Projecting the Size of the Population with a Disability:
Methodology

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Disability in this study is defined as needing assistance caring for self, inability to communicate, or deficiency in capacity for independent living, self-direction, or economic self-sufficiency. It also could mean having a medical condition that disrupts thinking, perception, feeling, mood, and ability to relate to others (National Alliance on Mental Illness (NAMI). Since the programs and services that provide assistance to people with a disability are organized by the type of disability and the extent of impairment, we too define disability by type and differentiate two degrees of impairment (severe or moderate) by type. Projecting the size of the population with disability requires four steps: projecting the population, defining disability levels, estimating the age-and sex-specific prevalence of disability, and then applying those rates of disability to the projected population. This document focuses on the middle two steps in the process. For further information about the methodology used to project the size of the total population (step 1), see *Population Projection Methodology.*

Defining Disability

Physical and/or cognitive disability is defined as requiring the assistance of another person to perform Activities of Daily Living (ADL). The inability to perform an ADL could be the result of physical and/or cognitive impairment. *Severe disability* is defined as:

1. needing the assistance of another person in <u>at least two of the following activities of daily living</u>: bathing, using the toilet, dressing, grooming, eating, or moving from one position to another (transferring in and out of bed or chair); OR

2. needing assistance with one of the activities of daily living and with taking medications; OR

3. being cognitively impaired and requiring 24-hour supervision.

The definition for severe disability is matched with Ohio's Medicaid Intermediate Level of Care, commonly known as nursing home level of care for those with physical/cognitive disability (OAC: 5101:3-3-06).

Moderate physical and/or cognitive disability is defined as:

1. requiring the assistance of another person to perform one of the ADL as listed above; OR

2. having cognitive impairment requiring partial supervision (i.e. less than 24-hours).

Intellectual and/or Developmental disability (ID/DD) is defined as having a diagnosis of intellectual disability (ID) or Developmental Disability (DD) and needing assistance or supervision of another person to perform and manage life activities. Persons with very low IQ level (below 55) are considered to have severe or profound intellectual disability requiring 24-hour supervision.

Severe disability for individuals with developmental disability is defined as having a diagnosis of ID or DD and needing assistance of another person in at least three of the following life activities: mobility, personal care, communication, and capacity for independent living, self-direction, and economic self-sufficiency. Persons with very low IQ level (with a score of 55 or below) are considered having severe or profound intellectual disability requiring 24-hour supervision. This definition of severe disability matches Ohio's Medicaid Intermediate Level of Care for those with intellectual and/or developmental disabilities (ICFMR) (OAC:5101:3-3-15.3). *Moderate ID/DD disability* is measured as:

1. having a diagnosis of ID or DD; OR

2. having a diagnosis of ID or DD and requiring the assistance or supervision of another person for one or two of the activities of daily living listed above. Persons with low IQ level who have a mild or moderate intellectual deficit requiring supervision and help with interpreting directions, independent living and capacity to earn a living are also considered to be experiencing moderate disability.

Mental illness is a medical condition that disrupts a person's thinking, perception, feeling, mood, ability to relate to others, and daily functioning, which often leads to diminished capacity for coping with the ordinary demands of life (National Alliance on Mental Illness (NAMI)). For measuring prevalence of mental illness and the severity of the condition we relied on a joint study by the University of Cincinnati, Child Policy Research Center, and the Ohio Family Health Survey titled *Mental Health Status, Access to Care, and Service Utilization in Ohio: Trends Related to Insurance, Income, Demographic Characteristics and Physical Health* (2010). One of the goals of this study was to establish mental health status rates/prevalence for all age groups in Ohio. We used the findings of this study to estimate prevalence of mental illness in the population. Particularly, we relied on a question in the child section of the survey (Does the child have any kind of emotional, developmental or behavioral problem for which the child needs treatment or counseling?) and a question in the adult portion of the survey (For how many days during the past 30 days did your mental health conditions or emotional problems keep you from doing your work or other usual activities?). The original researchers in this study established that adults who were not able to work or perform usual activities for 20 or more days out of the last 30 days should be considered having *severe mental illness* and those who were unable to carry usual activities or work for 15 to 19 of the last 30 days should be designated as having *moderate mental illness* (Mitchell, M. et al., 2010).

The mental health module of the Ohio Family Health Survey is stratified by age (as well as other variables); everyone age 65 and older were grouped together which is a short-coming for purposes of our projections. But the validity of the data outweighs the disadvantage of limited age-based information. The prevalence rates from the Ohio Family Health Survey are for community-dwelling population; so we further adjusted them to account for people with severe mental illness in Ohio nursing facilities, prisons, and forensic psychiatric hospitals.

Estimating Age and Sex Specific Disability Rates

Disability rates for each type and level of disability (physical/cognitive, ID/DD or mental illness) were calculated using different data sources. For calculating prevalence of physical/cognitive disability we used a two-step approach: we first used the disability module of the 2004-2005 Survey of Income and Program Participation (SIPP) to determine the type and extent of physical and/or cognitive disability among the survey participants. SIPP is a nationally representative household survey of U.S. community residents. The extensive and specific questions regarding the presence of certain conditions such as "learning disability," "mental or emotional problem or disorder," "mental retardation" and "senility/dementia/Alzheimer's," along with the responses to ADL questions, were key in selecting this survey data for the prevalence estimations. The community disability rates for individuals with physical and/or cognitive disability were calculated by age and sex, based on the extent of functional limitations and the presence of dementia or cognitive impairment as stated earlier. These rates were then applied to the 2010 Ohio community population (those who do not live in group quarters), to obtain the estimated number of people with moderate or severe physical and/or cognitive disability in the community. Next, the actual number of persons with physical and/or cognitive disability in Ohio nursing facilities and prisons for June 30, 2010 were added to the community population with this type of

disability to obtain the total population with physical and/or cognitive disability in each age and sex group. The total population with severe and moderate disability at each age and sex strata was then divided by the total Ohio population in that particular age and sex group to calculate the estimated prevalence of severe and moderate physical and/or cognitive disability by age and sex.

A different approach was used for estimating the prevalence of ID/DD. Comprehensive data for individuals with ID or DD who meet intermediate level of care are available from Ohio Department of Developmental Disabilities' (ODDD) Individual Data system (IDS), the single data collection source for individuals that ODDD or the County Boards serve and/or support. From everyone in IDS, the actual number of individuals who met ICFMR level of care, irrespective of their residential status were selected by age group and sex for estimating the prevalence of ID/DD. IDS data for 2012 were the most comprehensive and detailed so those data were used for our estimations. The ratio of the number of individuals in each age and sex category to the total population in that age and sex category provided estimated prevalence of severe ID or DD for that age and sex group. For determining moderate level of ID/DD we used SIPP and the definition of moderate disability as provided earlier to calculate the size of community population with moderate ID or DD. It is assumed that all individuals with moderate ID or DD live in the community.

For determining prevalence and severity of mental illness we relied on the methodology of the joint study described earlier by Ohio Family Health Survey (sponsored by the Ohio Departments of Insurance, Job and Family Services, Health, and Mental Health), University of Cincinnati, and Child Policy Research Center. The estimated community prevalence rates were calculated by based on the specific age and sex breakdown of this study and then adjusted to include people with mental illness residing in group quarters.

Projecting the Size of the Population with Disability

Assuming the proportion of the population with any type and level of disability within each age and sex group remains the same during the next 20 years, these prevalence rates were applied to the projected population for 2015 to 2030 to obtain the projected number of persons with disabilities. For further information about the population projections methodology, see *Population Projection Methodology.*

Table 1 summarizes the prevalence rates that were calculated and employed in this study from all sources.

Prevalence of Disability Among Ohioans by Sex, Age Group, Type and Severity of Disability

Age Group	Physical and/or Cognitive Disability				Intellectual and/or Developmental Disability				Mental Illness			
	Severe		Moderate		Severe		Moderate		Severe		Moderate	
	Female (Percent)	Male (Percent)	Female (Percent)	Male (Percent)	Female (Percent)	Male (Percent)	Female (Percent)	Male (Percent)	Female (Percent)	Male (Percent)	Female (Percent)	Male (Percent)
0 to 4	0.01	0.02	0.49	0.98	0.00	0.01	0.02	0.05	0.0	0.0	0.0	0.0
5 to 9	0.04	0.07	0.32	0.34	0.33	0.69	0.22	0.92	0.2	0.1	0.0	0.0
10 to 14	0.12	0.07	0.02	0.04	0.61	1.29	0.42	0.72	0.5	0.3	0.4	3.1
15 to 19	0.14	0.22	0.09	0.08	0.64	1.20	0.50	0.42	5.0	5.6	1.1	1.1
20 to 24	0.15	0.17	0.11	0.12	0.85	1.42	0.33	0.22	5.0	5.7	1.1	1.1
25 to 29	0.16	0.06	0.19	0.02	0.74	1.14	0.29	0.12	4.5	5.1	1.0	1.5
30 to 34	0.30	0.14	0.24	0.11	0.62	0.90	0.45	0.20	4.5	5.1	1.0	1.5
35 to 39	0.30	0.31	0.52	0.21	0.47	0.66	0.57	0.27	5.7	5.7	0.4	1.1
40 to 44	0.42	0.34	0.71	0.16	0.44	0.59	0.48	0.27	5.7	5.7	0.4	1.1
45 to 49	0.56	0.32	1.01	0.31	0.41	0.56	0.64	0.38	5.3	6.8	1.1	1.8
50 to 54	1.02	0.61	2.01	0.52	0.42	0.57	0.49	0.45	5.3	6.8	1.1	1.8
55 to 59	1.29	0.95	2.51	1.10	0.43	0.54	0.76	0.54	5.8	7.6	1.1	1.5
60 to 64	1.57	1.41	2.77	1.22	0.35	0.46	0.76	0.46	5.8	7.6	1.1	1.5
65 to 69	3.16	2.76	3.32	1.86	0.32	0.39	0.62	0.84	4.2	3.5	0.5	0.9
70 to 74	4.60	3.85	3.78	2.22	0.22	0.28	0.22	0.36	4.2	3.5	0.5	0.9
75 to 79	7.57	8.27	4.93	3.17	0.15	0.21	0.12	0.28	4.1	3.4	0.5	0.9
80 to 84	12.01	11.76	5.37	4.71	0.10	0.14	0.09	0.14	4.0	3.4	0.5	0.9
85 to 89	24.53	15.86	8.62	2.85	0.09	0.11	0.09	0.00	3.8	3.2	0.4	0.8
90 to 94	31.24	21.31	6.72	2.65	0.09	0.18	0.07	0.00	3.0	3.0	0.3	0.8
95+	52.62	31.60	9.86	3.13	0.14	0.38	0.10	0.00	4.3	3.7	0.5	0.9

The community mental health prevalence rates for ages 0-14 are based on SIPP data.