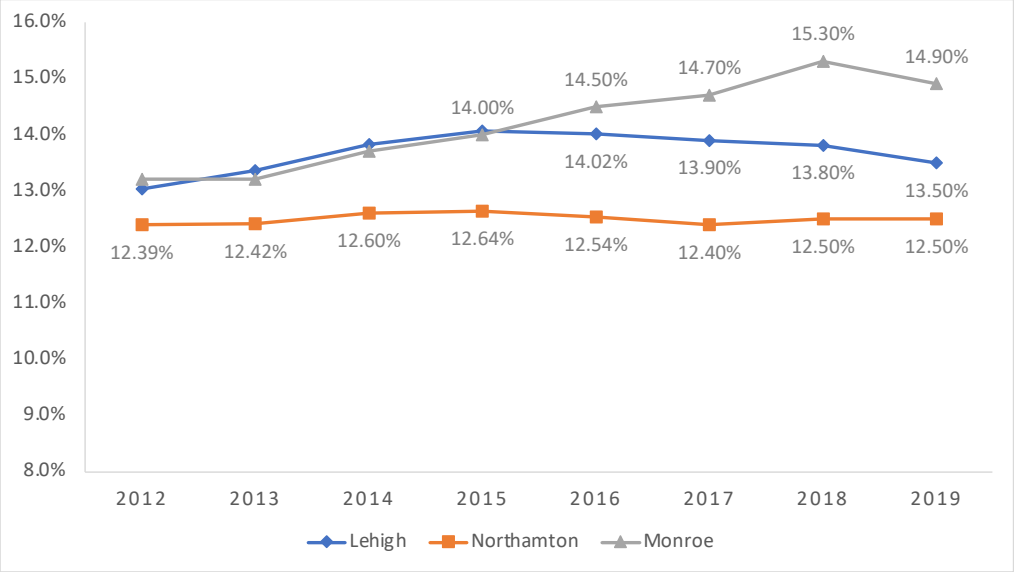
Figure. 2. Estimated population of people with disabilities in Lehigh, Northampton, and Monroe Counties, 2012-2019



Source: American Community Survey, five-year estimates. *Note*: Refers to the civilian, non-institutionalized population (i.e., excluding individuals who reside in long-term care institutions, nursing homes, prisons, or psychiatric institutions).

visiting a doctor's office or shopping). See the US Census's "How Disability Data are Collected from the American Community Survey" at: https://www.census.gov/topics/health/disability/guidance/data-collection-acs.html

Figure 3. Percentage of population with a disability in Lehigh, Northampton, and Monroe Counties, 2012-2019



Source: American Community Survey, five-year estimates. *Note*: Refers to the civilian, non-institutionalized population (i.e., excluding individuals who reside in long-term care institutions, nursing homes, prisons, or psychiatric institutions).

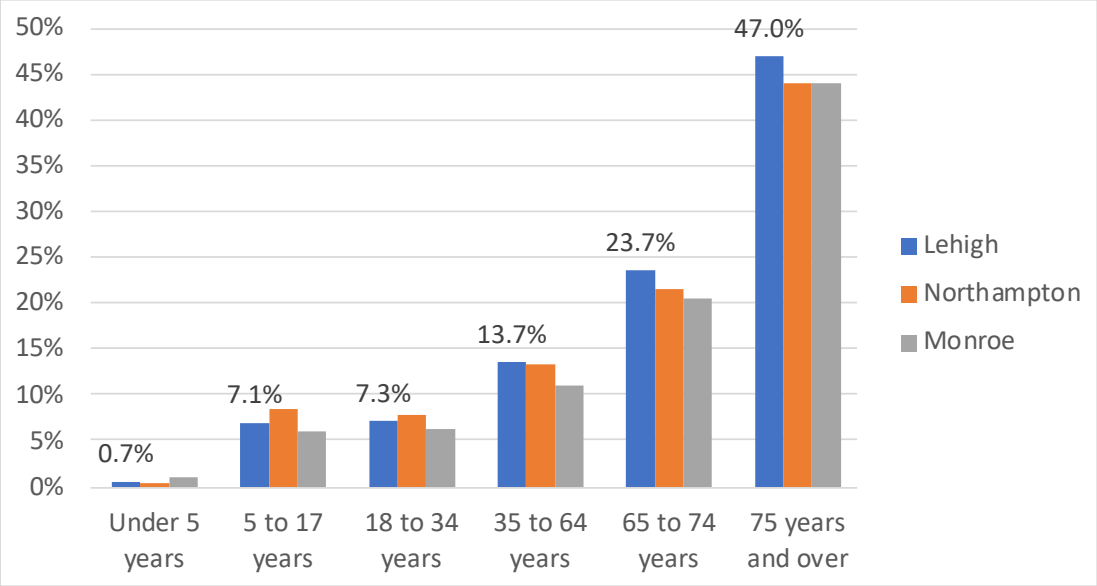
Table 1. Disability by Type in Lehigh, Northampton, and Monroe Counties, 2019

	Lehigh		*Northampton*		*Monroe*	
	Number	Percent with a disability	Number	Percent with a disability	Number	Percent with a disability
Total Population	359,963		300,186		166,996	
Population with a disability	48,467	13.5%	37,484	12.5%	24,898	14.9%
Hearing difficulty	11, 296	3.1%	9,484	3.2%	7,290	4.4%
Vision difficulty	9,314	2.6%	6,302	2.1%	5,233	3.1%
Cognitive difficulty	22,025	6.5%	14,029	4.9%	9,742	6.1%
Ambulatory difficulty	22,806	6.7%	19,284	6.8%	13,648	8.6%
Self-Care difficulty	8,486	2.5%	6,701	2.3%	6,167	3.9%
Independent living difficulty	15,643	5.6%	13,529	5.6%	10,199	7.6%

Source: American Community Survey, 2019 Five-Year Estimates. *Note*: Refers to the civilian, non-institutionalized population

Disability is related to a number of additional socioeconomic and demographic factors. Perhaps most obviously, disability is related to age. As seen in **Figure 4** age is positively associated with disability—47% of people ages 75 and older have a disability in Lehigh County, for example. Nonetheless, disability is present at all age categories. **Figure 5** illustrates the proportion of the disabled population in each county by age.

Figure 4. Age and Disability in Lehigh, Northampton, and Monroe counties, 2019



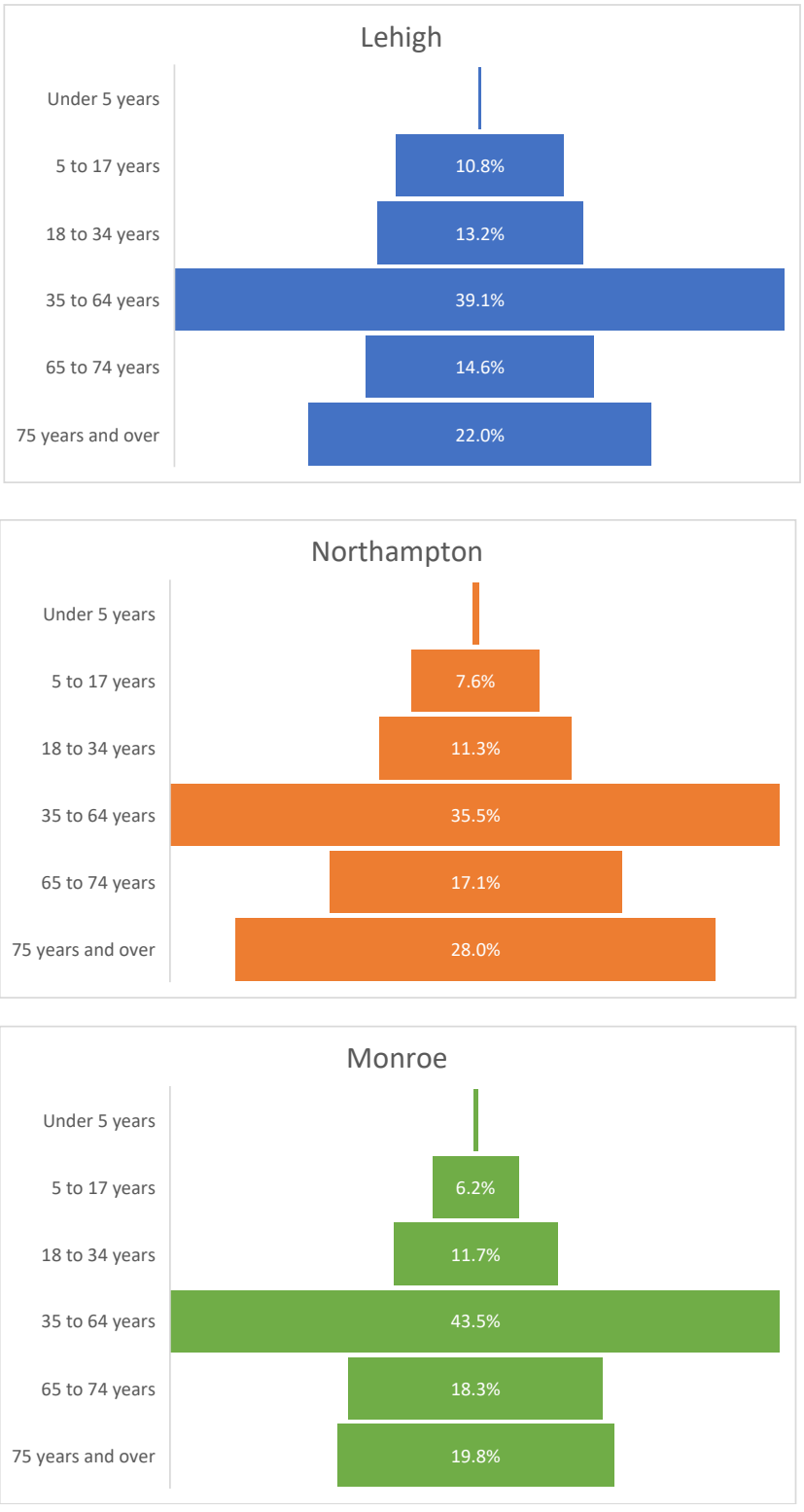
Source: American Community Survey, five-year estimates, 2019.

Disability prevalence is higher among women compared to men, as show in in **Table 2**.[12] Disability prevalence is also related to race, as seen in **Table 3**. Asians in the Lehigh Valley have the lowest rates of disability, followed by whites. According to the US Census Bureau, nationally, American Indians and Alaskan Native individuals have the highest rates of disability (with about one in four having a disability); rates are similarly higher among these individuals in the three counties of interest.[13] To put these data in context, according to the PA Department of Health, statewide, 24% of whites, 33% of Hispanics/Latinos, and 35% of Black and multi-race individuals have one or more disabilities.

[12] According to the US Department of Labor's Office of Disability Employment Policy, women with disabilities continue to lag behind men with disabilities when it comes to education and employment (although gaps have been narrowing). Women with disabilities are more likely to have low income and to live in poverty compared to men with disabilities and compared to individuals without disabilities. See DOL, Office of Disability Employment Policy, "Spotlight on Women with Disabilities," https://www.dol.gov/sites/dolgov/files/ODEP/pdf/Spotlight-on-Women-with-Disabilities-March-2021.pdf.

[13] See the US Census Bureau, "Adults with Disabilities: Ethnicity and Race," https://www.cdc.gov/ncbddd/disabilityandhealth/materials/infographic-disabilities-ethnicity-race.html

Figure 5. Proportion of the Disability Community by Age in Lehigh, Northampton, and Monroe counties, 2019



Source: American Community Survey, five-year estimates, 2019.

Table 2. Percentage of Residents with a Disability by Sex, 2019

	Lehigh	*Northampton*	*Monroe*
Male	12.7%	11.6%	14.5%
Female	14.2%	13.3%	15.3%

Source: American Community Survey, five-year estimates, 2019.

Table 3. Percentage of Residents with a Disability by Race and Ethnicity, 2019

	Lehigh	*Northampton*	*Monroe*
White	13.3%	12.6%	15.7%
Black or African American	14.0%	14.2%	12.0%
American Indian and Alaska Native	15.5%	14.8%	15.1%
Asian	8.5%	6.0%	9.3%
Native Hawaiian and Other Pacific Islander	19.1%	7.0%	58.8% *
Some other race	18.0%	13.0%	15.2%
Two or more races	13.1%	10.7%	12.9%
White alone, not Hispanic or Latino	13.0%	12.7%	16.3%
Hispanic or Latino	15.3%	12.7%	12.5%

Source: American Community Survey, five-year estimates, 2019.

* There are very few Native American/other Pacific Islanders in Monroe County. The ACS estimates about 50 individuals in 2019, with a margin of error of +/-57.2. See ACS Five-Year Estimates, 2019.

Social Determinants of Health & Vulnerable Populations

The social determinants of health include the conditions in environments where people live, learn, work, play, and age that affect a range of health, functioning, and quality of life outcomes and risks.[14] Transportation and adequate housing, for example, have a major impact on people's health, well-being, and quality of life. Previous research suggests that when it comes to many key social determinants of health—economic stability, education, health and health care, social and community contexts—people with disabilities are more likely to experience poorer outcomes and fewer opportunities when compared to people with disabilities. People with disabilities are also at higher risk for other a range of health measures, including obesity, smoking, low levels of physical activity, and high blood pressure, according to the CDC.[15]

The ACS provides a partial view of some of the social determinants of health for people with disabilities in our community, namely economic stability and education, and provides a window for considering the ways that disability can limit individual's economic opportunity. As shown in **Figure 6,** for example, there are clear disparities in employment status between people with disabilities and people without disabilities. Fewer than one quarter of adults with disabilities in Lehigh County are employed, for example, compared to over 65% of adults without disabilities. The same pattern is repeated in Northampton and Monroe counties.

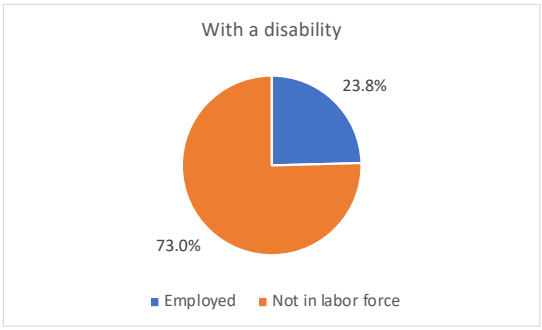
Similar disparities are seen in educational attainment in **Figure 7**. In each of the counties of interest, people with disabilities have lower overall educational attainment. The disparities are especially noteworthy for educational levels beyond a high school degree. Whereas more than 60% of people without disabilities in Lehigh have some post-high school education, the same is true of only 36.7% of people with disabilities. In Northampton County, more than 60% of people without disabilities have post-high school education compared to only 37.3% of people with disabilities. A slightly higher proportion of people with disabilities in Monroe County have achieved post-high school educational levels—about 43%, compared to 57.5% of people without disabilities.

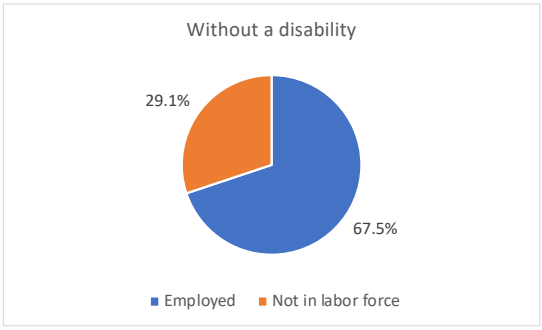
[14] See the CDC's "Social Determinants of Health: Know What Affects Health," at: https://www.cdc.gov/socialdeterminants/index.htm

[15] For example, in the state of PA, 14% of people with disabilities have diabetes; among people without disabilities, 7% have diabetes. See "Disability Impacts Pennsylvania," https://www.cdc.gov/ncbddd/disabilityandhealth/impacts/pennsylvania.html

Figure 6. Employment Status & Disability, 2019

Pennsylvania





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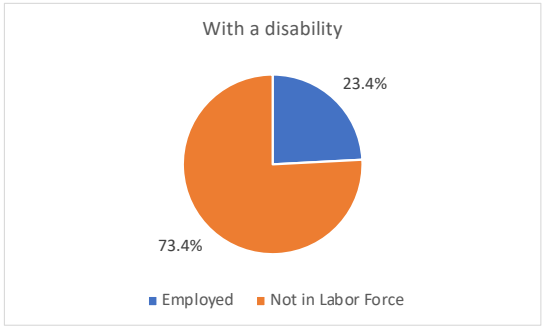
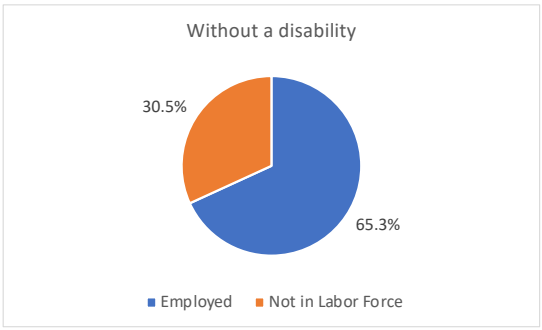
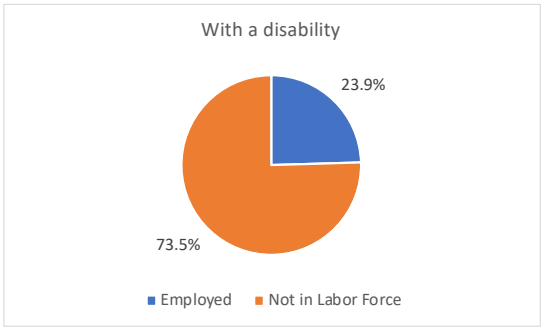
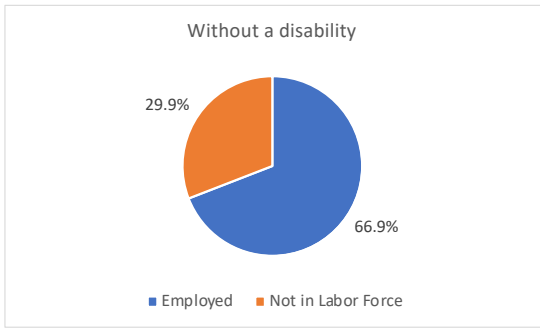


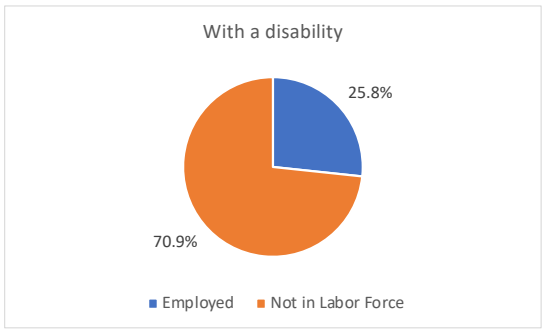


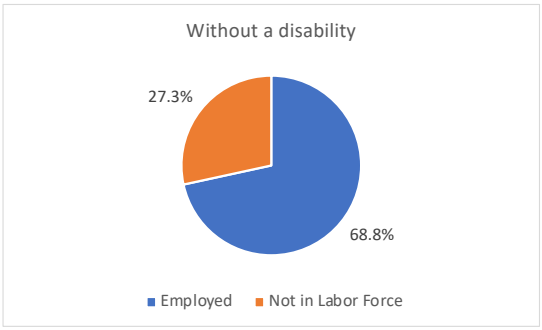
Northampton





Monroe

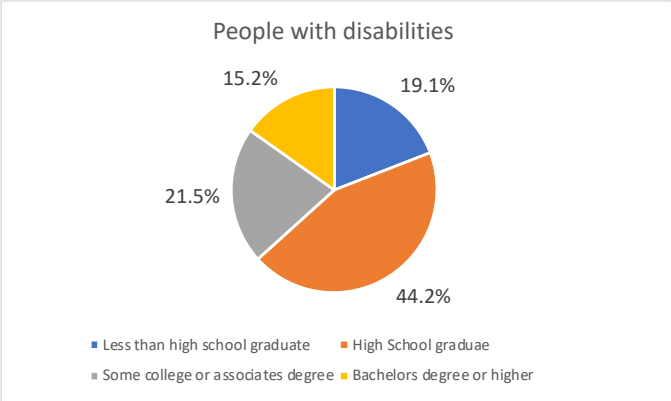


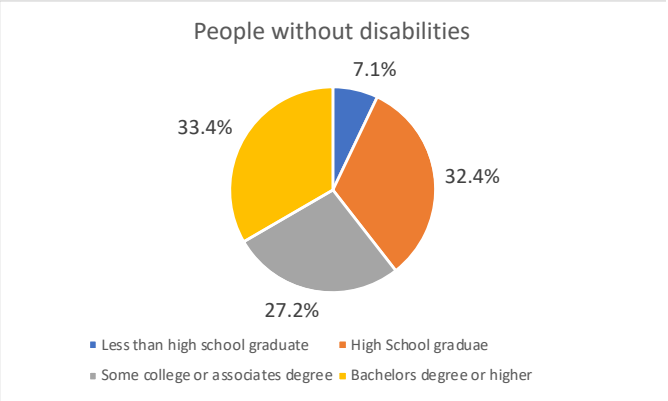


Source: American Community Survey, five-year estimates, 2019. *Note*: Includes civilian, noninstitutionalized population age 16 and over.

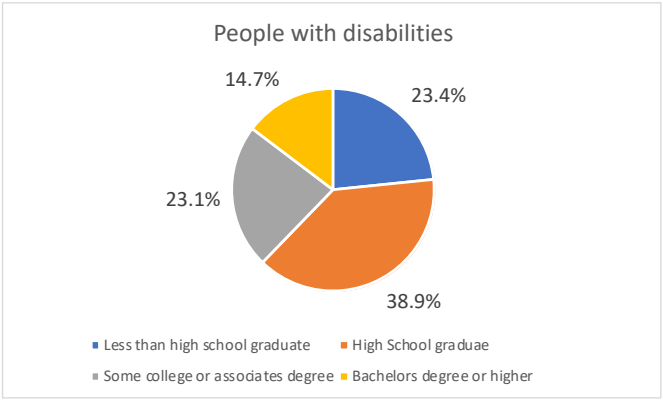
Figure 7. Educational Attainment & Disability, 2019

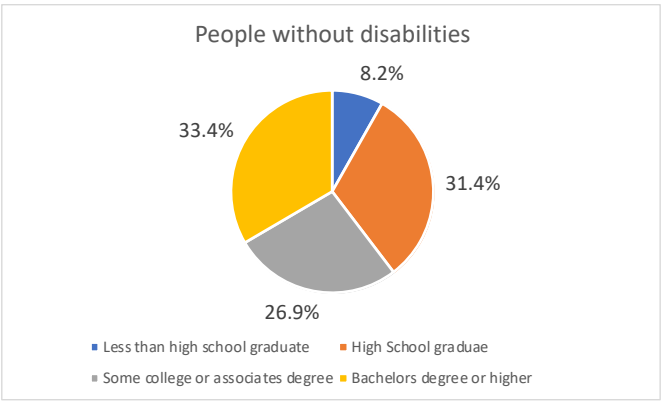
Lehigh



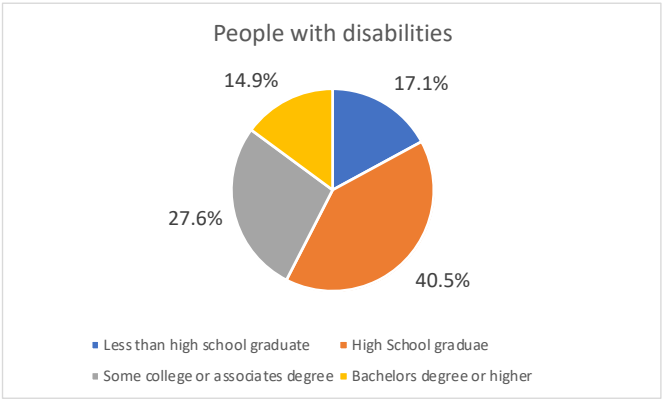


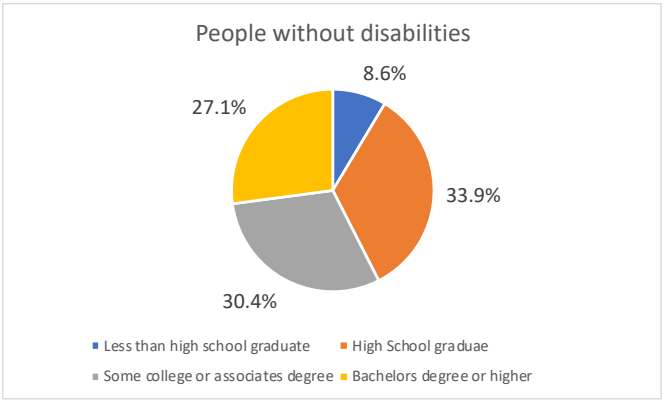
Northampton





Monroe





Source: American Community Survey, five-year estimates, 2019. *Note*: Includes civilian noninstitutionalized population ages 25 and older.

In addition to facing barriers in education and employment, people with disabilities are more likely to be low-income. **Table 4** shows that, in Lehigh County, more than 21% of people with disabilities live below 100% of the federal poverty level (FPL) and an additional 11.5% live between 100 and 149% FPL. More than 13% of people with disabilities in Northampton County leave below 100% of the FPL; and an additional 12% live between 100 and 149 FPL. Finally, in Monroe County, 15.5% of people with disabilities leave under 100% FPL; 13.3% live between 100 and 149FPL.[16]

Table 4. Poverty Status among People with Disabilities, 2019

		Below 100 FPL	*100 to 149 FPL*
Lehigh			
	With a disability	21.3%	11.5%
	Without a disability	8.8%	6.8%
Northampton			
	With a disability	13.6%	12.0%
	Without a disability	6.4%	5.2%
Monroe			
	With a disability	15.5%	13.3%
	Without a disability	9.4%	6.4%

Source: American Community Survey, Five Year Estimate, 2019. *Note*: Includes civilian, noninstitutionalized population ages 16 and older for whom poverty status is determined.

The above discussion about the prevalence of disability across the regional population provides important context for understanding the community health needs of people with disabilities. This is especially the case when it comes to income and poverty status, which are among the most important social determinants of health and can limit opportunities for rehabilitation for many individuals. Descriptive population data from the ACA is only a very small start, however. Population health data, such as the Robert Wood Johnson Foundation's Community Health Rankings (**Appendix III**), are helpful for understanding the relationship between population data and social determinants of health, but do not provide specific insight about the particular needs facing people with disabilities. The CDC's Behavioral Risk Factor Surveillance Survey (BRFSS) includes a six-question disability measure similar to the ACS (identifying visual, hearing, ambulatory, cognitive, self-care, and independent living disabilities and difficulties). Similar to the ACS, however, beyond identifying "being disabled" or "having a disability" as itself a health risk, PA's BRFSS data does not permit for analysis of the health and health

[16] For a point of reference, in 2019, 100% FPL equaled $12,140 annually for a single individual; 150% FPL in 2019 was $18,210.

care of disabled people, especially at the county or metropolitan levels. The cumulative effect of these data related challenges is that it is difficult to empirically link the social determinants of health to health disparities for people with disabilities.

Disability, Diversity, Equity & Inclusion: Community Survey and Stakeholder Forum Findings

Good Shepherd Rehabilitation Network (GSRN) has a long history of supporting research in the interest of improving life for people with disabilities and in strengthening services to patients. Several of their past research efforts include surveys. In 2001, 2008, and 2015 surveys were administered using convenience and snowball sampling techniques to people with disabilities and their families in Lehigh and Northampton counties. For the current CHNA, GSRN commissioned the Muhlenberg College Institute of Public Opinion (MCIPO) to design and administer a general population survey in Lehigh, Northampton, and Monroe counties (**Appendix IV** contains survey questions and response frequencies). The benefit of this approach is that the sampling technique allows for a truly random sample of the population and it allows comparisons between people with and without disabilities.

Ultimately, 1019 respondents completed the survey. The respondent sample was generated using voter registration files and in order to most accurately represent the population of the three-county area, data were weighted by age, race, Hispanic origin, gender, and educational attainment. Based on the sample size, the margin of error for the survey sample is +/- 3 at a 95% confidence interval—in other words, we can be 95% confident that our results are withing approximately 3% of the true population of individuals living in the region. However, the margin of error for subgroups of the sample is larger and, therefore, it is important not to overgeneralize results discussed below, especially when comparing subgroups in the sample. Unless otherwise noted, any statistically significant findings are reported at a p value of <.05. In reported findings below, percentages may not equal 100 due to rounding.

In addition to providing a brief snapshot of individuals' perceptions about their access to health and health care, the primary goals of the 2021 survey include measuring community attitudes toward people with disabilities, gaining deeper understanding about individuals' experiences with discrimination in health care settings, and developing insight about the potential for telehealth/telemedicine to improve access to health and health care.

As a complement to the survey and to gain specific insight from individuals and organizations with expertise in disabilities and with special knowledge about the challenges of underserved communities, two community forums with key stakeholders were convened in early December 2021. When relevant, findings from the community forums are included in the analysis below.[17]

Survey Sample Summary

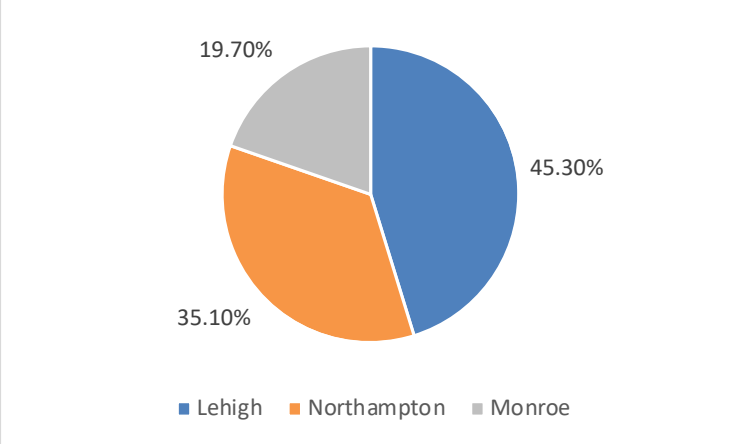
The distribution of survey respondents by county is illustrated in **Figure 8**; a more granular look by zip code and major municipality is seen in **Table 5**. Additional sample characteristics, including frequencies weighted by gender, race, Hispanic status, and education are available in **Appendix V**.

[17] The community forums with key stakeholders were held on Thursday, December 2 and Friday, December 3, 2021 via zoom. A list of organizations represented and framing discussion questions are included in **Appendix II**.

Table 5. Survey Respondents by Zipcode and Major Municipality

Zipcode	No.	%	Municipality	Zipcode	No.	%	Municipality	Zipcode	No.	%	Municipality
LEHIGH ZIPCODES				NORTHAMPTON ZIPCODES				MONROE ZIPCODES			
18011	5	0.5	Alburtis	18013	23	2.2	Bangor	18058	3	0.3	Kunkletown
18018	32	3.1	Bethlehem	18014	18	1.8	Bath	18301	39	3.9	East Stroudsburg
18031	19	1.9	Breinigsville	18015	31	3.0	Bethlehem/Fountain Hill	18302	21	2.1	East Stroudsburg
18032	11	1.1	Catasauqua	18017	29	2.9	Bethlehem/Freemansburg/Butztown	18321	2	0.2	Bartonsville
18034	13	1.3	Center Valley	18020	23	2.3	Bethlehem	18322	3	0.3	Brodheadsville
18036	15	1.5	Coopersburg	18038	5	0.5	Danielsville	18323	1	0.1	Buck Hill Falls
18037	3	0.2	Coplay	18040	26	2.6	Easton/Forks Township	18325	1	0.1	Canadensis
18049	30	2.9	Emmaus	18042	44	4.3	Easton/College Hill/Williams Twp.	18326	7	0.7	Cresco
18051	4	0.4	Fogelsville	18045	35	3.5	Palmer Township/Easton	18327	2	0.2	Delaware Water Gap
18052	20	2.0	Hokendauqua/Whitehall	18055	8	0.8	Hellertown	18330	11	1.1	Effort
18053	1	0.1	Germansville	18064	25	2.5	Nazareth	18332	4	0.4	Henryville
18060	2	0.2	Limeport	18067	27	2.6	Northampton	18334	3	0.3	Long Pond
18062	34	3.4	Macungie	18072	5	0.5	Pen Argyl	18342	2	0.2	Mountainhome
18066	7	0.7	New Tripoli	18083	1	0.1	Stockertown	18344	7	0.6	Mount Pocono
18069	15	1.5	Orefield	18085	3	0.3	Tatamy	18346	1	0.1	Pocono Summit
18078	11	1.1	Schnecksville	18088	10	1.0	Walnutport	18347	1	0.1	Pocono Lake
18079	1	0.1	Slatedale	18091	6	0.5	Wind Gap	18350	2	0.2	Pocono Pines
18080	19	1.8	Emerald/Slatington	18343	7	0.7	Mount Bethel	18353	15	1.5	Saylorsburg
18092	4	0.4	Zionsville					18354	1	0.1	Sciota
18101	1	0.1	Allentown					18360	27	2.6	Stroudsburg
18102	40	3.9	Allentown					18370	2	0.2	Swiftwater
18103	74	7.2	Allentown	Unknown/refused	38	3.7		18372	5	0.5	Tannersville
18104	82	8.1	Allentown					18466	13	1.3	Tobyhana
18106	5	0.5	Allentown/Wescosville					18610	5	0.4	Blakeslee
18109	26	2.5	Allentown								
18180	1	0.1	Allentown								
18201	1	0.1	Hazelton								

Figure 8. Survey Respondents by County



Experiences with Disability

Turning next to consider thematic areas covered in the survey, several questions measured the extent to which respondents have personal experiences with short or long-term disabilities or chronic health conditions, or have had relationships with people with disabilities. The concept of disability is itself multifaceted and encompasses extremely heterogenous experiences. Increasingly, research considers disability as a product of social arrangements and interactions between individuals and the social, economic, political, and cultural environments in which we live. Additionally, emergent models of disability that focus on diversity, often position disability as an aspect of identity, much like race, gender, or sexuality. However, it is important to remember that many people with disabilities do not identify as such, while for others, disability suggests not only a shared identity, but also a shared history and culture.

The World Health Organization (WHO) reports that over 1 billion individuals have a disability. Almost everyone at some point during their life will experience some form of disability, whether short or long term. Many individuals who may not themselves identify as disabled nonetheless may be in close relationship to disabled people, including parents, partners, siblings, co-workers, and friends.

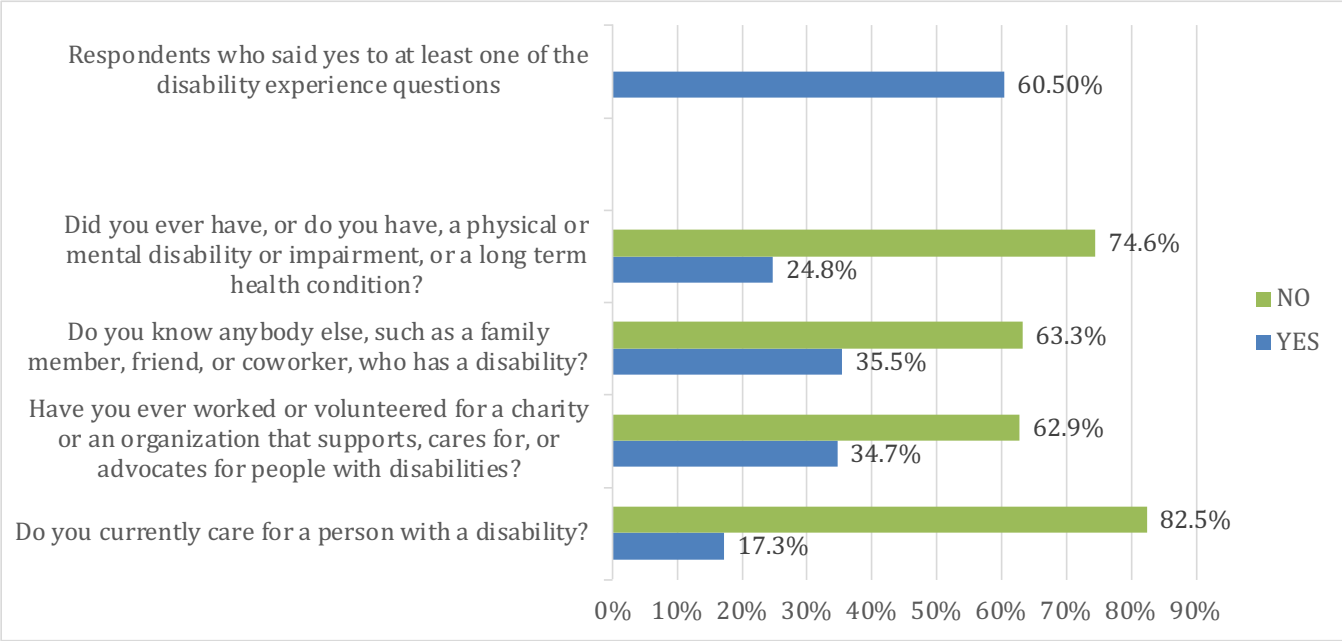
As shown in **Figure 9**, just under 25% of survey respondents report that they have, or have had in the past, a physical or mental disability or impairment or long-term health condition. This figure is very close to national and statewide estimates of the percentage of the population with some kind of disability. The CDC reports, for example, that 26% of adults in the US and 25% of Pennsylvanians have some kind of disability.[18]

More than one-third of survey respondents say that they know another person (a family member, friend, or coworker) who has a disability. Close to 35% of respondents say that they have worked or

[18] Centers for Disease Control and Prevention, Disability and Health Data System, https://www.cdc.gov/ncbddd/disabilityandhealth/dhds/index.html.

volunteered for an organization that supports or advocates for people with disabilities. Finally, 17.3% of survey respondents report currently caring for a person with disability (whether paid or unpaid). Considering these questions collectively, approximately 61% of respondents answered yes to one of these four questions, suggesting that the vast majority of individuals have some degree of experience with disability and/or personal connections to disabled people.

Figure 9. Respondents' Experiences with Disability



Disability, Diversity, Equity & Inclusion

Disability is an important dimension of diversity. Broad definitions of diversity include not only race, ethnicity, gender, but also age, disability, religion, sexuality, education—all aspects of social difference and emphasize the social identities that connect us to others. Valuing diversity means valuing differences, and empowering individuals by respecting and appreciating them for who they are. Equity in the context of disabilities requires equal access to health care, to employment, to education, to community, and to meaningful relationships. In even broader terms, equity refers to fair and just practices and policies that ensure all community members can thrive. Therefore, equity requires a collective commitment to working activity to challenge and respond to bias, discrimination, and harassment. In the literature on disability and disabilities studies, concepts such as "access" and "accessible" also convey broader arguments about rights and opportunities, drawing attention to the external barriers that prevent individuals from gaining access to resources, such as health care, housing, employment, and transportation.

Inclusion in this context is a state of being valued, respected and supported. Inclusion is reflected in our cultures, practices, and relationships—it is a process of creating an environment that recognizes, appreciates, and effectively utilizes the talents, skills, and perspectives of everyone. The concept of inclusion, at its core, suggests that people with disabilities—just like all people—have beneficial capabilities that should be enabled through access to social structures. Despite the fact that more social and relational approaches to understanding disability have gained increasing prominence, ableism, or the negative attitudes and prejudice toward people with disabilities, remains deeply entrenched in our society. Negative attitudes toward disability and toward disabled people are important because they can undermine, rather than empower, individuals with disabilities, contributing to social exclusion and isolation. Healthy and inclusive communities encourage positive attitudes toward people with disabilities.

The CHNA survey included several questions designed to measure respondents' perceptions about community inclusion for people with disabilities. While these questions do not allow for unpacking potential implicit biases, they are a useful starting point for measuring disabled people's experiences with ableism and for thinking about broader community perceptions.

Taking a look at **Figure 10**, overall community perceptions with respect to inclusion appear to be fairly positive with large majorities agreeing or strongly agreeing with the statements: *Most people would willingly accept a person with a disability as a close friend* (84.5%); *Most people believe people with disabilities are just as intelligent* (81.5%) and *trustworthy* (87.5%) as the average person; and *People in my community would treat a person with a disability just as they would treat the average person* (76%).

Compared to respondents who have never had a disability, respondents with disabilities were generally no less positive in their agreement with statements about inclusion, with two exceptions. As shown in **Figures 11 and 12**, respondents with personal experiences with disabilities (i.e., respondents who currently have or have had a disability or long-term health condition), convey more negative views. For example, respondents with disabilities were less likely to agree with the statement, "*Most people in my community would treat a person with a disability just as they would treat the average person*." Perhaps more dramatically, more than one-half of disabled respondents agreed with the statement, "*Most people think less of a person with a disability*," compared to more than one-half of respondents without disabilities who disagreed with this statement.

In fact, when it comes to perceptions about community inclusion of people with disabilities—reflected in the statement, "*Most people in my community would treat a person with a disability just as they would treat the average person*"—respondents with any experience with disability (whether personal experience or experience through a friend, family member, or coworker) are less likely to agree when compared to individuals without any experience with disabilities. This is shown in **Figure 13**.

Figure 10. Respondents' Perceptions of Community Inclusion for People with Disabilities

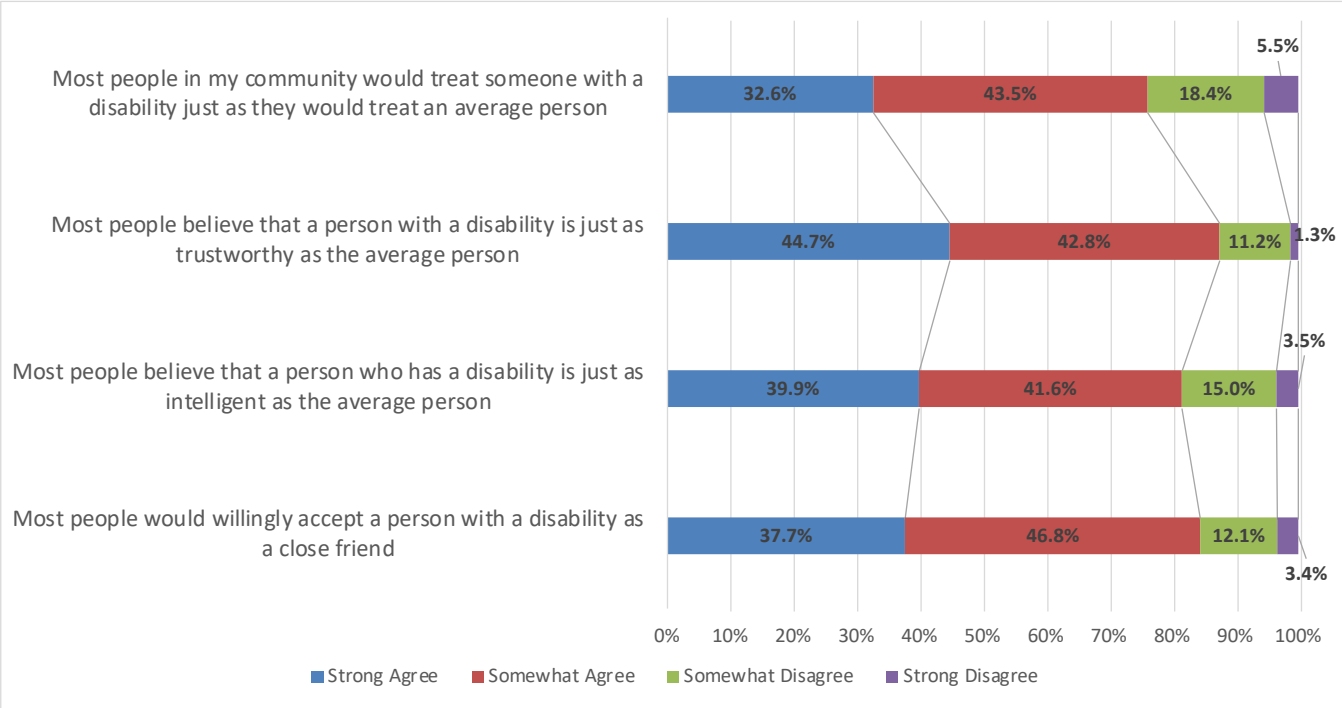
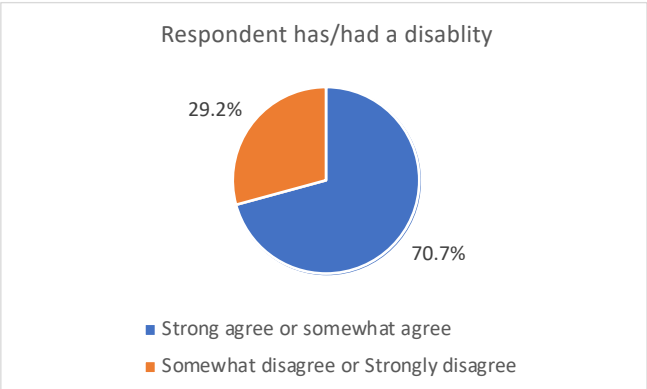


Figure 11. "Most people in my community would treat a person with a disability just as they would treat the average person": Respondents with and without disabilities



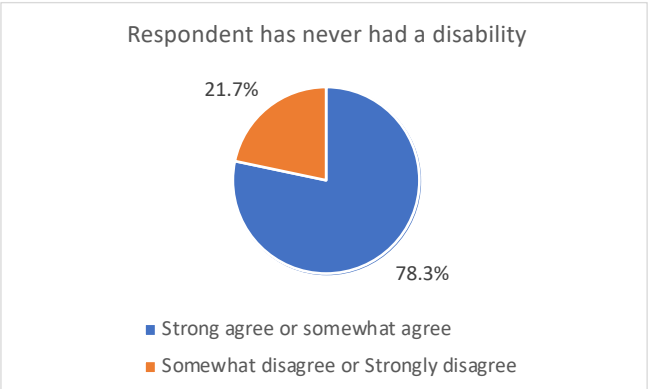


Figure 12. "Most people think less of a person with a disability": Respondents with and without disabilities

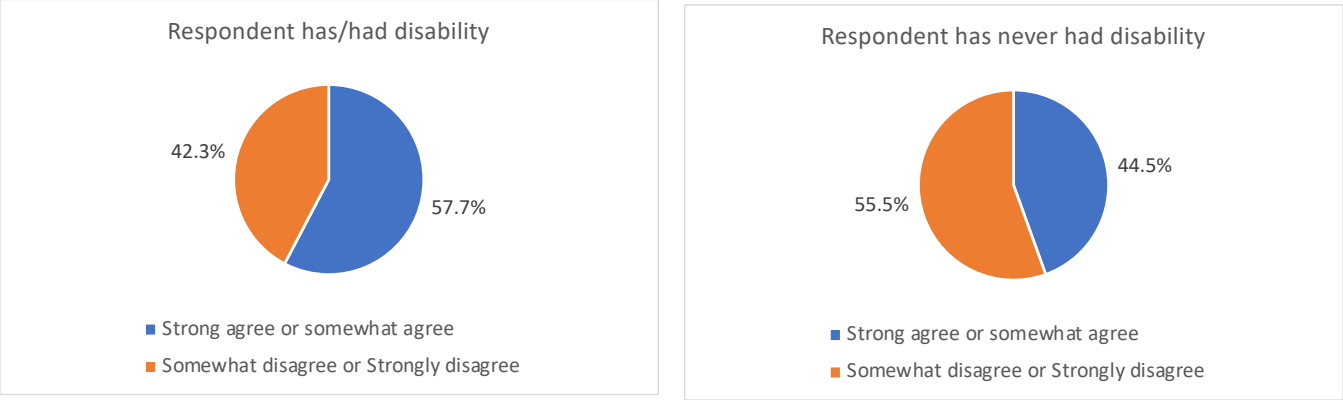
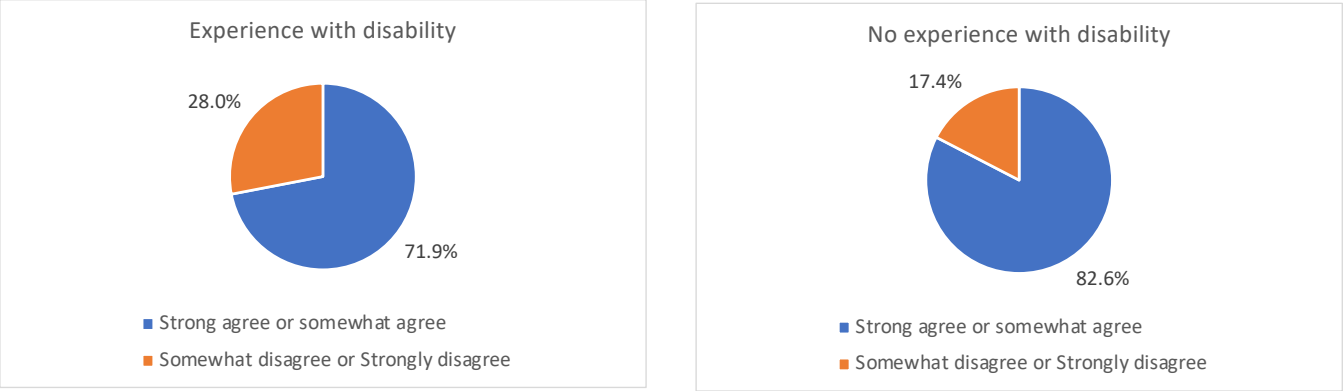


Figure 13. "Most people in my community would treat a person with a disability just as they would treat an average person": Respondents with and without any experience with disability



Interestingly, survey respondents also differ in their perceptions about inclusion by county, as seen in **Figure 14**. On two measures—*Most people would willingly accept a person with a disability as a close friend*, and *Most people in my community would treat someone with a disability just as they would treat an average person*—respondents from Monroe offered more positive responses when compared to respondents from Lehigh and Northampton counties. It's important to keep in mind that due to population size across each county, a smaller number of respondents are from Monroe County and a higher margin of error characterizes cross-county comparisons. Recalling the ACS data reported above (**Figures 2 and 3**), a higher percentage of the population has a disability in Monroe, compared to Lehigh and Northampton counties. Monroe is smaller in overall population and is a more rural county compared to the two other counties in the region. The survey findings cannot offer definitive conclusions about the relationship between county geographies and perceptions of inclusiveness—it is not possible to determine, for example, whether positive perceptions reflect higher levels of

inclusiveness or lower levels of awareness about ableism (both could contribute to more positive respondent answers). At a minimum, these findings suggest that regional variation is an area worthy of future research, especially to the extent that disability is understood as a consequence of individual-environmental interactions.[19]

Figure 14. "Most people would willing accept a person with a disability as a close friend" by Respondent County

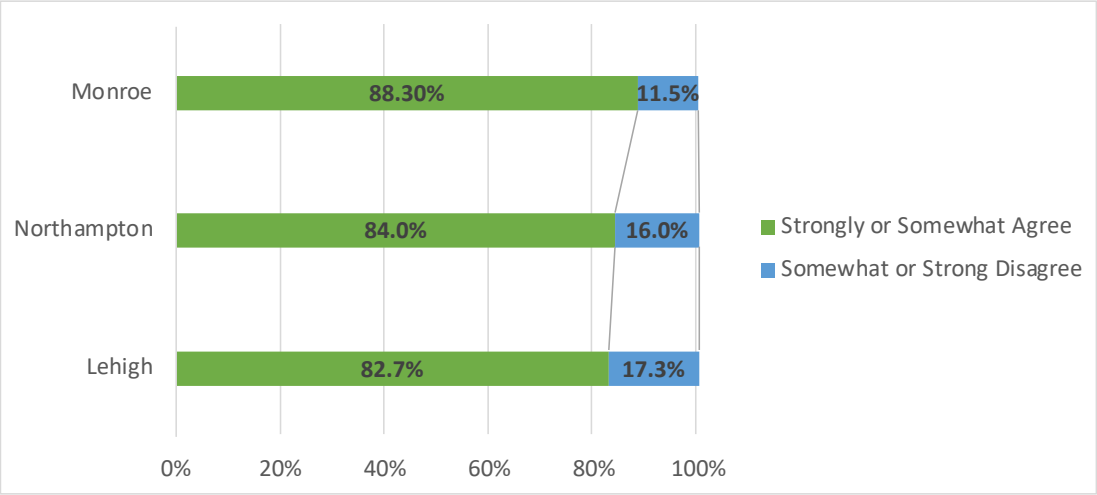
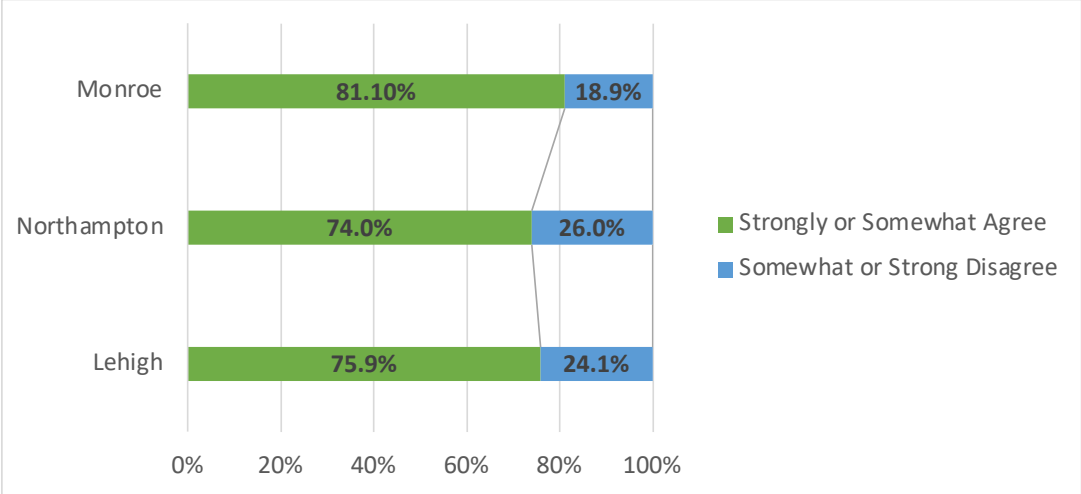


Figure 15. "Most people in my community would treat someone with a disability just as they would treat an average person" by Respondent County



[19] Although it is beyond the scope of this CHNA, it is possible that these findings are linked to rural-urban differences and/or to local area socio-economic status, which may interact with the prevalence of disability in different geographies. An additional possible direction for future research would be measuring disability inclusion at the county or municipal levels using a Disability Inclusion Performance Index (DIPI) and/or a Disability Inclusion Evaluation Tool (DIETool) such as those proposed by Rebernik, et. Al., "Measuring Disability Inclusion Performance in Cities using Disability Inclusion Evaluation Tool (DIETool), *Sustainability* 12 (4): **https://doi.org/10.3390/su12041378**.

Respondent's perceptions of community inclusion of disabled people are related to several demographic variables in complex and interesting ways, as seen in **Table 6**. The survey did not find any significant differences between men and women when it comes to perceptions of inclusion for people with disabilities. There are interesting differences, however, when it comes to race, ethnicity, education, and age. For example, when compared to non-Latino respondents, Latino respondents were less likely to agree with the statements, *Most people believe that a person with a disability is just as trustworthy as the average person* and *Most people in my community would treat someone with a disability just as they would great an average person.* Asian respondents and respondents who selected "some other race" generally have lower levels of agreement about inclusion compared to whites and African Americans, although African Americans convey lower levels of agreement with the statement *Most people believe that a person with a disability is just as trustworthy as the average person*.[20]

Education is related to perceptions about community attitudes on two measures—*Most people believe that a person with a disability is just as intelligent as the average perso*n and *Most people in my community would treat sometime with a disability just as they would treat a close friend*. In both cases, educational attainment is generally associated with higher levels of agreement. Similarly, age is positively associated with more positive views; such that older respondents convey more agreement with inclusive statements compared to younger respondents.

[20] The category "some other race" may hold special significance for communities in the three-county area that are experiencing growing populations of individuals from Southwest Asia, the Middle East, and Northern Africa.

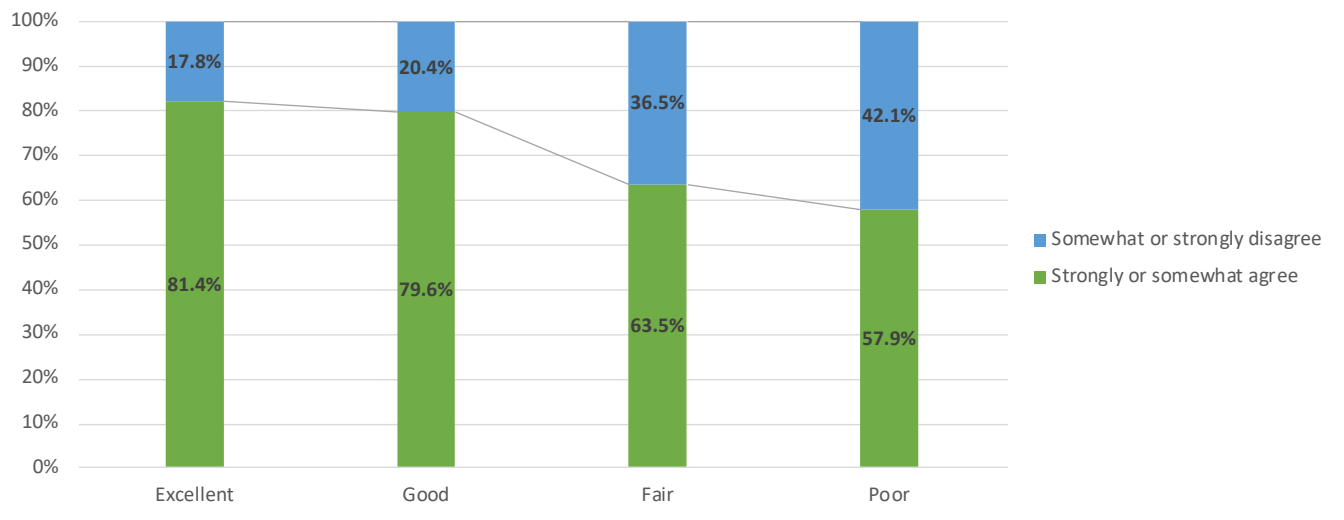
Table 6. Respondents' Perceptions toward Disability Inclusion by Sex, Latino, Race, Education, and Age

	Most people would willingly accept a personal with a disability as a **close friend**		Most people believe that a person with a disability is just as **intelligent** as the average person		Most people believe that a person with a disability is just as **trustworthy** as the average person		Most people in my community would treat someone with a disability just as they would **treat an average person**	
	Strong or somewhat agree	Somewhat or strongly disagree	Strong or somewhat agree	Somewhat or strongly disagree	Strong or somewhat agree	Somewhat or strongly disagree	Strong or somewhat agree	Somewhat or strongly disagree
Men	84.0%	16.0%	82.3%	17.7%	87.8%	12.2%	75.0%	25.0%
Women	84.9%	15.1%	80.7%	19.3%	87.3%	12.7%	77.0%	22.9%
Hispanic or Latino	81.5%	18.5%	80.5%	19.5%	85.0%	15.0%	70.4%	29.7%
No Hispanic or Latino	85.1%	14.9%	81.7%	18.3%	88.2%	11.9%	77.5%	22.5%
White	85.7%	14.2%	82.1%	17.9%	89.0%	11.0%	77.3%	22.8%
Black/African American	86.9%	13.1%	82.6%	17.3%	77.8%	22.2%	74.5%	25.5%
Asian[+]	70.0%	30.0%	77.4%	22.6%	83.5%	16.1%	60.0%	40.0%
American Indian/Native Alaskan^	83.3%	16.7%	83.3%	16.7%	83.3%	16.7%	66.7%	33.3%
Some other race*	61.9%	38.1%	66.7%	33.3%	80.4%	19.5%	71.5%	28.5%
Some high school	82.5%	17.2%	94.9%	5.1%	93.1%	6.9%	83.0%	16.9%
High school degree or equivalent	86.6%	13.1%	84.2%	15.7%	88.7%	11.4%	83.1%	17.0%
Associate degree or some college	82.5%	17.5%	81.1%	18.9%	86.4%	13.6%	70.3%	29.7%
College degree	84.7%	15.3%	77.0%	23.0%	87.1%	12.9%	72.1%	27.3%
Post graduate degree	83.0%	17.0%	74.8%	25.2%	85.0%	15.0%	72.2%	27.7%
18-24	83.2%	16.8%	63.9%	36.1%	76.1%	23.6%	70.4%	29.7%
25-44	79.5%	20.6%	75.4%	24.6%	85.6%	14.5%	72.9%	27.1%
45-64	84.8%	15.2%	84.8%	15.2%	88.6%	11.4%	76.4%	23.6%
65 and older	89.0%	11.0%	91.0%	9.0%	92.6%	7.5%	81.3%	18.8%

[+] 31 survey respondents selected Asian for this question; ^ 6 survey respondents identified as Native American or Alaskan Native; * 41 respondents selected "some other race". The survey sample was weighted by race and Latino.

Some past research suggests that disability type, and perhaps disability severity, are linked to public attitudes toward people with disabilities and to negative experiences and discrimination experienced by disabled people. Although the survey did not ask respondents about either disability type or severity, it did include a general question about overall health. Findings (**Figure 16**) show that overall health status is linked to perceptions of inclusiveness for people with disabilities; respondents who rated their own health as fair or poor expressed more disagreement compared to respondents who rated their health as excellent or good.

Figure 16. "Most people in my community would treat a person with a disability just as they would treat an average person" & Respondent Health Status



While it is generally accepted that negative attitudes toward people with disabilities, and toward disability itself, are a major barrier to social equality, past research is less clear on the causes of negative attitudes or on the solutions. In general, past research suggests that knowledge about disabilities and frequent interactions with disabled people are associated with more positive and inclusive attitudes. The research is less clear when it comes to the role of other variables including, for example, age and educational attainment.[21]

During key stakeholder meetings, participants were asked to think about the ways that community perceptions shape inclusion for people with disabilities and to identify steps that our communities can take to fight against stereotypes and ableist thinking. The role of relationships—increasingly familiarity with disability and building relationships with disabled people—was key. One participant noted, "*I think what's needed is for people to form relationships with persons with disabilities.*" Others noted that communities "*need to create opportunities*" for relationships to form; this is especially the case

[21] One exception to this is Wang, Z., Xu, X., Han, Q. *et al.* Factors associated with public attitudes towards persons with disabilities: a systematic review. *BMC Public Health* 21**,** 1058 (2021). https://doi.org/10.1186/s12889-021-11139-3.

because people without experience with disabilities may be hesitant to reach out to disabled people "*because they are afraid they will do the wrong thing*." Education, the group suggested, is key to acceptance.

Another theme that emerged from discussions with key stakeholders centered on making disabled people visible as leaders in the community. There is important cultural and education value in having people with disabilities occupy positions of leadership in business, community organizations, elected offices, and schools.

Finally, if there was a clear consensus among key stakeholders it was that in each and every case of attention to or discussion of DEI—diversity, equity, and inclusion—that "*disability has to be a part of that discussion or we're missing something*." "*Diversity means all aspects of people*," as one stakeholder put it; disability is integral to diversity, equity, and inclusion and it its inclusion in DEI efforts is necessary "*to recognize and use the diverse gifts of people with disabilities*."

Health, Health Care & Experiences of Discrimination in Health Care Settings

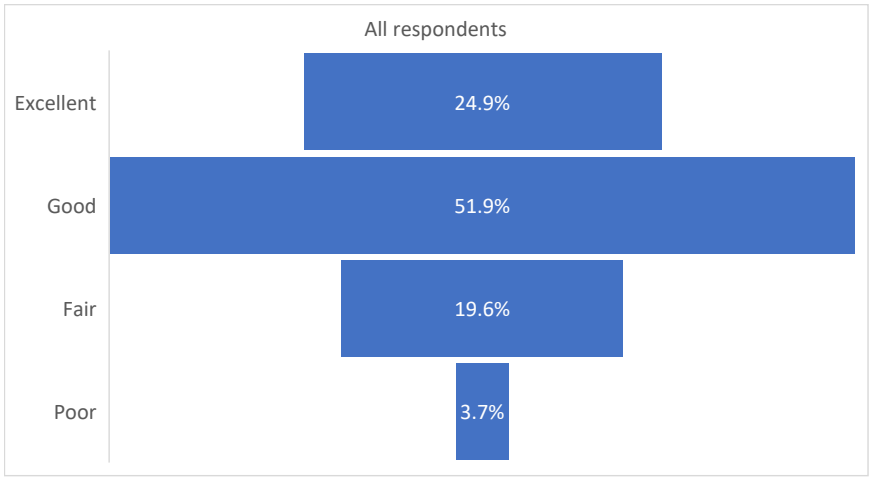
A majority of survey respondents rate their overall health in positive terms. About one-quarter of respondents rate their overall health as excellent; another 52% rate their overall health as good. Respondents provide similarly positive assessments of the quality of health care they receive, with 46.4% saying they are very satisfied and an additional 40.8% saying they are somewhat satisfied. These findings are consistent with other community surveys that have found residents in our region—particularly in the Lehigh Valley—rate their own health and the quality of their health care very favorably.

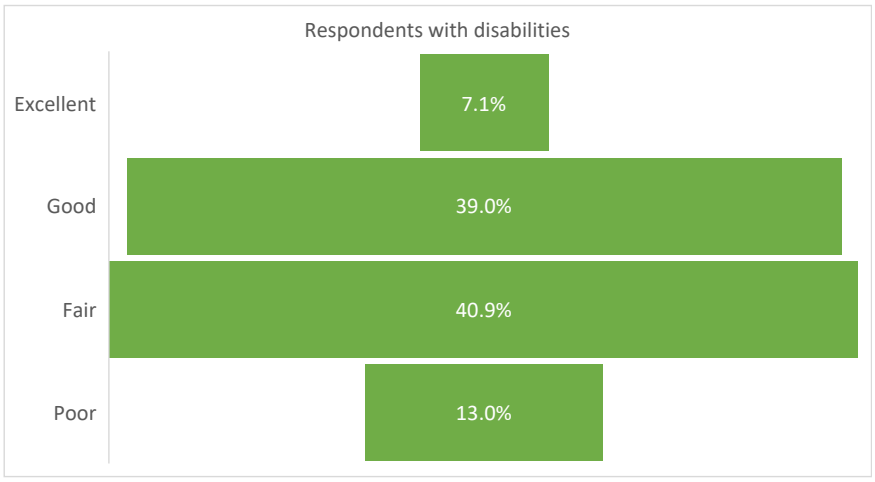
There are important differences, however, between people with disabilities and people without disabilities. **Figure 17** shows that people with disabilities are much less likely to rate their own health as excellent and are significantly less likely to rate their health as good compared to people without disabilities. More than 40% of respondents with disabilities say their overall health is fair and an additional 13% rate it as poor—fewer than 1% of nondisabled respondents report their health as poor.

A clear indication of the relationship between health and the social determinants of health, respondent income is also related to evaluations of overall health, as shown in **Figure 18**.

The survey asked respondents to indicate whether there was a time in the past 12 months when they needed, but were unable to obtain, health care or health care services. **Table 7** highlights the most significant findings. People with disabilities were significantly more likely to say yes, that there was a time in the past year when they needed but were unable to obtain health care. Income is clearly related to this measure as well; low-income respondents were more likely than higher-income respondents to report being unable to obtain health care in the past year.

Figure 17. Respondents' Evaluation of Overall Health & Disability





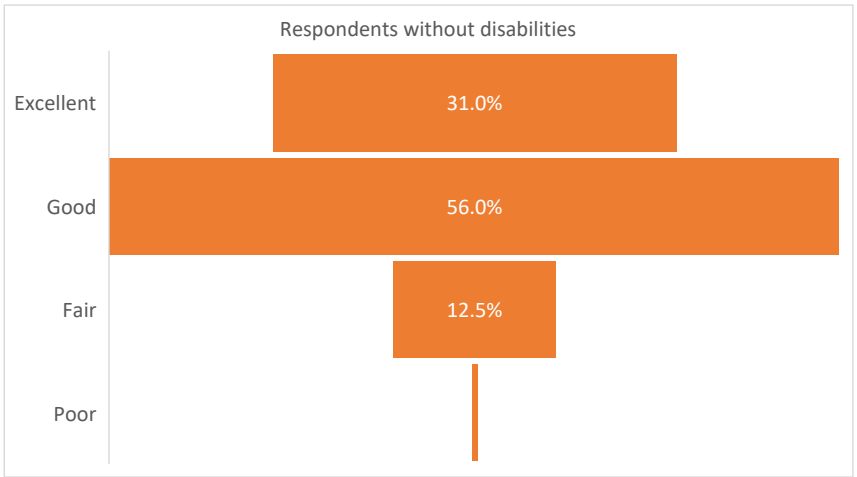


Figure 18. Respondents' Evaluation of Overall Health & Income

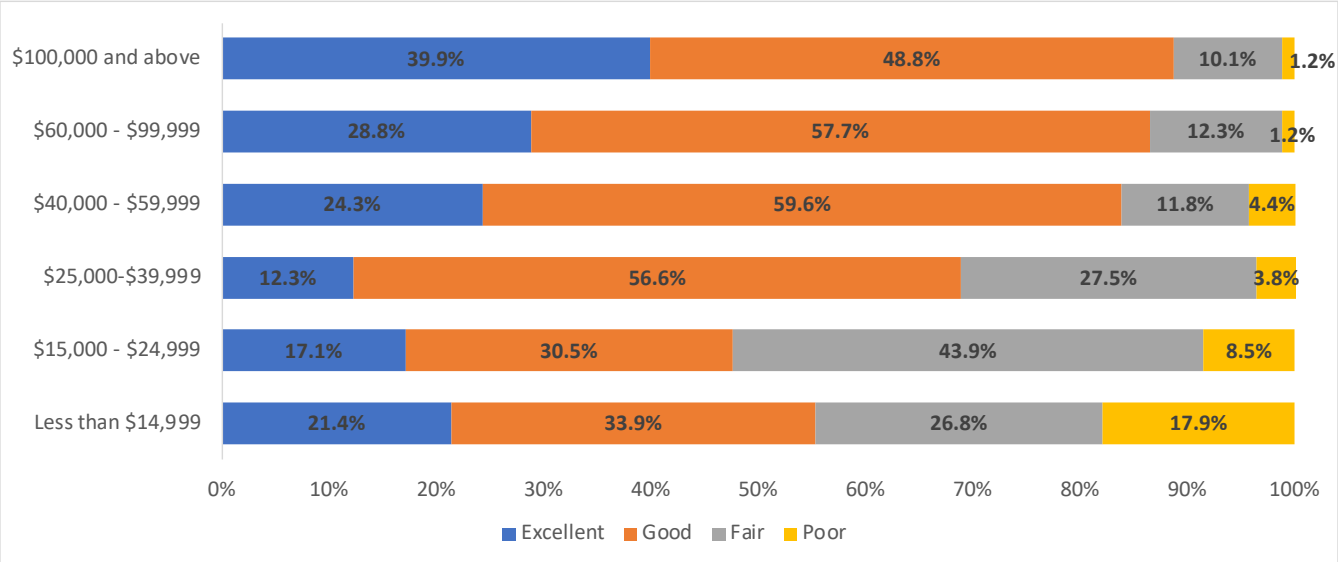


Table 7. Percentage of Respondents who needed, but were unable to obtain, health care or health services in past 12 months

All respondents	13.5%
Respondents with disabilities	24.1%
Respondents without disabilities	10.0%
Less than $14,999	32.3%
$15,000 - $24,999	25.6%
$25,000-$39,999	11.1%
$40,000 - $59,999	9.5%
$60,000 - $99,999	13.4%
$100,000 and above	9.5%

In addition to facing access barriers, including those related to transportation, communication, and (potentially) social mitigation measures due to the COVID-10 pandemic, people with disabilities may face additional barriers related to bias and discrimination within the health care system. Recent research suggests that experiences of discrimination in the health care system are more widespread than was perhaps previously understood. For example, individuals face discrimination in health care due to race and/or ethnicity, educational attainment, income level, weight, and age. Experiences with

interpersonal discrimination may interact with structural inequities and the social determinants of health.[22]

The COVID-19 pandemic heightened implicit and explicit biases about disabled individuals held by individuals in the medical and health care fields. One recent study suggested 82% of physicians in the US believe that people with disabilities have a lower quality of life than people without disabilities.[23] As one key stakeholder noted during a community forum, the pandemic brought to the forefront the way that medical professionals "value life": *Healthcare providers themselves have said they've struggled to allocate scarce resources in some large cities …they've had to look at the value of life and we really need to change that way of thinking that, you know, someone with an apparent disability is not worthy.* It is for these reasons that the chair of the National Council on Disability has suggested that foremost among responses against disability discrimination is disability cultural competency training in all medical and professional schools.

Similar themes emerged during key stakeholder meetings; one participant noted that there is a "*lack of training*" and "*poor understanding*" among health care workers. This is manifest when, for example, medical professionals are unfamiliar with treating patients with autism, or when nurses and doctors who "*don't listen to*" people with disabilities or "*don't take them seriously*" as patients with insight into their own health. Some participants noted that they faced inaccessible exam rooms or tables. Another participant asked: *Are there people in the medical profession that have disabilities?* They suggested that a lack of visibility makes a difference and "*it's a barrier to understanding and better identification*" for disabled individuals in health care settings. Indeed, previous research has suggested that increasing the number of health care professional with disabilities would be a step toward improving health equity for disabled people.[24]

Table 8 summarizes respondents' reported experiences of discrimination, or unfair treatment or judgement, from medical professionals due to race or ethnicity, gender, a disability, or a health condition. Across all categories—race/ethnicity, gender, disability, health condition—respondents with disabilities were more likely to report experiencing discrimination when compared to respondents without disabilities. Respondents who are low-income and who report lower-levels of educational attainment were more likely to say that they have been treated unfairly due to a disability or to a health condition. These findings are consistent with past research and suggest that experiences of discrimination in health care settings are not uncommon, particularly among already vulnerable populations. These findings also suggest that disability intersects with other aspects of identity in important ways.

[22] Nong, Paige et al. "Patient-Reported Experiences of Discrimination in the US Health Care System." *JAMA network open* vol. 3,12 e2029650. 1 Dec. 2020, doi:10.1001/jamanetworkopen.2020.29650

[23] Gallegos, Andres, "Misperceptions of People with Disabilities Lead to Low-Quality Care: How Policymakers Can Counter the Harm and Injustice," Health Affairs, April 1, 2021.

[24] Jain, N.R. *Disability as Diversity*, Spring, Switzerland 2020.

Table 8. Percentage of respondents who, in the past 12 months, felt that a doctor, or other health care provider, or their staff judged them unfairly or discriminated against them because of:

	their race or ethnicity	***their gender***	***a disability***	***a health condition***
All respondents	3.7%	2.4%	2.8%	5.4%
Respondents with a disability	7.5%	5.5%	8.7%	15.4%
Respondents without a disability	2.4%	1.4%	0.7%	2.0%
Men	3.6%	1.0%	2.8%	4.8%
Women	3.9%	3.9%	2.7%	6.0%
White	3.3%	2.3%	3.0%	5.2%
Black/African American	5.1%	5.1%	0.0%	3.0%
Asian	6.7%	3.2%	6.7%	6.7%
American Indian or Native Alaskan	0.0%	0.0%	16.7%	17.6%
Some Other Race	2.4%	0.0%	0.0%	11.9%
Hispanic or Latino	9.0%	4.5%	3.0%	6.5%
Not Hispanic or Latino	2.3%	2.5%	2.7%	5.1%
Some high school	8.6%	0.0%	5.2%	13.6%
High School Degree or Equivalent	3.8%	2.3%	2.3%	6.1%
Associate Degree or Some College	3.0%	2.3%	3.3%	6.6%
College Degree	3.7%	3.2%	2.3%	2.8%
Post Graduate Degree	3.0%	3.0%	2.0%	1.0%
Less than $14,999	7.3%	7.3%	7.1%	7.3%
$15,000 - $24,999	4.9%	3.7%	6.2%	16.0%
$25,000-$39,999	7.4%	1.9%	3.7%	6.5%
$40,000 - $59,999	3.6%	2.2%	2.9%	4.4%
$60,000 - $99,999	3.0%	3.0%	1.8%	3.1%
$100,000 and above	3.0%	1.8%	0.6%	1.2%
18-24	0.0%	3.7%	0.9%	2.8%
25-44	6.2%	3.3%	3.6%	5.8%
45 - 64	5.4%	3.0%	2.7%	6.9%
65 and over	0.8%	0.4%	2.4%	3.9%

Telehealth

People with disabilities and chronic health conditions are at increased risk during times of emergency. The American Association on Health & Disability conducted a Covid-19 & Disability survey (C-19 & D), to examine the consequences of the COVID health pandemic for people with disabilities. The survey found that 23% of disabled people who used a direct care worker (e.g., home health aid, personal care aid, unpaid family giver) stopped receiving direct care during the Spring of 2020, when stay at home orders and other social mitigation policies were in place across the nation. Similarly, more than one-third of C-19&D respondents said that they were unable to receive their regularl health care treatment and more than 44% said that they encountered new challenges in obtaining health care during this time.[25]

Telehealth, or telemedicine, refers to using electronic communication technologies for health care communication and services and can include the delivery of health care, health education, and health information via remote technologies. Telehealth may have the potential to overcome physical and transportation related barriers to patients and caregivers, thereby increasing access to medical care. In March 2020, the CDC recommended that health care facilities offer clinical services through telehealth to the extent possible. The use of telehealth immediately doubled; over a three-month period, the number of telehealth visits increased by more than 150%.[26]

More than one-half of survey respondents say that they have previously had a telehealth or telemedicine appointment. This number exceeds 61% among people who say they have (or have had in the past) a disability or chronic health condition. Women respondents are more likely to have previous experience with telehealth. There are interesting patterns with respect to education and age, as well, although neither is perfectly related to telehealth experiences. As shown in **Table 9**, respondents with higher educational attainment are generally more likely to have experience with telehealth. The same is true of older respondents. No meaningful differences were observed among respondents by race or ethnicity or county of residence.

The survey did not ask respondents when, or why, they previously sought telehealth services. The survey did, however, as respondents to identify the primary benefit of their telehealth experience and the most common response—selected among 39% of respondents (**Figure 19**)—was that it allowed them to avoid crowds in waiting rooms and other spaces (this finding was essentially the same for respondents with disabilities and those without disabilities).

[25] American Association of Health & Disability, COVID-19 & Survey of Adults with Disabilities: Health and Heath Care Access," https://www.aahd.us/wp-content/uploads/2020/05/COVID-19_Summary_Report.pdf

[26] Koonin, et. al., "Trends in the Use of Telehealth during the Emergence of the COVID-19 Pandemic—United States, January-March 2020," US Department of Health and Human Services, Centers for Disease Control and Prevention, MMWR, October 30, 2020, Vol. 69, No. 43.

Table 9. Percentage of respondents who have had a virtual health-related, or telehealth, appointment

All respondents	52.5%
Respondents with a disability	61.8%
Respondents without a disability	48.9%
Men	46.9%
Women	57.2%
Some High School	41.4%
High School Degree or Equivalent	38.0%
Associate Degree or Some College	60.1%
College Degree	58.8%
Post Graduate Degree	69.0%
18-24	42.6%
25-44	57.8%
45 - 64	54.0%
65 and over	46.1%

Figure 19. Respondents on Benefits of Telehealth

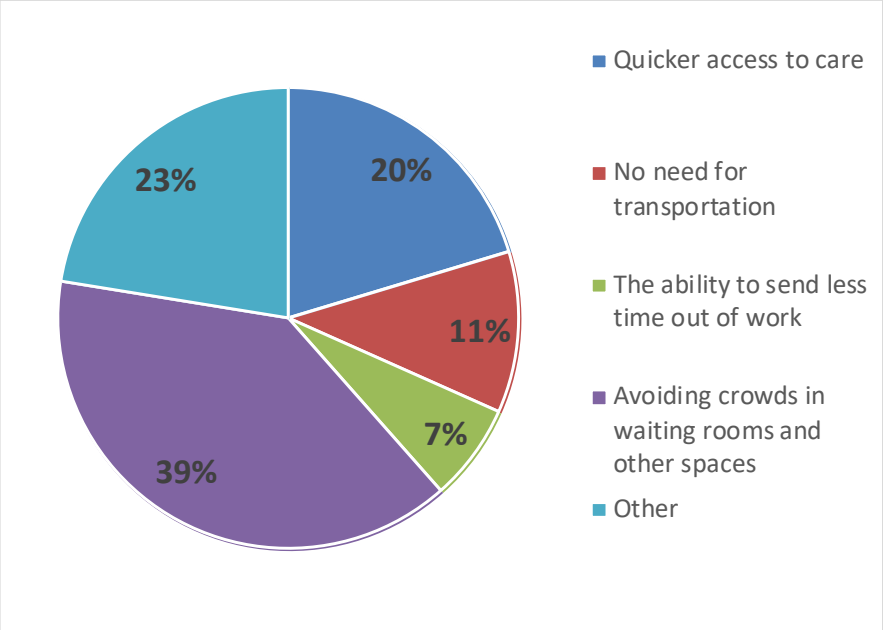
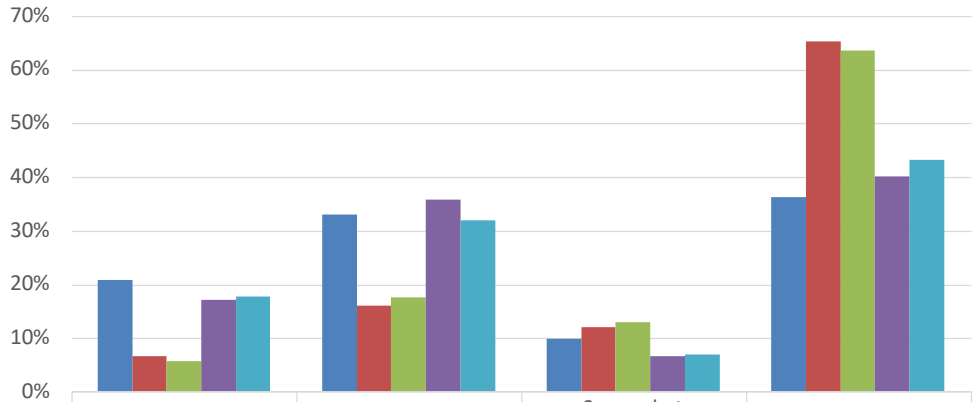


Figure 20. How interested would you be in telehealth, or virtual online visits, for the following kinds for health-related services if they were available?



	Very interested	Somewhat interested	Somewhat uninterested	Not at all interested
Doctors and medical office visits	20.8%	33.0%	9.9%	36.3%
Therapuetic services such as physical therapy and rehabilitation	6.7%	16.0%	12.0%	65.4%
Occupational therapy	5.7%	17.6%	13.0%	63.7%
Support groups	17.2%	35.9%	6.7%	40.2%
Mental health care or counseling	17.8%	32.0%	7.0%	43.2%

Survey respondents were asked to consider if they would be interested in additional telehealth services if they were available to them, including doctors' and medical office visits, therapeutic services, occupational therapy, support groups, and mental health care (**Figure 20**). Of all these options, doctors' visits, support groups, and mental health care garnered support from a majority of respondents; fewer report interest in occupational therapy or therapeutic telehealth services.

One concern is that, absent careful attention in implementation, telehealth could exacerbate existing health inequities—especially those defined by age, rural geographies, and low-income. Disability is a diverse and heterogeneous part of the human experience and not all forms of telehealth care are appropriate for all individuals. Video based telehealth may remain inaccessible to many individuals with communication-related disabilities, for example. Elderly caregivers for adults with disabilities may have difficulty accessing the technology required for telehealth visits. With these sorts of limitations in mind, one clear benefit of telehealth, as one stakeholder noted, is that it "*made it possible for people who might be more isolated or have a fear of going out because of their vulnerability to catching COVID."* But, telehealth cannot replace everything. Of special concern is "*access to technology to make the telehealth possible*: *we do see people who live in very rural areas who just don't have wifi,[who] don't have access to the internet*."

APPENDICES

Appendix I.

Population with a disability in municipalities of Lehigh, Northampton, and Monroe Counties

Lehigh

	Total Population	With a disability	Percent with a disability
Alburtis Borough	2,550	255	10.0%
Allentown City	118,611	20,322	17.1%
Bethlehem City	19,015	2,662	14.0%
Catasauqua Borough	6,658	821	12.5%
Coopersburg Borough	2,306	286	12.4%
Coplay Borough	3,201	371	11.6%
Emmaus Borough	11,391	1,547	13.6%
Fountain Hill Borough	4,454	684	15.4%
Hanover Township	1,679	282	16.8%
Heidelberg Township	3,499	464	13.3%
Lower Macungie Township	32,026	3,216	10.0%
Lower Milford Township	3,963	397	10.0%
Lowhill Township	2,222	1,977	8.9%
Lynn Township	4,373	464	10.6%
Macungie Borough	3,155	286	9.1%
North Whitehall Township	16,188	2,086	12.9%
Salisbury Township	13,465	1,601	11.9%
Slatington Borough	4,291	885	20.6%
South Whitehall Township	19,232	1,951	10.1%
Upper Macungie Township	24,063	2,346	9.7%
Upper Milford Township	7,718	739	9.6%
Upper Saucon Township	16,721	1,457	8.7%
Washington Township	6,695	866	12.9%
Weissenberg Township	5,162	494	9.6%
Whitehall Township	27,415	3,788	13.8%

Northampton

	Total Population	With a disability	Percent with a disability
Allen Township	4,928	534	10.8%
Bangor Borough	5,208	1,153	22.1%
Bath Borough	2,643	485	18.4%
Bethlehem City	55,571	7,535	13.6%

Bethlehem Township	23,722	2,617	11.0%
Bushkill Township	8,446	746	8.8%
Chapman Borough	177	23	13.0%
East Allen Township	4,903	854	17.4%
East Bangor Township	991	135	13.6%
Easton City	26,258	3,752	14.3%
Forks Township	15,452	1,525	9.9%
Freemansburg Borough	2,622	334	12.7%
Glendon Borough	466	86	18.5%
Hanover Township	11,494	1,294	11.3%
Hellertown Borough	5,774	622	10.8%
Lehigh Township	10,411	1,212	11.6%
Lower Mount Bethel Township	3,071	455	14.8%
Lower Nazareth Township	6,265	447	7.1%
Lower Saucon Township	10,729	1,258	11.7%
Moore Township	9,317	1,243	13.3%
Nazareth Borough	5,667	889	15.7%
Northampton Borough	9,847	1,665	16.9%
North Catasauqua Borough	2,831	316	11.2%
Palmer Township	21,127	2,095	9.9%
Pen Argyl Borough	3,505	378	10.8%
Plainfield Township	6,194	836	13.5%
Portland Borough	600	34	5.7%
Roseto Borough	1,968	206	10.5%
Stockertown Borough	999	129	12.9%
Tatamy Borough	1,078	134	12.4%
Upper Mount Bethel Township	6,853	694	10.1%
Upper Nazareth Township	6,084	451	7.4%
Walnutport Borough	2,011	267	13.3%
Washington Township	5,118	640	12.5%
West Easton Borough	1,324	144	10.9%
Williams Township	6,073	787	13.0%
Wilson Borough	7,739	1,160	15.0%
Wind Gap Borough	2,720	349	12.8%

Monroe

	Total Population	**With a disability**	**Percent with a disability**
Barrett Township	4,096	506	12.4%
Chestnuthill Township	16,671	2,252	13.5%

Collbaugh Township	20,325	3,404	16.7%
Delaware Water Gap Borough	699	109	15.6%
East Stroudsburg Borough	10,203	1,786	17.5%
Eldred Township	2,776	386	13.9%
Hamilton Township	8,301	1,250	15.1%
Jackson Township	6,865	895	13.0%
Middle Smithfield Township	15,694	2,444	15.6%
Mount Pocono Borough	3,077	566	18.4%
Paradise Township	3,111	411	13.2%
Pocono Township	10,909	1,456	13.3%
Polk Township	7,686	1,070	13.9%
Price Township	3,641	614	16.9%
Ross Township	5,831	584	10.0%
Smithfield Township	7,457	1,071	14.4%
Stroud Township	18,976	2,307	12.2%
Stroudsburg Borough	5,499	909	16.5%
Tobyhanna Township	8,459	1,545	18.3%
Tunkhannock Township	6,720	1,333	19.8%

Appendix II. Key Stakeholder Community Forums

Community forums were held on Thursday, December 2 and Friday, December 3, 2021, via zoom.

Organizations and Agencies Represented in Key Stakeholder Community Forums

- Air Products
- Autism Speaks
- Eastern PA Down Syndrome Center
- Equi-Librium Therapeutic Horsemanship
- Jewish Family Services of the Lehigh Valley
- Lehigh County
- Lehigh Valley Arts Council
- Lehigh Valley Center for Independent Living
- Mercy Special Learning
- Mikayla's Voice
- Office of State Representative Zach Mako
- Pennsylvania Department of Human Services
- Pennsylvania Department of Human Services, Office of Long-Term Living
- Phoebe Ministries
- Sight for Hope
- Special Olympics of PA
- The ARC of Lehigh and Northampton Counties

Initial discussion questions for Key Stakeholder Forums

- What is required to transform negative attitudes toward people with disabilities?
- What are the most important health disparities experienced by people with disabilities that continue to be unaddressed in our communities?
- What are the greatest challenges to diversity, equity, and inclusion of people with disabilities in our community?
- What does our community do well when it comes to diversity, equity, and inclusion of people with disabilities? What are our strengths?
- What are the primary advantages of telemedicine for people with disabilities?
- What are the primary disadvantages of telemedicine for people with disabilities?

Appendix III. Health in the Lehigh Valley: Key Indicators from the County Health Rankings

Although it is difficult to understand the particular needs of people with disabilities using available county level data on the general population, nonetheless, this data does provide some context for considering regional challenges with respect to health. This appendix summarizes key indicators available through the Robert Wood Johnson County Health Rankings to provide a snapshot of how Lehigh, Northampton, and Monroe counties compare to each other, to other counties in the state of PA, and to top-ranked counties across the nation.

Red = County performs worse compared to state as a whole
Green = County performs better compared to state as a whole

Robert Wood Johnson 2018 County Health Rankings: Summary of Key Measures

County Health Measure	Lehigh	Northampton	Monroe	PA	Top Counties in US (90th percentile)
Poor of Fair Health (% of adult reporting)	**19%**	**17%**	**19%**	18%	14%
Poor physical health days (avg. no. of days in past 30 days)	**4.1**	4.0	4.0	4.0	3.4
Poor mental health days (avg. no. days in past 30 days)	4.7	4.7	**4.9**	4.7	3.8
Frequent physical distress (% adults reporting 14 or more days per mo. of poor physical health)	12%	12%	12%	12%	10%
Frequent mental distress (% adults reporting 14 or more days per mo. of poor mental health)	**14%**	**14%**	15%	15%	12%
Adult Smoking (% adults who are current smokers)	18%	**19%**	**20%**	18%	16%
Adult Obesity (% adults with BMI > 30)	**31%**	**31%**	**33%**	26%	31%
Food Environment Index (factors contributing to healthy food environment, 0 = worse, 10 = best)	**8.4**	8.7	**8.0**	8.7	8.4
Physical inactivity (% adults age 20+ reporting no leisure time activity)	**17%**	**27%**	**24%**	22%	19%
Access to Exercise Opportunities (% population with access to locations for physical activity)	**82%**	**87%**	**86%**	84%	91%

Uninsured (% population under age 65)	**8%**	**6%**	**8%**	7%	6%
Primary Care Physicians (ratio of population to PCP)	**990:1**	**1210:1**	**2420:1**	1230:1	1030:1
Mental Health Providers (ratio of population to mental health providers)	**510:1**	**420:1**	**830:1**	450:1	270:1
Income Inequality (Ratio of household income at the 80th percentile to income at the 20th percentile)	**4.5**	**4.2**	**4.1**	4.8	3.7
Residential segregation—Black/white (Index of dissimilarity where higher values indicate greater residential segregation between Black and white county residents)	**47**	**44**	**34**	71	23
Residential segregation—White/Nonwhite (Index of dissimilarity where higher values indicate greater residential segregation between non-white and white county residents)	**40**	**39**	**29**	59	14
Severe housing problems (% households with overcrowding, high housing costs, or lack of kitchen or plumbing facilities)	**16%**	**14%**	**18%**	15%	9%
Broadband access (% households with broadband access)	**83%**	**83%**	**84%**	82%	86%

Appendix IV. Survey Question Response Frequencies

Did you ever have, or do you have, a physical or mental disability or impairment, or a long-term health condition?		
	Frequency	Valid Percent
Yes	253	24.8
No	760	74.6
Not Sure	6	0.6
Total	1019	100.0
Do you know anybody else, such as a family member, friend, or coworker, who has a disability?		
	Frequency	Valid Percent
Yes	362	35.5
No	645	63.3
Not Sure	12	1.2
Total	1019	100.0
In your lifetime, have you ever worked or volunteered for a charity or an organization that supports, cares for, or advocates for people with disabilities?		
	Frequency	Valid Percent
Yes	353	34.7
No	641	62.9
Not Sure	25	2.5
Total	1019	100.0
Do you currently care for a person with a disability (whether paid or unpaid)?		
	Frequency	Valid Percent
Yes	177	17.3
No	841	82.5
Not Sure	1	0.1
Total	1019	100.0
Most people would willingly accept a person with a disability as a close friend.		

	Frequency	Valid Percent
Strongly Agree	384	37.7
Somewhat Agree	477	46.8
Somewhat Disagree	124	12.1
Strongly Disagree	35	3.4
Total	1019	100.0
Most people believe that a person who has a disability is just as intelligent as the average person		
	Frequency	Valid Percent
Strongly Agree	407	39.9
Somewhat Agree	424	41.6
Somewhat Disagree	153	15.0
Strongly Disagree	36	3.5
Total	1019	100.0
Most people believe that a person with a disability is just as trustworthy as the average person.		
	Frequency	Valid Percent
Strongly Agree	456	44.7
Somewhat Agree	436	42.8
Somewhat Disagree	114	11.2
Strongly Disagree	13	1.3
Total	1019	100.0
Most people think less of a person with a disability.		
	Frequency	Valid Percent
Strongly Agree	133	13.1
Somewhat Agree	356	34.9
Somewhat Disagree	306	30.1
Strongly Disagree	224	21.9
Total	1019	100.0

Most people in my community would treat someone with a disability just as they would treat an average person.		
	Frequency	Valid Percent
Strongly Agree	333	32.6
Somewhat Agree	443	43.5
Somewhat Disagree	188	18.4
Strongly Disagree	56	5.5
Total	1019	100.0
In general, how would you rate your overall health?		
	Frequency	Valid Percent
Excellent	254	24.9
Good	529	51.9
Fair	200	19.6
Poor	37	3.7
Total	1019	100.0
In general, how satisfied are you with the quality of health care you receive?		
	Frequency	Valid Percent
Very Satisfied	473	46.4
Somewhat Satisfied	416	40.8
Somewhat Dissatisfied	75	7.4
Very Dissatisfied	56	5.5
Total	1019	100.0
Was there a time in the past year when you needed medical care or health services but did not get it?		
	Frequency	Valid Percent
Yes	138	13.5
No	877	86.0
Not Sure	5	0.5
Total	1019	100.0

In the last 12 months, have you ever felt that a doctor, other health care provider, or their staff judged you unfairly or discriminated against you because of your race or ethnicity?

	Frequency	Valid Percent
Yes	38	3.7
No	980	96.2
Not Sure	1	0.1
Total	1019	100.0

In the last 12 months, have you ever felt that a doctor, other health care provider, or their staff judged you unfairly or discriminated against you because of your gender?

	Frequency	Valid Percent
Yes	25	2.4
No	992	97.3
Not Sure	2	0.2
Total	1019	100.0

In the last 12 months, have you ever felt that a doctor, other health care provider, or their staff judged you unfairly or discriminated against you because of your sexual orientation?

	Frequency	Valid Percent
Yes	14	1.3
No	1003	98.4
Not Sure	3	0.3
Total	1019	100.0

In the last 12 months, have you ever felt that a doctor, other health care provider, or their staff judged you unfairly or discriminated against you because of a disability?

	Frequency	Valid Percent
Yes	28	2.8
No	982	96.3
Not Sure	10	0.9
Total	1019	100.0

In the last 12 months, have you ever felt that a doctor, other health care provider, or their staff judged you unfairly or discriminated against you because of a health condition?

	Frequency	Valid Percent
Yes	55	5.4
No	960	94.2
Not Sure	4	0.4
Total	1019	100.0
Have you ever had a virtual health-related appointment, or tele-medicine appointment, for example, meeting with a health care provider on the telephone or online using video or online chat?		
	Frequency	Valid Percent
Yes	532	52.2
No	485	47.6
Not Sure	3	0.3
Total	1019	100.0
If yes, what was the main benefit of this experience?		
	Frequency	Valid Percent
Quicker Access to Care	108	20.3
No need for Transportation	60	11.3
The ability to spend less time out of work	36	6.8
Avoiding crowds in waiting rooms and other spaces	208	39.1
Other	119	22.4
Total	532	100.0
How interested would you be in telehealth, or virtual online visits for the following kinds of health-related services if they were available to you in the future?		
Doctors and Medical Office Visits		
	Frequency	Valid Percent
Very Interested	212	20.8
Somewhat Interested	337	33.0
Somewhat Uninterested	101	9.9
Not Interested at all	370	36.3
Total	1019	100.0

Therapeutic Services, such as physical therapy and rehabilitation		
	Frequency	Valid Percent
Very Interested	68	6.7
Somewhat Interested	163	16.0
Somewhat Uninterested	123	12.0
Not Interested at all	666	65.4
Total	1019	100.0
Occupational therapy		
	Frequency	Valid Percent
Very Interested	58	5.7
Somewhat Interested	179	17.6
Somewhat Uninterested	133	13.0
Not Interested at all	649	63.7
Total	1019	100.0
Support groups		
	Frequency	Valid Percent
Very Interested	176	17.2
Somewhat Interested	366	35.9
Somewhat Uninterested	68	6.7
Not Interested at all	410	40.2
Total	1019	100.0
Mental health care or counseling		
	Frequency	Valid Percent
Very Interested	181	17.8
Somewhat Interested	327	32.0
Somewhat Uninterested	72	7.0
Not Interested at all	440	43.2
Total	1019	100.0

Appendix V. Survey Sample Summary of Demographics

What county do you live in?		
	Frequency	Valid Percent
Lehigh	461	45.3
Northampton	357	35.1
Monroe	201	19.7
Total	1019	100.0
Which gender do you most identify with?		
	Frequency	Valid Percent
Male	499	48.9
Female	519	50.9
Transgender Male	1	0.1
Do not identify as male or female	1	0.0
Total	1019	100.0
Which of the following categories best describes you?		
	Frequency	Valid Percent
Hispanic or Latino	200	19.6
Not Hispanic or Latino	820	80.4
Total	1019	100.0
Which of the following categories best describes you?		
	Frequency	Valid Percent
White	843	82.7
Black/African American	99	9.7
Asian	31	3.0
American Indian or native Alaskan	6	0.6
Some Other Race	41	4.1
Total	1019	100.0
What is the highest level of education that you have completed?		
	Frequency	Valid Percent
Some High School	58	5.7
High School Degree or Equivalent	342	33.6
Associate Degree or Some College	302	29.7
College Degree	216	21.2
Post Graduate Degree	100	9.8
Total	1019	100.0

Which of the following categories best describes your annual household income?		
	Frequency	Valid Percent
Less than $14,999	55	7.8
$15,000 - $24,999	81	11.4
$25,000-$39,999	108	15.1
$40,000 - $59,999	137	19.2
$60,000 - $99,999	164	23.0
$100,000 and above	168	23.6
Total	712	100.0
Refused	307	
	1019	
Age categories (recoded from birth year)		
	Frequency	Valid Percent
18-24	108	11.0
25-44	277	28.4
45 - 64	335	34.3
65 and over	256	26.2
Total	976	100.0
Refused	44	
	1019	