2019 Lake County Community Health Needs Assessment

Technical Report

Acknowledgements

Lake Metroparks

Elizabeth Mather, *Chief of Technology*

Allison Ray, *Environmental Planner*

Lakeland Community College

Dr. Deborah Hardy, *Dean for Health Technologies, Associate Provost for Teaching and Learning, Dean of Faculty*

Dr. Karen Gravens, *Program Director, Nursing*

Laketran

Ben Capelle, *Chief Executive Officer*

Signature Health

Mary Wynne-Peaspanen, *Director, Sexual and Reproductive Health Operations*

Ann Mason, *Chief Operating Officer*

YMCA of Lake County

Beth Horvath, *Director, Healthy Living*

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1. Executive Summary

Conduction of a community health needs assessment every three years is required for non-profit hospital systems to retain their respective 501(c)(3) status. Concurrently, local health departments seeking accreditation from the Public Health Accreditation Board are required to conduct a community health assessment every three years. As such, and in order to avoid duplicative assessment efforts and enhance collaboration and coordination between clinical care and public health in Lake County, Lake Health and the Lake County General Health District conducted a joint community health needs assessment. The joint assessment was funded by Lake Health, satisfies both Internal Revenue Service and Public Health Accreditation Board requirements, was conducted by the Lake County General Health District's Office of Health Policy and Performance Improvement, and consisted of a stepwise assessment approach, which included (1) secondary data collection, (2) community resident survey distribution, (3) community leader survey distribution, and (4) community resident focus groups.

The iterative assessment process identified 11 health disparities consist across all four assessment components, as well as five health disparities that were qualitatively identified by Lake County community residents and community leaders, including:

i.	Access to care	ix.	Fast food restaurant density
ii.	Alcohol abuse	x.	Heart disease
iii.	Alcohol-related deaths	xi.	High blood pressure
iv.	Alcohol-related driving deaths	xii.	Limited access to healthy foods
v.	Alzheimer's disease	xiii.	Mental health
vi.	Diabetes	xiv.	Obesity
vii.	Drug overdose deaths	xv.	Preventable hospitalizations
viii.	Fall deaths	xvi.	Preventable teen deaths

2. Methods

2.1 Joint Community Health Assessment/Community Health Needs Assessment

Despite several differences between the community health needs assessment (CHNA) requirements for hospitals, and community health assessment (CHA) requirements for public health departments, these processes are not mutually exclusive; both assessments aim to establish a clear documentation of local health needs, and thereafter inform response to these needs. While the non-profit hospital CHNA mandate was prompted by the passage of the Affordable Care Act in 2010 (Public Law 111-148 2010) and is managed primarily by the Internal Revenue Service (IRS 2011), and the CHA is impelled for those local health departments seeking accreditation (or reaccreditation) from the Public Health Accreditation Board (Laymon et al. 2015), both agencies have expressed a preference that these assessments be the product of a collaborative process. Moreover, the Internal Revenue Service supports hospital collaboration with a public health department to conduct its CHNA, and the adoption of a joint CHA/CHNA report, as long as the hospital-specific CHNA requirements are met.

Beginning with a shared vision between Lake Health and the Lake County General Health District's (LCGHD) Office of Health Policy and Performance Management (OHPPI) in January of 2019, the respective process was convened around common data needs, as well as the identification of an efficient, collaborative, sustainable, and locally impactful CHA/CHNA process. In order to ensure local community partner engagement and participation, system-level community agency personnel were approached, and asked to comprise the 2019 Lake County CHNA Steering Committee. The CHNA steering committee met during regularly scheduled monthly meetings, and was responsible for informing survey question content needs and potential electronic distribution outlets, as well reviewing secondary data rankings.

2.2 Secondary Data Collection

2.2.1 Secondary Data and Sources

Demographic, socioeconomic, morbidity, and mortality data were obtained from the following publically available sources:

i.   American Fact Finder

ii. Centers for Disease Control and Prevention (CDC)

    a.   Behavioral Risk Factor Surveillance Survey (BRFSS)

    b.   Wide-ranging Online Data for Epidemiologic Research (WONDER)

iii. Community Commons

iv. County Health Rankings

v.   National Assessment of Educational Progress

vi. Network of Care

vii. Ohio Department of Health

viii. Radon.com

ix. The National Vital Statistics System

x.   Toxic Release Inventory

Initially, a total of 338 secondary data measures were identified and compiled across Healthy People 2020 (where available), national, state, and county values. In conjunction with Lake County values, two demographically similar counties, Licking County and Clermont County, respectively, as determined by total population, poverty, age, and median household income, were included for benchmarking purposes. Based upon the quality, age, availability, and/or redundancy of the aforesaid measures, 121 of the initially compiled 338 (36%) measures were included for analysis.

Secondary data categories included: (1) population, (2) education, (3) economic status, (4) housing, (5) pollution, (6) built environment, (7) healthcare access and utilization, (8) health insurance and healthcare cost, (9) injury and accidents, (10) crime and violence, (11) substance use and abuse, (12) mental health, (13) obstetrics, (14) sexual behavior and STD, (15) infectious disease, (16) cancer, and (17) chronic disease.

2.2.2 Relative Ranking Method

In order to prioritize the collected secondary data measures, a relative ranking method was employed. Relative ranking is an intuitive method for summarizing large volumes of data, has been previously recommended for the synthesis of community health needs assessment data (Oglesby and Slenkovich 2014), and involves the comparison of whether a given value is favorable or unfavorable to other included values. For the purposes of this analysis, the Lake County value for each measure was compared to its respective Healthy People 2020, national, state, and comparison county values, all of which were utilized as benchmarks. As such, if the infant mortality rate in Lake County was higher than the Healthy People 2020 goal, lower than both the national and state figures, and higher than both comparison county values, respectively, the measure would be unfavorable to three benchmarks. Lake County values unfavorable to four or more benchmarks were considered county-specific health concerns.

2.3 Community Resident Survey

2.3.1 Question Content

In order to inform the construction of the community resident survey, previously validated question content was utilized from the following survey instruments:

i. American Housing Survey (USCB 2017)

ii. Behavioral Risk Factor Surveillance Survey (CDC 2018a)

iii. The Diabetes Self-management Questionnaire (Schmitt et al. 2013)

iv. National Crime Victimization Survey (USDOJ 2017)

v. National Health and Nutrition Examination Survey

    a. Acculturation (CDC 2017a)

    b. Diet Behavior and Nutrition (CDC 2017b)

    c. Physical Activity and Fitness (CDC 2017c)

    d. Sexual Behavior (CDC 2017d)

vi. National Health Interview Survey

    a. Adult (CDC 2018b)

    b. Child (CDC 2018c)

    c. Family Coverage (CDC 2018d)

    d. Family Identification (CDC 2018e)

    e. Household Composition (CDC 2018f)

vii. Food Security Survey (USDA 2012)

viii. Youth Risk Behavioral Survey (CDC 2019a)

ix. HealthStyles Survey (Kennedy et al. 2011)

A total of 92 questions were included in both electronic and paper survey distributions. The majority of these questions were adopted directly (33) or amended (38) from the nine previously-validated survey instruments listed, and remaining question content (21) was created by LCGHD. Several survey questions were mutually exclusive, sex-specific, and/or prompted additional response based upon an individual's response to a preceding question. In order to direct survey participants to relevant questions based on their subsequent responses, skip patterns (electronic survey) and skip instructions (paper survey) were employed.

Included question content addressed the following health-related topics:

i.	Adverse childhood experiences	xv.	Illicit drug use
ii.	Alcohol use	xvi.	Marijuana use
iii.	Cancer	xvii.	Maternal health
iv.	Chronic disease	xviii.	Nutrition and access to healthy food
v.	Community health concerns	xix.	Overall health
vi.	Crime	xx.	Prescription drug abuse
vii.	Demographic information	xxi.	Physical activity and BMI
viii.	Dental care	xxii.	Primary and preventative care
ix.	Diabetes	xxiii.	Quality of life
x.	Emergency department utilization	xxiv.	Vaccination history and beliefs
xi.	Employment and financial status	xxv.	Sexual activity
xii.	Functional needs	xxvi.	Suicide
xiii.	Health insurance coverage	xxvii.	Tobacco and E-cigarette use
xiv.	Housing and neighborhood characteristics	xxviii.	Transportation

2.3.2 Population, Sample Size, and Distribution

Given a representative sample, a total survey sample size of 384 respondents was necessary to adequately generalize survey results across Lake County's estimated 230,117 residents (Qualitrics 2018). In order to provide for broad accessibility to survey respondents while subsequently reducing survey distribution costs, a web-based, mixed-mode survey design was utilized. Individuals 18 years of age and older who were currently residing in Lake County were invited to participate in the survey, and paper and electronic versions of the survey were available in both English and Spanish languages. The electronic version of the survey was administered via Qualtrics, a web-based survey platform, and a unique, shortened URL code (bit.ly/lakecha2019) was assigned via Bitly, a free online resource for customized URL links. The electronic survey link was available on the front page of the LCGHD website, and was distributed by the agencies represented in the 2019 CHNA Steering Committee. Paper surveys were available at LCGHD's Mentor location, as well as Women, Infants, and Children (WIC) clinics located in Madison, Painesville, and Willoughby, and fliers outlining the purpose of the survey with both a URL link and QR code were displayed at each respective location. Paper surveys were also available at several Lake County community agencies and businesses.

The English language survey was distributed on Monday, April 1, 2019, and the Spanish language survey was distributed on Thursday, April 4, 2019. Both surveys remained active for 30 days.

2.3.3 Survey Burden

The community resident survey required approximately 20 minutes to complete.

2.3.4 Participation Incentive

While the completion of the respective survey was voluntary, entry into a post-survey lottery for one of ten $100 Visa gift cards was offered to those who completed the survey, based upon the documented link between survey completion and participation incentives (Laguilles et al. 2011). Participants that completed the electronic survey and wished to enter into the drawing were redirected to a second webpage, and asked to provide their first name and email address (or telephone number). Raffle entries were not linked to survey responses in any way.

2.3.5 Data Analysis

Results of the community resident survey were analyzed in SPSS v.25. Quantitative analysis consisted primarily of frequencies and descriptive techniques. In order to ensure survey sample representativeness, survey responses were weighted prior to analysis based upon actual Lake County distributions in sex (Table 1), age (Table 2), race (Table 3), ethnicity (Table 4), and education (Table 5). A total of six weight variables were created.

i. Composite Weight
   a. The product of age, sex, race, ethnicity, and education, the composite weight was applied to all analyses that did not differentiate by age, sex, race, ethnicity, and/or education.

ii. Composite Weight without Sex
   a. The product of age, race, ethnicity, and education, composite weight without sex was applied to all analysis differentiated by sex.

Table 1. *Composite Weight without Sex*

Sex	Lake County		Survey Sample		Weight
	N*	(%)*	N	(%)	
Male	112,241	48.8	367	20.7	2.25
Female	117,876	51.2	1,321	75.3	0.65

*Based on 2017 American Community Survey 1-year estimates.

iii.   Composite Weight without Age

      a.   The product of sex, race, ethnicity, and education, composite weight without age was applied to all analyses differentiated by age.

Table 2. *Composite Weight without Age*

Age (in years)	Lake County		Survey Sample		Weight
	N*	(%)*	N	(%)	
19	2,322	1.0	3	0.2	5.0
20 to 24	12,683	5.5	29	1.7	2.89
25 to 29	13,686	5.9	83	5.0	1.05
30 to 34	12,694	5.5	90	5.4	0.92
35 to 39	13,498	5.9	126	7.5	0.70
40 to 44	13,318	5.8	115	6.9	0.75
45 to 49	15,066	6.5	144	8.6	0.68
50 to 54	17,003	7.4	139	8.3	0.80
55 to 59	16,317	7.1	178	10.7	N/A
60 to 64	18,902	8.2	225	13.5	0.54
65 to 69	14,258	6.2	223	13.3	0.42
70 to 74	11,367	4.9	166	9.9	0.44
75 to 79	7,712	3.4	90	5.4	0.57
80 to 84	5,874	2.6	45	2.7	0.87
85+	6,207	2.7	15	0.9	2.7

*Based on 2017 American Community Survey 1-year estimates; 19 year old single year information based on 2010 Census.

iv. Composite Weight without Race

    a. The product of age, sex, ethnicity, and education, composite weight without race was

        applied to all analysis differentiated by race.

Table 3. *Composite Weight without Race*

Race	Lake County		Survey Sample		Weight
	N*	(%)*	N	(%)	
Caucasian	209,060	90.8	1,609	91.7	0.99
African American	10,129	4.4	36	2.1	2.10
American Indian	356	0.2	6	0.3	0.50
Pacific Islander	277	0.1	3	0.2	0.60
Asian	2,783	1.2	9	0.5	2.40
Other	7,512	3.3	41	2.3	1.4

*Based on 2017 American Community Survey 1-year estimates.

v. Composite Weight without Ethnicity

    a. The product of age, sex, race, and education, composite weight without ethnicity was

        applied to all analysis differentiated by ethnicity.

Table 4. *Composite Weight without Ethnicity*

Ethnicity	Lake County		Survey Sample		Weight
	N*	(%)*	N	(%)	
Hispanic/ Latino	9,302	4.0	34	2.1	1.90
Not Hispanic/ Latino	220,399	96.0	1,577	97.9	0.98

*Based on 2013-2017 American Community Survey 5-year estimates.

vi.   Composite Weight without Education

   a.   The product of age, sex, race, and ethnicity, composite weight without education was

       applied to all analysis differentiated by education.

Table 5. *Composite Weight without Education*

Education	Lake County		Survey Sample		Weight
	N*	(%)*	N	(%)	
12th grade or less, no diploma	17,354	9.5	19	1.1	8.60
High school graduate (or equivalent)	55,595	30.3	259	15.2	1.99
Some college or Associate's	64,006	34.9	694	40.6	0.86
Bachelor's degree or higher	46,625	25.4	736	43.1	0.59

*Based on 2017 American Community Survey 1-year estimates.

2.4 Community Leader Survey

       In order to obtain further contextual information and narrative pertaining to the

community's health, as well as supplement the results of the community resident survey, brief

electronic surveys were distributed to 40 Lake County community leaders. Electronic surveys were

distributed via Qualtrics, and a unique, shortened URL code (bit.ly/lakecommunityleader2019) was

assigned via Bitly.

2.4.1 Question Content

A total of nine questions were included in the electronic survey. For comparison purposes, question content was sourced primarily from the community resident survey, and focused on community health concerns, as well as how these concerns might be addressed by Lake Health, LCGHD, and the respondent's respective agency or municipality.

2.4.2 Population

Community leader surveys were distributed to Lake County city managers, mayors, commissioners, and community agency directors working directly with the county's medically underserved, minority, and low-income populations.

2.4.3 Survey Burden

The community leader survey required approximately 5 minutes to complete.

2.4.4 Data Analysis

Results of the community leader survey were analyzed in SPSS v.25, and quantitative analysis consisted primarily of frequencies and descriptive techniques.

2.5 Community Resident Focus Groups

In order to engage community residents, as well as supplement the results of the secondary data collection, community resident survey, and community leader survey, a total of five community resident focus groups were conducted across four Lake County communities. Focus group sessions required approximately 45 minutes to 1 hour to complete. A demographic survey was distributed to focus group participants at the beginning of each session, and a focus group discussion guide was utilized to direct discussion topics. Focus groups were recorded for transcription purposes,

deidentified, organized to capture participants situated in Eastern, Central, and Western Lake County communities, and administered at the following locations:

   i.   Madison Senior Center, 2938 Hubbard Road, Madison, OH 44057

  ii.   Brunner Sanden Deitrick Wellness Campus, 8655 Market Street, Mentor, OH 44060

 iii.   Elm Street Elementary School, 585 Elm Street, Painesville, OH 44077

 iv.   Morse Avenue Community Center, 244 Jefferson Street, Painesville, OH 44077

  v.   Wickliffe Senior Center, 900 Worden Road, Wickliffe, OH 44092

2.5.1 Question Content

A total of six questions were included in the focus group discussion guide. For comparison purposes, question content was largely sourced from the community resident survey and focused on community health concerns, as well as how these concerns might be addressed by Lake Health, LCGHD, and the respective focus group participants. The 13 question focus group demographic survey was also sourced from the community resident survey, and included content pertaining to (1) community health concerns, (2) overall health, (3) health insurance coverage, (4) household income, and (5) demographic information.

2.5.2 Population

While focus groups were designed to capture a diverse population mix, emphasis was placed on the county's senior and vulnerable Hispanic populations, respectively.

2.5.3 Participation Incentive

While focus group participation was voluntary, participants were eligible to receive a $25 Visa gift card.

2.5.4 Data Analysis

Focus group surveys were analyzed in SPSS v.25. Quantitative analysis consisted primarily of frequencies and descriptive statistics. Qualitative analysis consisted of response theme identification (Yang et al. 2015), the latter of which were accompanied by exemplary quotations (Anderson 2010).

3. Results

3.1 Secondary Data

3.1.1 Unranked

Table 6. *Unranked Secondary Data*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Total Population	2017	NA	325,719,178	11,658,609	230,117	173,448	204,214
Male Residents	2017	NA	49%	49%	49%	49%	49%
Female Residents	2017	NA	51%	51%	51%	51%	51%
Households with Children under 18 Years of Age	2017	NA	31%	29%	26%	34%	32%
Population 0 to 4 Years of Age	2017	NA	6%	6%	5%	6%	6%
Population 5 to 17 Years of Age	2017	NA	16%	16%	15%	17%	18%
Population 65 Years of Age and Older	2017	NA	16%	17%	19%	16%	16%
Non-Hispanic White Population	2017	NA	72%	81%	91%	92%	95%

Table 7. *Unranked Secondary Data (continued)*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
African American Population	2017	NA	13%	12%	4%	4%	2%
Hispanic Population	2013 - 2017	NA	18%	4%	4%	2%	2%
Asian Population	2017	NA	6%	2%	1%	0%	1%
Native Hawaiian or Pacific Islander Population	2017	NA	0.19%	0.04%	0.12%	0%	0.09%
American Indian or Alaskan Native Population	2017	NA	0.84%	0.20%	0.15%	0.19%	0.46%
Foreign-born Population	2013 - 2017	NA	13%	4%	5%	2%	2%
Children with Elevated Blood Lead Levels	2016	NA	88,271	3,288	19	18	6
Active National Priority List Superfund Sites	2019	1,151	1,699	37	0	0	1
Active Non-national Priority List Superfund Sites	2019	NA	10,771	451	5	5	3
Resolved Superfund Sites	2019	NA	36,693	1,194	30	14	7
Adults with Private Health Insurance	2016	NA	45%	45%	50%	46%	48%
Mean Daily Air Pollution Density (in pounds)	2017	NA	1,645,206	98,082	1,192	1,884	4,658

3.1.2 Unfavorable to Zero Benchmarks

Table 8. *Unfavorable to Zero Benchmarks*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Population Over 25 Years of Age with A BA or Higher	2016	NA	19%	28%	29%	25%	28%
Math Proficient 8th Graders	2017-2018	37%	34%	54%	58%	57%	50%
Households Receiving SNAP	2015	NA	14%	14%	8%	11%	8%
Households Receiving Public Assistance	2017	NA	2%	3%	2%	5%	2%
Families Below Poverty Level	2017	NA	17%	17%	11%	13%	12%
Renting Households	2017	NA	36%	34%	25%	25%	27%
Mean Radon Test Results (in picocuries)	2019	NA	5	8	4	16	4
Population Commuting to Work Over 60 Minutes	2013-2017	NA	9%	5%	3%	6%	6%
Residents with Internet Access	2016	83%	93%	92%	99%	92%	99%
Adults with Fair or Poor Health	2016	20%	16%	18%	13%	16%	16%
Obese Adults	2015	31%	28%	31%	27%	31%	34%
Adults Not Physically Active	2015	33%	22%	24%	19%	21%	23%
Motor Vehicle Accident-related Death Rate (per 100,000)	2016-2017	12	12	11	6	13	8

Table 9. *Unfavorable to Zero Benchmarks (continued)*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Mean Poor Mental Health Days	2016	NA	4	4	4	4	4
Teen Birth Rate (per 1,000)	2010-2016	NA	27	28	18	25	26
Infant Mortality Rate (per 1,000 live births)	2017	6	6	7	3	4	6
Pertussis Rate (per 100,000)	2016	NA	6	8	3	15	13
Mumps Rate (per 100,000)	2016	0.2	2.0	0.6	0	0	0
Breast Cancer Death Rate (per 100,000)	2016	21	20	22	11	11	11
Colorectal Cancer Rate (per 100,000)	2016	40	42	40	38	40	48
Lung and Bronchus Cancer Rate (per 100,000)	2016	NA	69	65	54	81	72
Adults with Diabetes	2015	NA	9%	10%	9%	10%	11%
Medicare Population with Diabetes	2015	NA	27%	27%	25%	27%	25%
Diabetes Death Rate (per 100,000)	2017	67	22	25	19	35	21
Alzheimer's Disease Death Rate (per 100,000)	2017	NA	31	34	19	35	21

3.1.3 Unfavorable to One Benchmark

Table 10. *Unfavorable to One Benchmark*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Single Parent Households	2013-2017	NA	17.5%	17.4%	15.1%	16.1%	14.8%
Reading Proficient 4th Graders	2017-2018	36%	37%	66%	72%	69%	75%
Children Living Below the Poverty Level	2016	NA	19.5%	20.5%	12.7%	20.9%	12.6%
Mean Daily Ambient Particulate Matter	2012	NA	9	11	10	11	11
Grocery Store Rate (per 100,000)	2016	NA	21	18	18	13	13
Dentist Rate (per 100,000)	2015	NA	66	59	65	35	39
Women Receiving Mammography Screenings	2015	81%	63%	62%	69%	66%	62%
Adults without Health Insurance	2016	0%	12%	8%	6%	7%	7%
Children without Health Insurance	2016	0%	5%	4%	2%	3%	2%
Access to Exercise Opportunities	2016	NA	11%	10%	10%	6%	8%
Firearm-related Death Rate (per 100,000)	1999-2017	9.3	4.2	3.8	0.9	2.1	0.6
Violent Crime Rate (per 100,000)	2012-2014	NA	380	301	174	239	96
Homicide Death Rate (per 100,000)	2006-2017	6	6	6	2	3	1

Table 11. *Unfavorable to One Benchmark (continued)*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Adults Excessively Using Alcohol	2016	24%	17%	19%	18%	18%	20%
Population with a Disability	2013-2017	NA	12.5%	13.8%	12.6%	14.5%	13.0%
Medicare Population with Depression	2015	NA	17%	19%	19%	19%	19%
Suicide Death Rate, 25 to 64 Years of Age (per 100,000)	2016-2017	NA	18	20	18	25	17
Suicide Death Rate, 65 Years of Age and Older (per 100,000)	2013-2017	NA	16.7	15.7	16.4	19.5	18.0
Infants with Low Birth Weight	2017	7.8%	8.0%	8.7%	7.4%	7.5%	7.2%
Chlamydia Rate (per 100,000)	2017	NA	529	529	303	448	290
Gonorrhea Rate (per 100,000)	2017	NA	172	207	57	200	56
Syphilis Rate (per 100,000)	2017	NA	10	16	6	8	5
HIV Rate (per 100,000)	2017	NA	338	202	83	114	71
Hepatitis A, B, and C Rate (per 100,000)	2016	NA	NA	208	122	120	268
Tuberculosis Rate (per 100,000)	2017	1.0	2.8	1.3	0.4	0	0.5
Salmonella Rate (per 100,000)	2016	11	15	13	11	12	6

Table 12. *Unfavorable to One Benchmark (continued)*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Cancer Rate (per 100,000)	2016	NA	522	456	453	499	439
Cervical Cancer Rate (per 100,000 females)	2016	7	8	8	6	5	8
Ovarian Cancer Rate (per 100,000 females)	2016	NA	14	10	11	13	12
Women Over 50 Getting a Mammogram	2014	81%	NA	61%	68%	66%	60%
Breast Cancer Rate (per 100,000)	2016	NA	77	69	68	78	65
High Blood Pressure Death Rate (per 100,000)	2015-2017	NA	6	6	5	8	3
Stroke Death Rate (per 100,000)	2017	34.8	37.6	42.8	35.4	43.8	55.0

3.1.4 Unfavorable to Two Benchmarks

Table 13. *Unfavorable to Two Benchmarks*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Disabled Population	2017	NA	13.0%	14.0%	14.2%	16.9%	15.1%
Population Not Graduating High School	2015-2016	13%	14%	10%	10%	9%	6%
Reading Proficient 8th Graders	2017-2018	36%	36%	55%	55%	59%	65%
Math Proficient 4th Graders	2017-2018	43%	40%	73%	77%	79%	82%
Unemployed Adults	2017	NA	5%	5%	5%	4%	4%
Median Monthly Owner-occupied Housing Costs	2017	NA	$1,079	$896	$946	$942	$1,018
Median Monthly Renter-occupied Housing Costs	2017	NA	$1,012	$772	$836	$848	$818
Rate of Mental Health Provider Access (per 100,000)	2018	NA	203	155	128	102	50
Diabetics 65 Years of Age and Older Receiving a Screening	2015	NA	86%	85%	86%	88%	87%
Percentage of Adult Smokers	2016	12.0%	17.9%	23.0%	18.0%	21.0%	21.0%
Viral Meningitis Rate (per 100,000)	2016	0.3	0.1	5.7	1.3	4.1	6.9
Cancer Death Rate (per 100,000)	2017	161	153	171	166	171	176

Table 14. *Unfavorable to Two Benchmarks (continued)*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Women Over 18 Years of Age Getting a Pap Smear	2006-2012	93%	NA	NA	76%	80%	75%
Residents 50 Years of Age and Older Getting a Colonoscopy	2006-2012	71%	NA	NA	62%	63%	58%
Prostate Cancer Rate (per 100,000)	2016	NA	56	101	95	119	62
Heart Failure Death Rate (per 100,000)	2017	NA	20	24	21	19	26
Medicare Population with Heart Failure	2015	NA	13.5%	14.2%	13.7%	12.7%	13.8%
Medicare Population with Asthma	2015	NA	8.2%	8.9%	8.3%	7.0%	9.3%

3.1.5 Unfavorable to Three Benchmarks

Table 15. *Unfavorable to Three Benchmarks*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Non-fluent English Speakers	2017	NA	8.5%	2.4%	2.9%	1.2%	0.4%
Median Household Income	2017	NA	$60,336	$54,021	$59,618	$62,883	$65,632
Renters Spending 30% of Income or More on Monthly Rent	2017	NA	50%	44%	45%	35%	36%
Primary Care Physician Rate (per 100,000)	2014	NA	88	93	48	44	75
Federally Qualified Health Center Rate (per 100,000)	2018	NA	3	3	1	0	3
Suicide Death Rate, 0 to 24 Years of Age (per 100,000)	2010-2017	NA	5	5	6	5	8
Suicide Death Rate (per 100,000)	2017	10.2	14.0	14.8	14.4	18.3	14.3
Uterine Cancer Rate (per 100,000 females)	2016	7	37	31	34	35	28
Colorectal Cancer Death Rate (per 100,000)	2016	15	14	15	15	12	12
Lung and Bronchus Cancer Death Rate (per 100,000)	2016	0.3	0.1	5.7	1.3	4.1	6.9

Table 16. *Unfavorable to Three Benchmarks (continued)*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Heart Disease Death Rate (per 100,000)	2017	103	93	102	99	81	98
Parkinson's Disease Death Rate (per 100,000)	2017	NA	8	9	10	12	9

3.1.6 Unfavorable to Four Benchmarks

Table 17. *Unfavorable to Four Benchmarks*

Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Rate of Fast Food Restaurants (per 100,000)	2016	NA	77	81	82	78	63
Medicare Patient Preventable Hospitalization Rate	2015	NA	49	57	59	54	57
Population with Limited Access to Healthy Foods	2015	6%	22%	25%	40%	34%	46%
Teen Death Rate from Accidents, Homicides, and Suicides (per 100,000)	2016-2017	NA	128	136	173	165	104
Fall Death Rate (per 100,000)	2015	NA	13.5%	14.2%	13.7%	12.7%	13.8%
Driving Deaths Associated with Alcohol	2012-2016	NA	30%	34%	38%	24%	30%
Alcohol-related Death Rate (per 100,000)	2016-2017	NA	10	9	11	8	8

Table 18. *Unfavorable to Four Benchmarks (continued)*

| Measure	Data Year	HP 2020	US	Ohio	Lake County	Licking County	Clermont County
Drug Overdose Death Rate (per 100,000)	2017	11	22	42	44	22	46
Medicare Population with High Blood Pressure	2015	27%	55%	57%	56%	55%	55%
Medicare Population with Heart Disease	2015	NA	26%	27%	28%	24%	26%
Medicare Population with Alzheimer's Disease	2015	NA	10%	10%	11%	9%	9%

3.2 Community Resident Survey

3.2.1 Overview

A total of 1,754 Lake County residents completed the 2019 community resident survey. In order to ensure that the survey respondent demographic characteristics were proportional to the actual demographic characteristics of Lake County residents, several statistical weights were utilized to adjust for sex (Table 1), age (Table 2), race (Table 3), ethnicity (Table 4), and education (Table 5), as identified in Section 2.3.5.

Unweighted respondents were primarily female (78%), Caucasian (92%), married (63%), between the ages of 55 and 69 years of age (38%), currently employed (56%), characterized by an annual household income of $20,000 to $59,999 (66%), had a Bachelor's Degree or higher (43%), and spoke English at home (96%).

Following the application of the aforementioned weights (which is reflected by all of the survey results to follow), overall health was predominately characterized as very good (37%) to good (40%), while Body Mass Index (BMI) calculations indicated that more than half of respondents were overweight (32%) or obese (41%), and roughly one-third reported that they currently had high blood pressure (40%) and/or high cholesterol (32%). More than three-quarters of respondents had received routine care from their doctor (76%) and dentist (67%) in the past 12 months, and 90% of respondents received their routine or preventative care at a facility located in Lake County. Thirty-six percent of respondents (36%) reported having one or more individuals under the age of 18 years of age currently living in their home.

Figure 1. *Health Status*
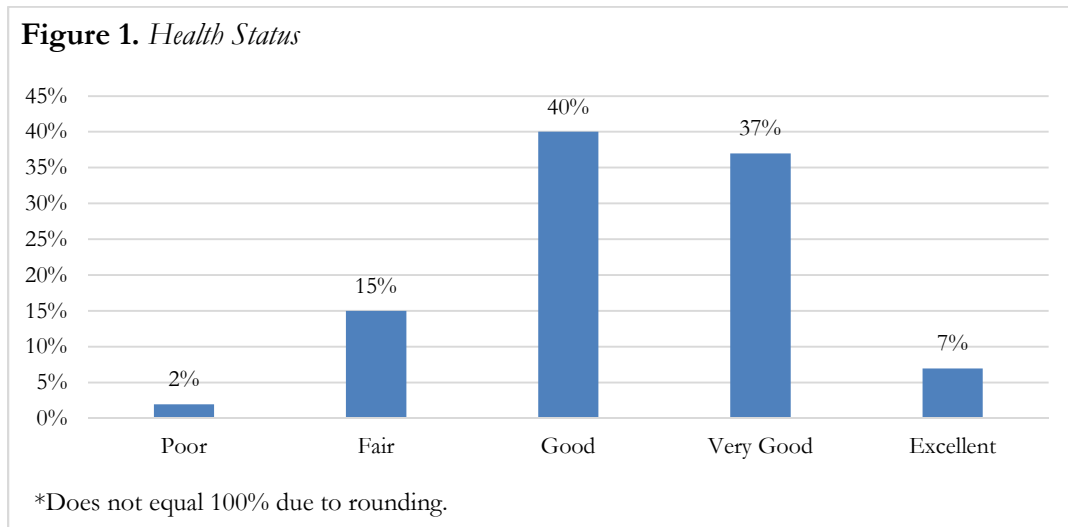
Overall health was characterized predominately as "Good" (40%) and "Very good" (37%), and less than one-fifth characterized their health as "Poor" (2%) or "Fair" (15%; Figure 1). Individuals indicating "Excellent" health were predominately female (9%) and less than 30 years of age (9%; Figure 2). Individuals indicating "Excellent" health increased linearly with greater educational attainment and total annual household income, respectively (Figure 3).

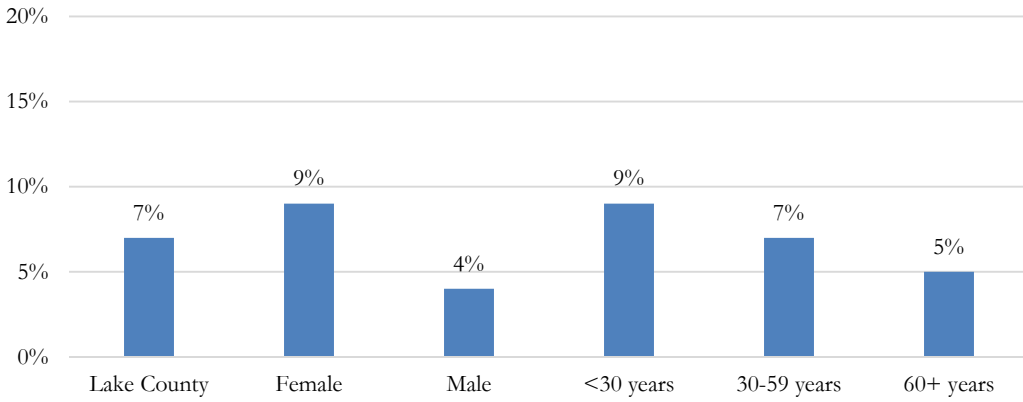**Figure 2.** *Composite, Sex, and Age of Individuals with Excellent Health Status*

Figure 3. *Education and Income of Individuals with Excellent Health Status*
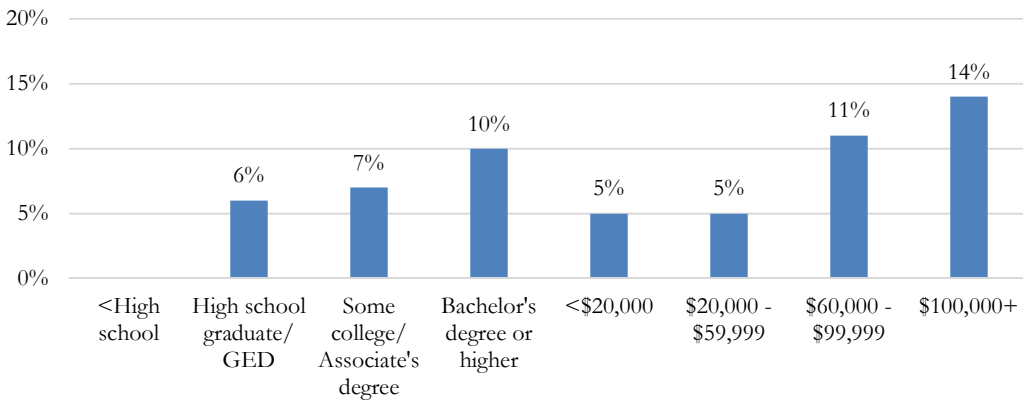
Figure 4. *Composite, Sex, and Age of Individuals with Poor Health Status*

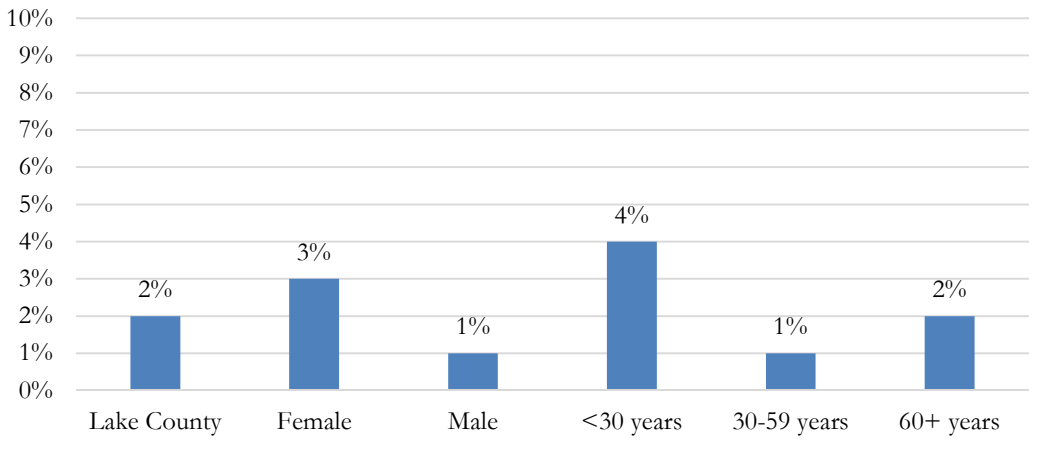|	
Lake County	2%
Female	3%
Male	1%
<30 years	4%
30-59 years	1%
60+ years	2%

Figure 5. *Education and Income of Individuals with Poor Health Status*

<High school	3%
High school graduate/ GED	2%
Some college/ Associate's degree	1%
Bachelor's degree or higher	2%
<$20,000	9%
$20,000 - $59,999	2%
$60,000 - $99,999	
$100,000+	1%
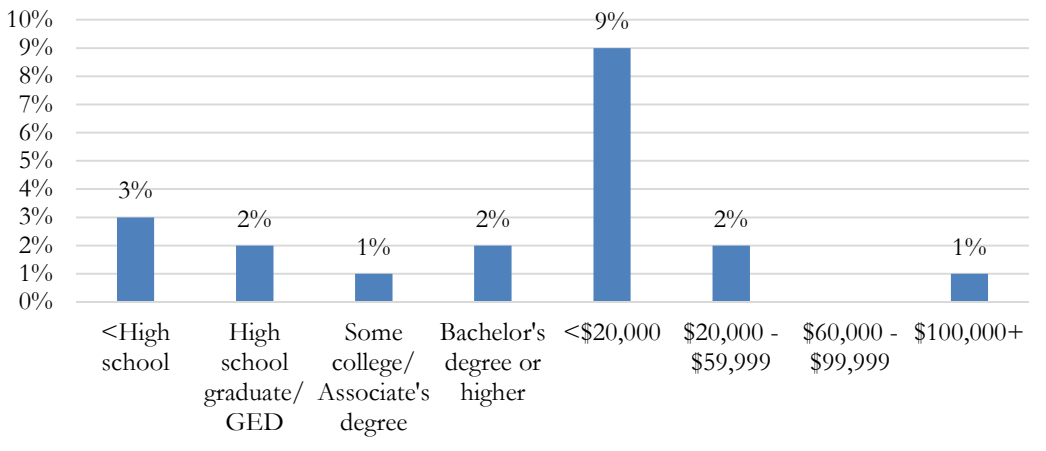
Similar to those reporting "Excellent" health, individuals reporting "Poor" health status were predominately female (3%) and less than 30 years of age (4%; Figure 4). Individuals with a household income less than $20,000 represented the highest percentage of those indicating "Poor" health (9%), diverging considerably from those with household incomes of $20,000 to $59,999, $60,000 to $99,999, and greater than $100,000, respectively (Figure 5).

Figure 6. *Composite, Sex and Age of Individuals with Poor Physical Health Days in the Past 30 Days*

Bar chart showing mean poor physical health days: Lake County 5, Female 5, Male 6, <30 years 3, 30-59 years 5, 60+ years 6.

Figure 7. *Education and Income of Individuals with Poor Physical Health Days in the Past 30 Days*

Bar chart showing mean poor physical health days: <High school 6, High school graduate/GED 7, Some college/Associate's degree 5, Bachelor's degree or higher 4, <$20,000 6, $20,000 - $59,999 6, $60,000 - $99,999 3, $100,000+ 4.

Mean poor physical health days was relatively consistent across county, sex, and age categories, save for those less than 30 years of age (Figure 6). Poor physical health days was greatest for males (Figure 6), increased with age (Figure 6), and decreased with greater educational attainment and total annual household income, respectively (Figure 7). Mean poor physical health days was lowest among those less than 30 year of age (Figure 6), and with total annual household incomes of $60,000 to $99,999 (Figure 7).
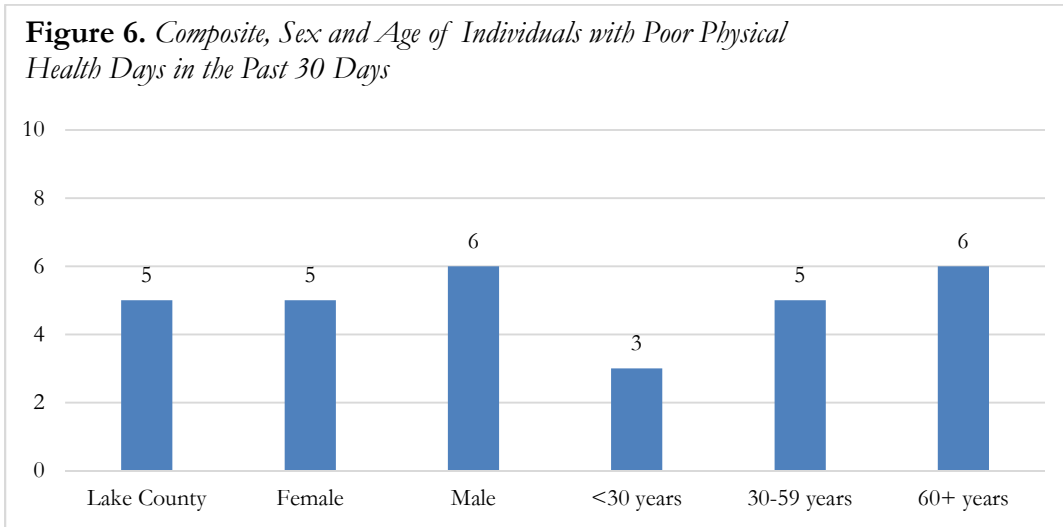
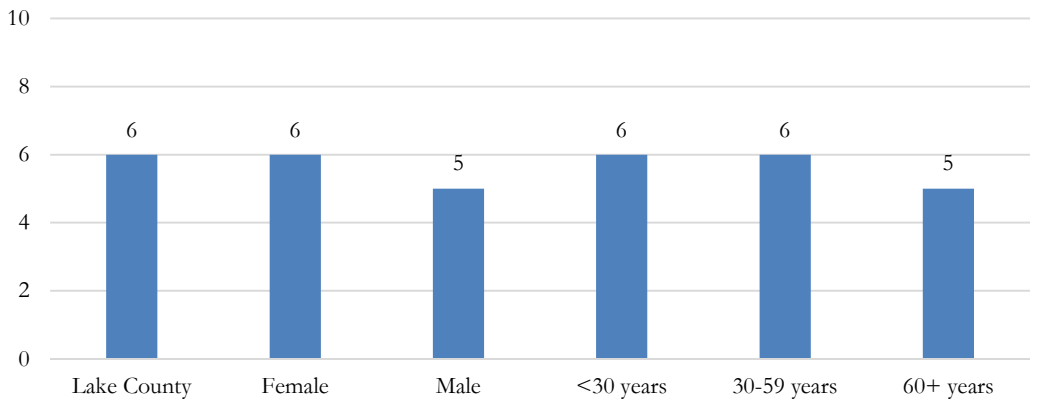**Figure 8.** *Composite, Sex and Age of Individuals with Poor Mental Health Days in the Past 30 Days*

Lake County: 6
Female: 6
Male: 5
<30 years: 6
30-59 years: 6
60+ years: 5

Figure 9. *Education and Income of Individuals with Poor Mental Health Days in the Past 30 Days*

<High school: 5
High school graduate/GED: 7
Some college/Associate's degree: 6
Bachelor's degree or higher: 4
<$20,000: 9
$20,000 - $59,999: 6
$60,000 - $99,999: 3
$100,000+: 4
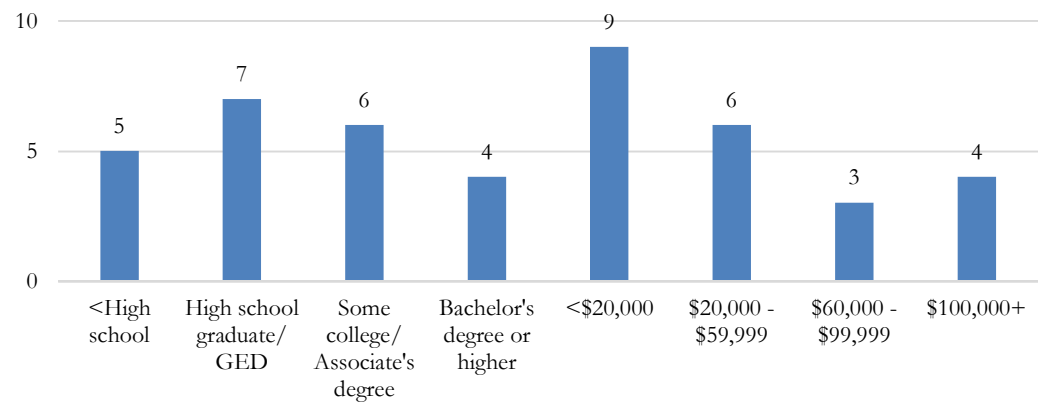
Mean poor mental health days was consistent across county, female, less than 30 years of age, and 30 to 59 years of age categories (Figure 8), and was lowest amongst those reporting a household income of $60,000 to $99,999 (Figure 9). Like those reporting poor physical health days, mean poor mental health days decreased with greater educational attainment and household income (Figure 9).

Figure 10. *Composite, Sex, and Age of Individuals with Poor Physical or Mental Health Days Interfering with Usual Activities in the 30 Days*

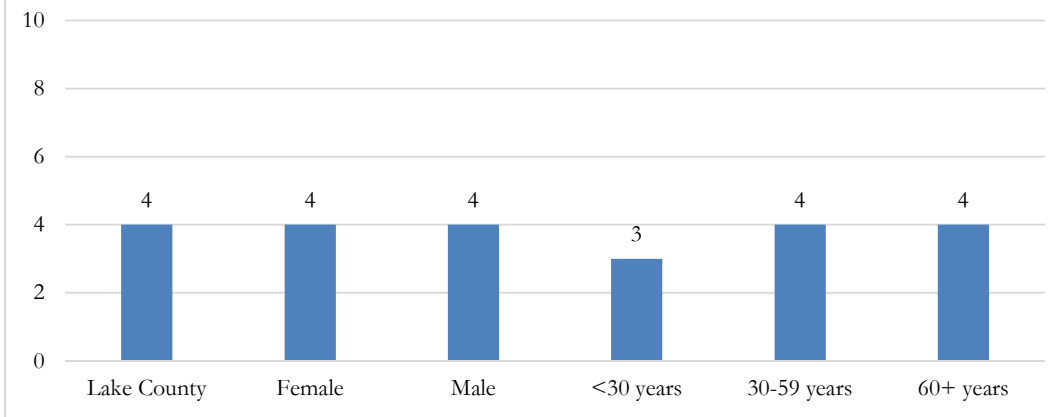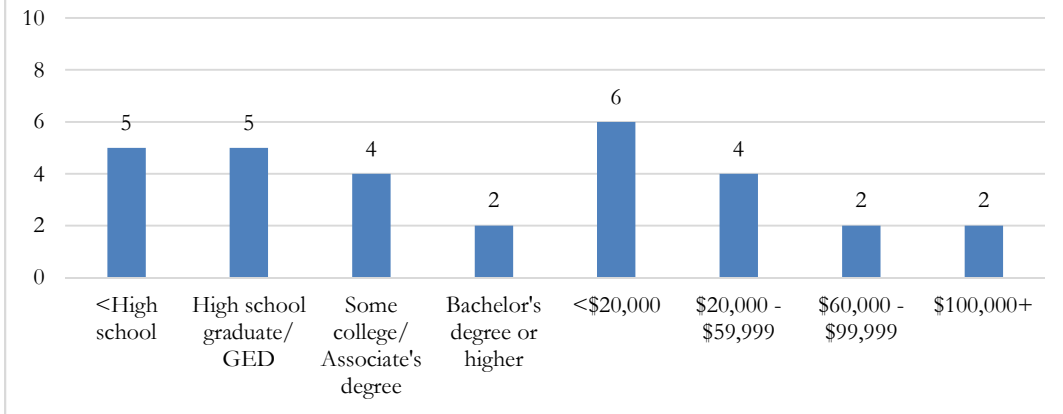| Category	Value
Lake County	4
Female	4
Male	4
<30 years	3
30-59 years	4
60+ years	4

Figure 11. *Education and Income of Individuals with Poor Physical or Mental Health Days Interfering with Usual Activities in the Past 30 Days*

Category	Value
<High school	5
High school graduate/GED	5
Some college/Associate's degree	4
Bachelor's degree or higher	2
<$20,000	6
$20,000 - $59,999	4
$60,000 - $99,999	2
$100,000+	2

A mean of four poor physical or mental health days that interfered with usual activities was consistent across county, sex, 30 to 59 years of age, and 60 years of age and greater values (Figure 10), and mean poor physical or mental health days decreased with greater educational attainment and total annual household income, respectively (Figure 11). The greatest mean poor physical or mental health days was observed among those with total annual household incomes less than $20,000, while those with a Bachelor's degree or higher, and total annual household incomes of $60,000 to $99,999 and greater than $100,000 experienced the lowest mean poor physical or mental health days (Figure 11).

3.2.2 Community Health Concerns

Based upon the benchmarking methodology used to rank the secondary data presented in Section 3.1, and the categorization of measures unfavorable to four or more benchmarks as county-specific health concerns, as outlined in Section 3.1.6, survey respondents were provided a list of the secondary measures unfavorable to four or more benchmarks accompanied by the following question: "Do you think any of the following are health concerns in Lake County? (Select all that apply)" (Table 19).

Table 19. *Community Health Concerns Identified in the Community Resident Survey*

	(%)
Drug overdose deaths	78
Alcohol-related driving deaths	47
High blood pressure	45
Preventable teen deaths	43
Heart disease	42
Fast food restaurant density	34
Alcohol-related deaths	31
Alzheimer's disease	27
Preventable hospitalizations	29
Limited access to healthy foods	26
Fall deaths	11

Figure 12. *Composite, Sex, and Age of Individuals Identifying Drug Overdose Death as a Community Health Concern*

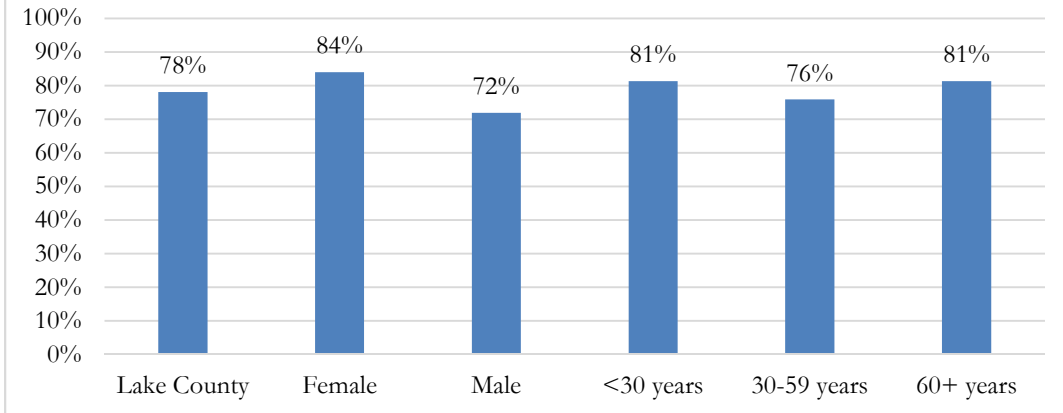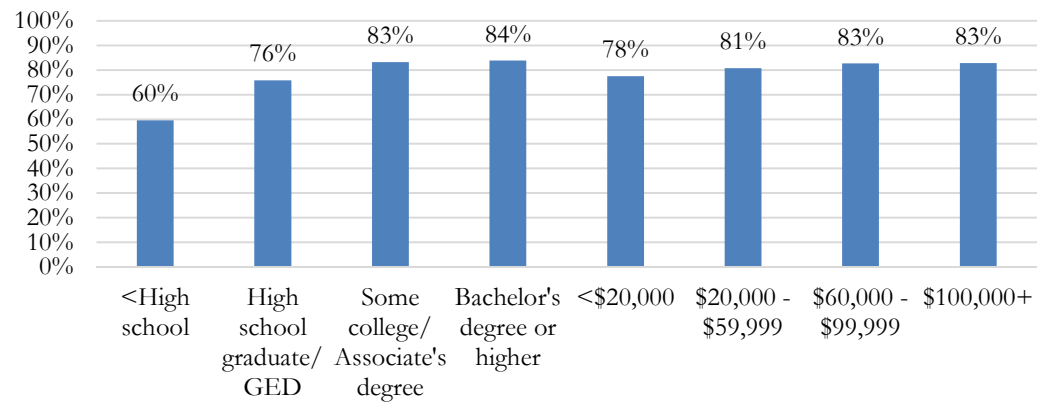| Category	Percent
Lake County	78%
Female	84%
Male	72%
<30 years	81%
30-59 years	76%
60+ years	81%

Figure 13. *Education and Income of Individuals Identifying Drug Overdose Death as a Community Health Concerns*

Category	Percent
<High school	60%
High school graduate/ GED	76%
Some college/ Associate's degree	83%
Bachelor's degree or higher	84%
<$20,000	78%
$20,000 - $59,999	81%
$60,000 - $99,999	83%
$100,000+	83%

More than three-quarters (78%) of respondents identified drug overdose death as a community health concern in Lake County (Table 19), 84% of which were female (Figure 12), or had a Bachelor's Degree or higher (Figure 13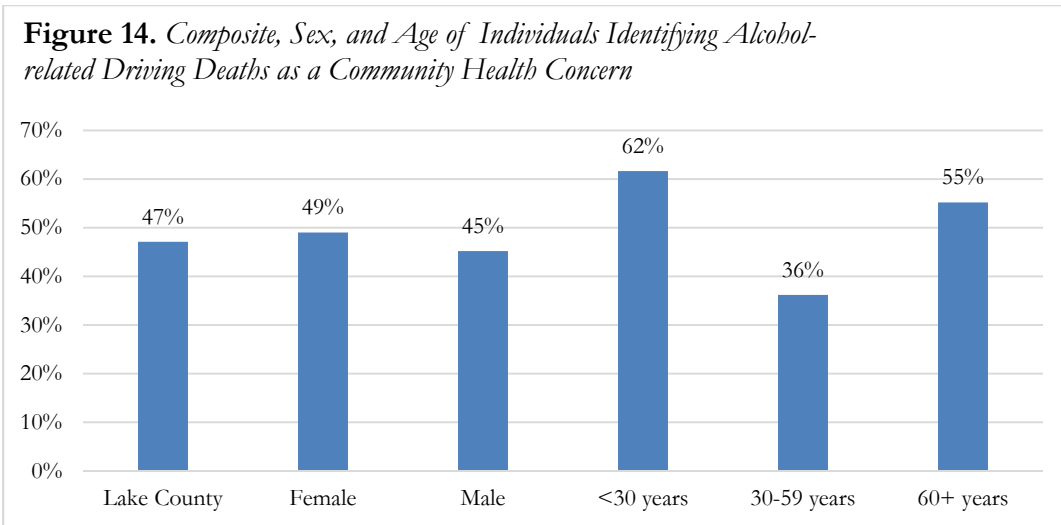). Identification of drug overdose death as a community health concern increased with increased educational attainment and total annual household income, and was lowest among individuals with less than a high school education (Figure 13).

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Figure 14. *Composite, Sex, and Age of Individuals Identifying Alcohol-related Driving Deaths as a Community Health Concern*

Figure 15. *Education and Income of Individuals Identifying Alcohol-related Driving Deaths as a Community Health Concern*
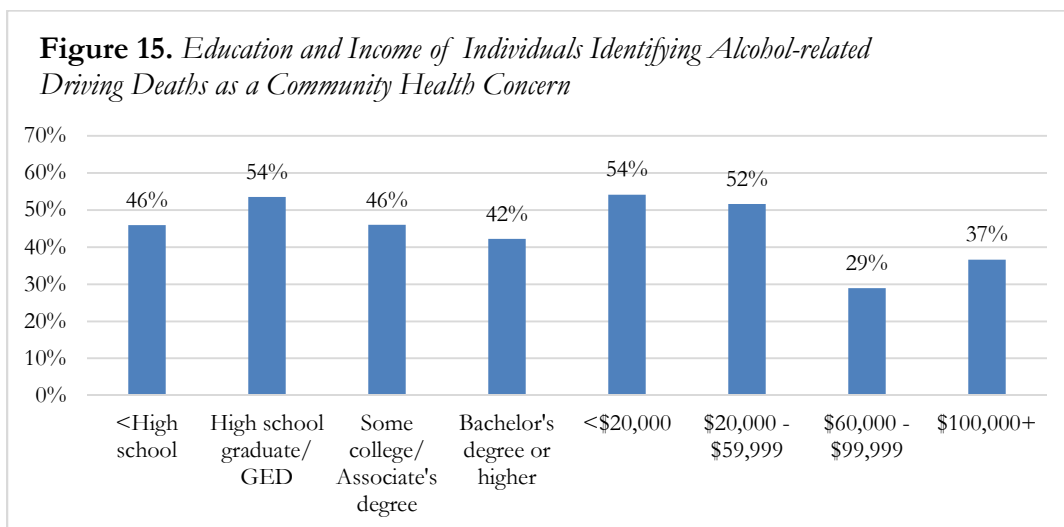
Approximately one-half (47%) of respondents identified alcohol-related driving deaths as a community health concern, and identification remained relatively consistent between male (45%) and female (49%) respondents (Figure 14). With respect to age, individuals less than 30 years of age represented the greatest percentage of individuals (62%) reporting alcohol-related driving deaths as a community health concern (Figure 14), while those characterized by total annual household incomes of $60,000 to $99,999 (29%) reported the least concern (Figure 15). Identification of alcohol-related driving deaths as a community health concern declined with increased educational attainment and total annual household income, respectively (Figure 15).

Figure 16. *Composite, Sex, and Age of Individuals Identifying Preventable Teen Deaths as a Community Health Concern*
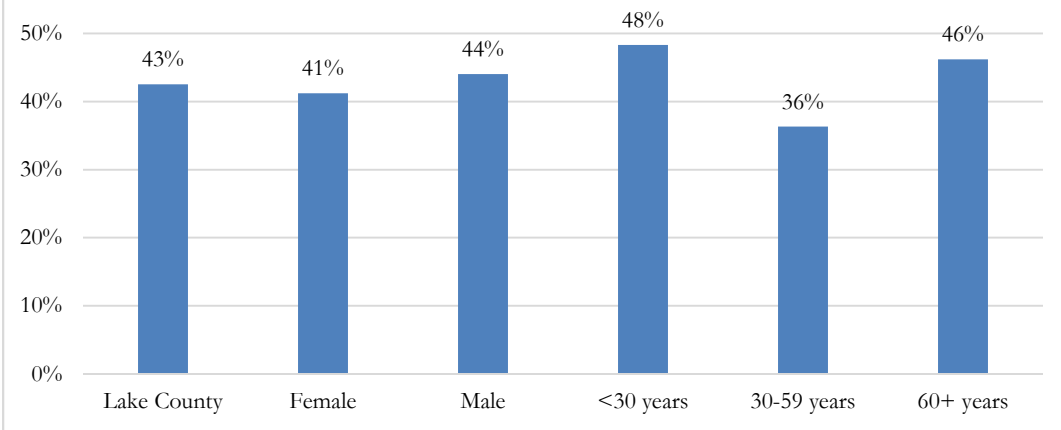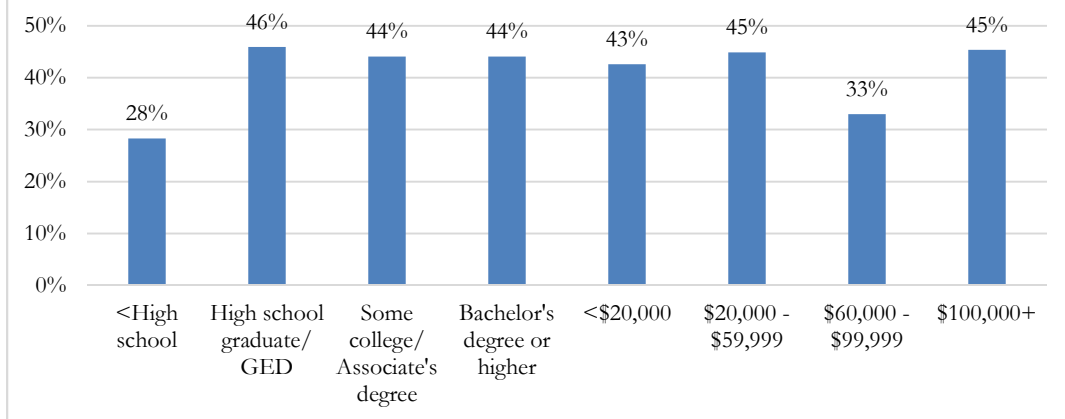
A bar chart titled showing percentages: Lake County 43%, Female 41%, Male 44%, <30 years 48%, 30-59 years 36%, 60+ years 46%.

Figure 17. *Education and Income of Individuals Identifying Preventable Teen Deaths as a Community Health Concern*

A bar chart showing percentages: <High school 28%, High school graduate/GED 46%, Some college/Associate's degree 44%, Bachelor's degree or higher 44%, <$20,000 43%, $20,000 - $59,999 45%, $60,000 - $99,999 33%, $100,000+ 45%.

Less than one-half of respondents (43%) identified preventable teen death as a community health concern (Figure 16). Individuals less than 30 years of age (Figure 16) reported the greatest concern for preventable teen death (48%), while individuals with less than a high school education (Figure 17) reported the least concern for preventable teen death (28%). Little variability in the identification of preventable teen death as a community health concern was observed across composite and sex categories (Figure 16). With respect to education and income, identification was relatively consistent, save for those individuals with less than a high school education, and individuals with a total annual household income of $60,000 to $99,999 (Figure 17).

Figure 18. *Composite, Sex, and Age of Individuals Identifying Heart Disease as a Community Health Concern*
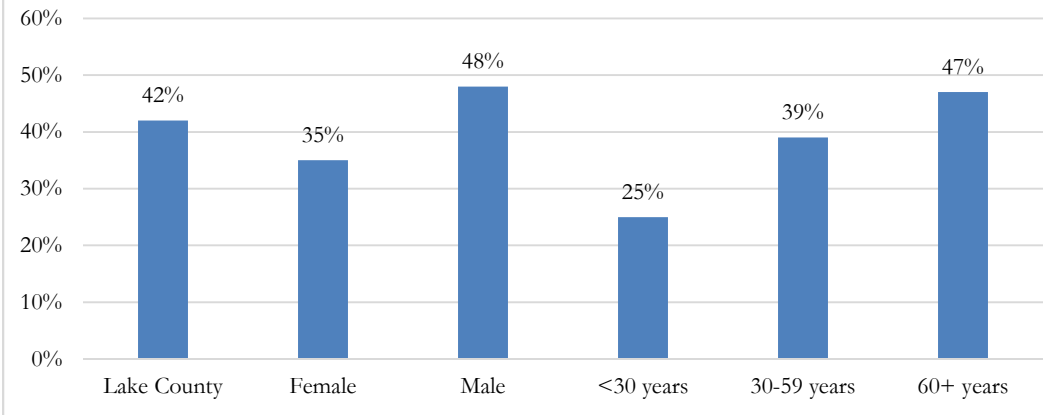
Figure 19. *Education and Income of Individuals Identifying Heart Disease as a Community Health Concern*
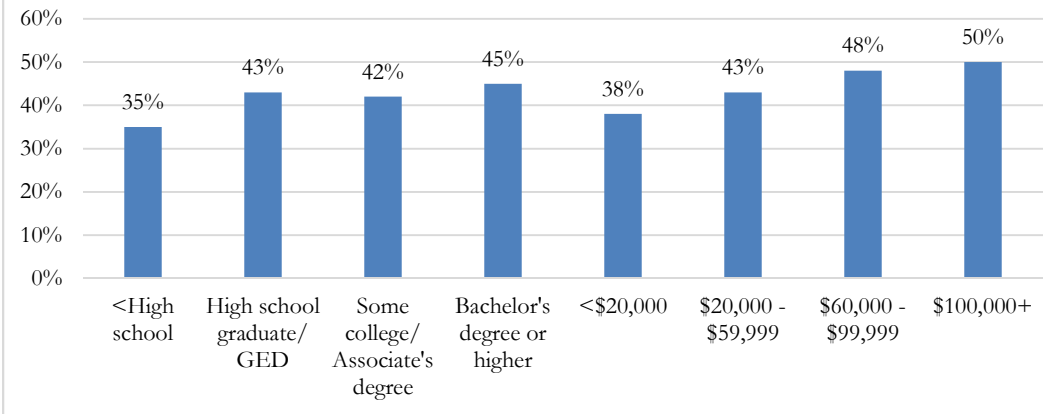
Forty-two percent of respondents identified heart disease as a community health concern (Figure 18). Identification of heart disease as a community health concern was greatest among individuals reporting a total annual household income of $100,000 or greater (Figure 19), higher among males than females (Figure 18), and increased with advancing age (Figure 18), increased educational attainment (Figure 19), and greater total annual household income (Figure 19).

Figure 20. *Composite, Sex, and Age of Individuals Identifying High Blood Pressure as a Community Health Concern*
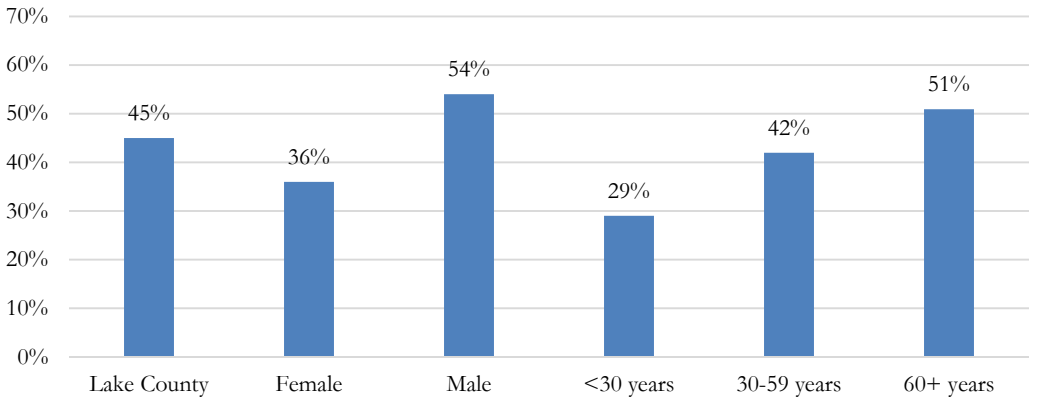
Figure 21. *Education and Income of Individuals Identifying High Blood Pressure as a Community Health Concern*
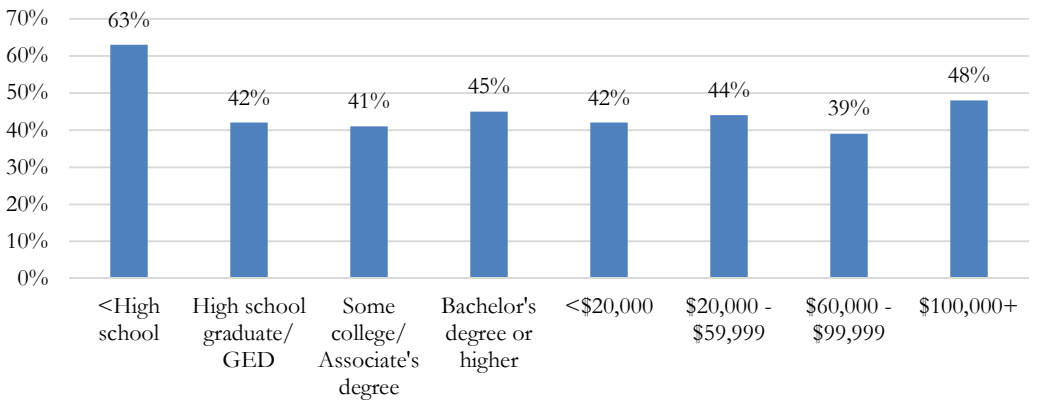
Less than one-half of respondents (45%) identified high blood pressure as a community health concern (Figure 20). Identification of high blood pressure as a community health concern was highest among individuals with less than a high school education (Figure 21), least among individuals less than 30 years of age (Figure 20), greater among males than females (Figure 20), and increased with advancing age (Figure 20).

Figure 22. *Composite, Sex, and Age of Individuals Identifying Fast Food Restaurant Density as a Community Health Concern*

Category	Percentage
Lake County	34%
Female	38%
Male	31%
<30 years	40%
30-59 years	33%
60+ years	31%
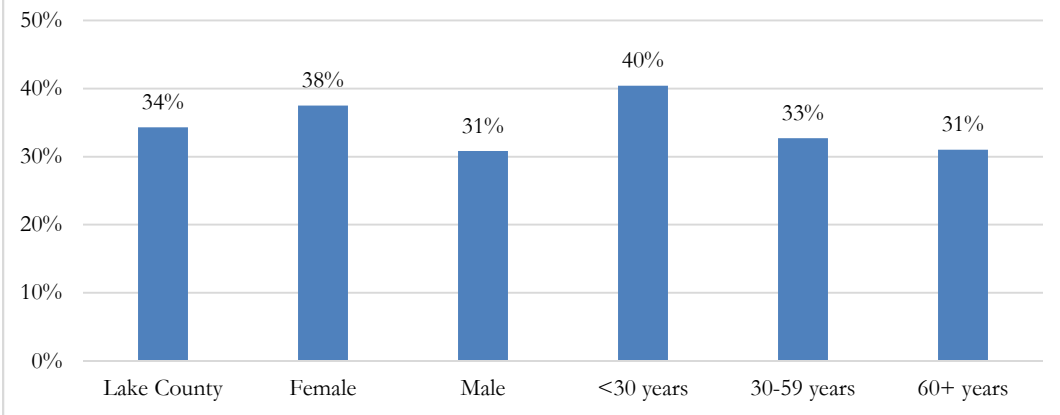
Figure 23. *Education and Income of Individuals Identifying Fast Food Restaurant Density as a Community Health Concern*

Category	Percentage
<High school	10%
High school graduate/GED	38%
Some college/Associate's degree	41%
Bachelor's degree or higher	35%
<$20,000	31%
$20,000 - $59,999	36%
$60,000 - $99,999	34%
$100,000+	38%
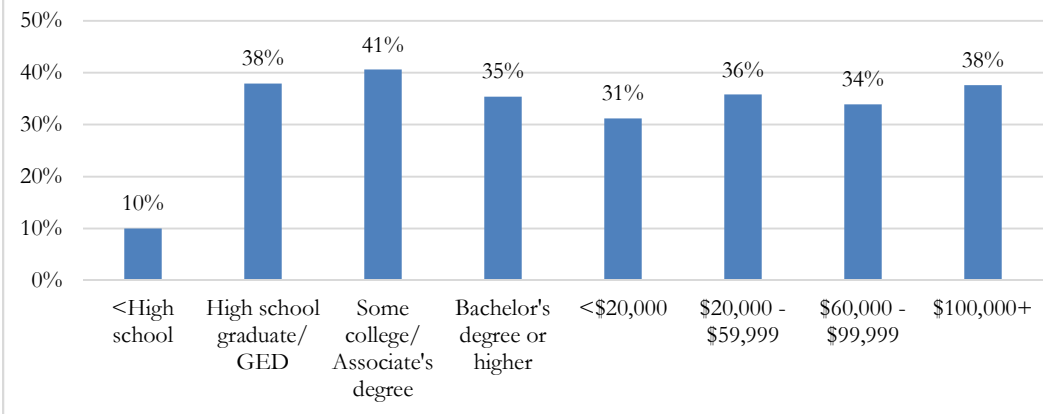
Approximately one-third (34%) of respondents identified fast food restaurant density as a community health concern (Figure 22). Identification of fast food restaurant density as a community health concern was highest among individuals with some college or an Associate's degree (41%), and lowest among individuals with less than a high school education (10%; Figure 23). Identification of fast food restaurant density as a community health concern decreased with advancing age (Figure 22), and increased between individuals with a total annual household income less than $20,000, and $20,000 to $59,999, and between total annual household incomes of $60,000 to $99,999, and $100,000 or greater, respectively (Figure 23).

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Figure 24. *Composite, Sex, and Age of Individuals Identifying Alzheimer's Disease as a Community Health Concern*

Lake County	27%
Female	28%
Male	25%
<30 years	9%
30-59 years	20%
60+ years	38%
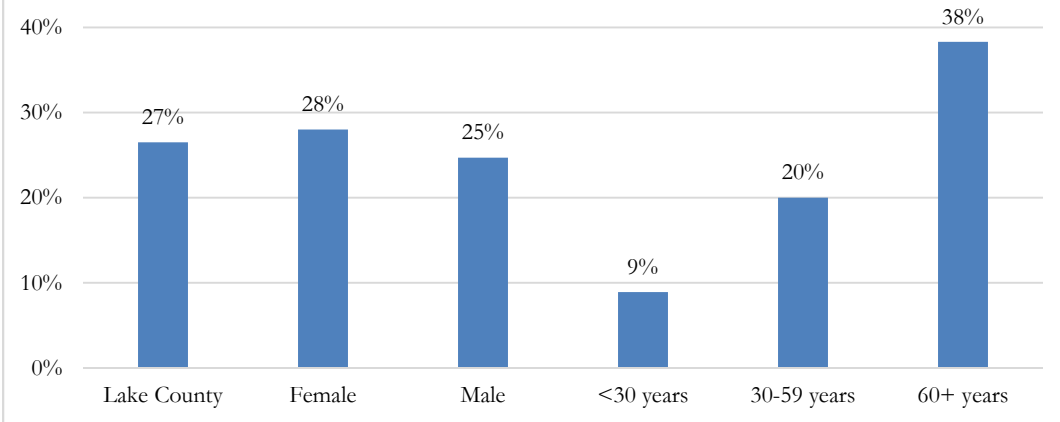
Figure 25. *Education and Income of Individuals Identifying Alzheimer's Disease as a Community Health Concern*

<High school	10%
High school graduate/GED	30%
Some college/Associate's degree	27%
Bachelor's degree or higher	31%
<$20,000	36%
$20,000 - $59,999	26%
$60,000 - $99,999	28%
$100,000+	28%
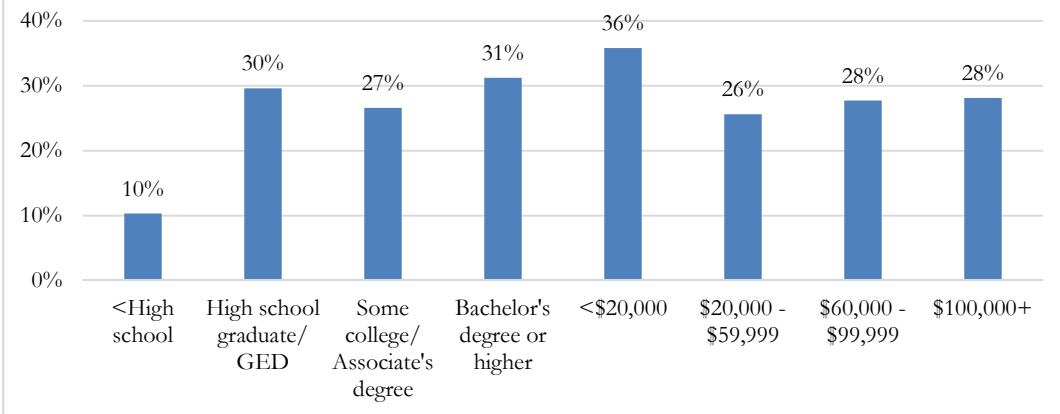
Less than one-third (27%) of respondents identified Alzheimer's disease as a community health concern (Figure 24). Identification of Alzheimer's disease as a community health concern was highest among individuals 60 years of age or older (38%), lowest among those less than 30 years of age (9%), and increased with advancing age (Figure 24). Identification of Alzheimer's disease as a community health concern varied little among included education and income categories, save for those with less than a high school education, and individuals with a total annual household income less than $20,000 (Figure 25).

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Figure 26. *Composite, Sex, and Age of Individuals Identifying Alcohol-related Deaths as a Community Health Concern*

Category	Percentage
Lake County	31%
Female	33%
Male	29%
<30 years	21%
30-59 years	27%
60+ years	36%
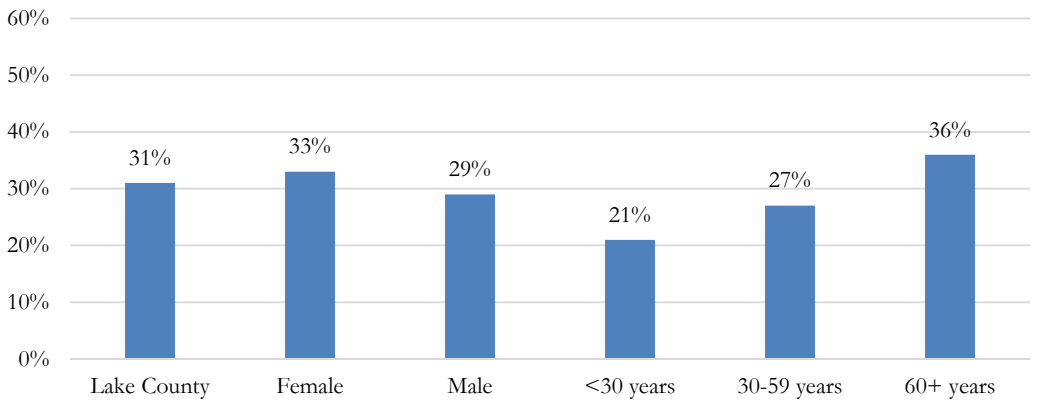
Figure 27. *Education and Income of Individuals Identifying Alcohol-related Deaths as a Community Health Concern*

Category	Percentage
<High school	22%
High school graduate/GED	34%
Some college/Associate's degree	34%
Bachelor's degree or higher	29%
<$20,000	52%
$20,000 - $59,999	31%
$60,000 - $99,999	20%
$100,000+	22%
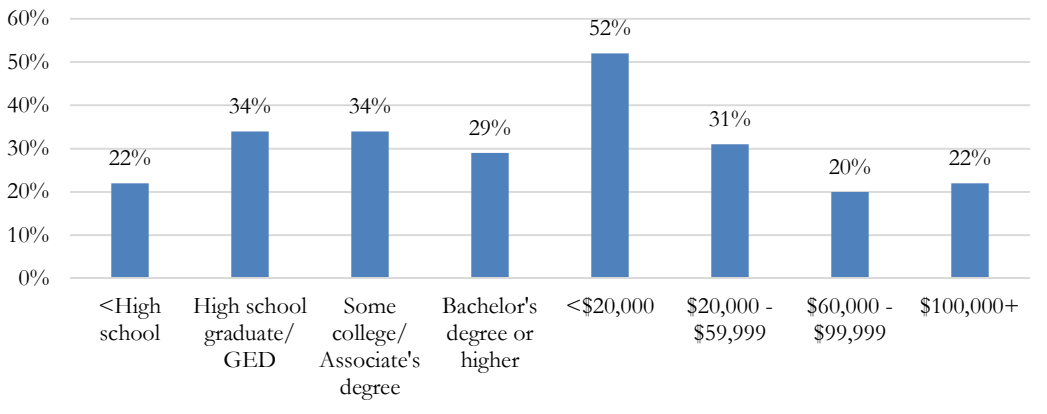
Thirty-one percent of respondents identified alcohol-related death as a community health concern (Figure 26). Individuals with a total annual household income less than $20,000 reported the greatest concern for alcohol-related deaths (52%), while individuals with a total annual household income of $60,000 to $99,999 indicated the least concern (20%), highlighting a decline of concern for alcohol-related deaths with increasing total annual household income (Figure 27). Female respondents identified alcohol-related death as a community health concern more so than males, and said identification increased with advancing age (Figure 26).

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Figure 28. *Composite, Sex, and Age of Individuals Identifying Preventable Hospitalizations as a Community Health Concern*
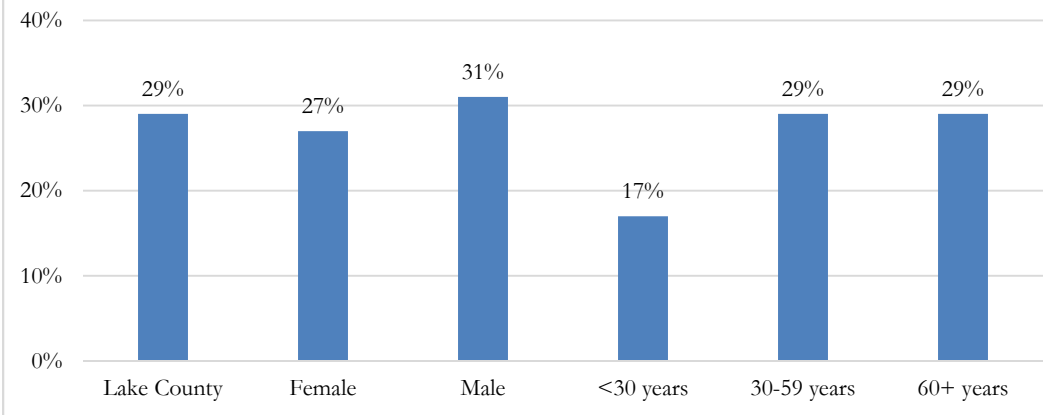
Category	Percentage
Lake County	29%
Female	27%
Male	31%
<30 years	17%
30-59 years	29%
60+ years	29%

Figure 29. *Education and Income of Individuals Identifying Preventable Hospitalizations as a Community Health Concern*

Category	Percentage
<High school	18%
High school graduate/GED	31%
Some college/Associate's degree	29%
Bachelor's degree or higher	31%
<$20,000	31%
$20,000 - $59,999	29%
$60,000 - $99,999	36%
$100,000+	31%
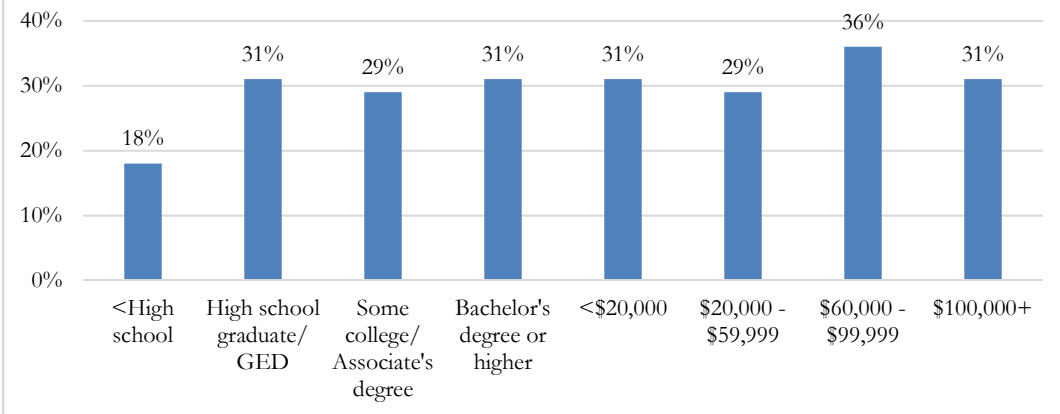
Less than one-third (29%) of respondents identified preventable hospitalizations as a community health concern (Figure 28). Individuals with a total annual household income of $60,000 to $99,999 (Figure 29) identified preventable hospitalizations as a community health concern more than any other included category (36%), while those less than 30 years of age (Figure 28) identified preventable hospitalizations as a community health concern the least (17%). Identification of preventable hospitalizations as a community concern was greater among males than females (Figure 28).

Figure 30. *Composite, Sex, and Age of Individuals Identifying Limited Access to Healthy Foods as a Community Health Concern*

Category	Percentage
Lake County	26%
Female	34%
Male	17%
<30 years	30%
30-59 years	31%
60+ years	21%
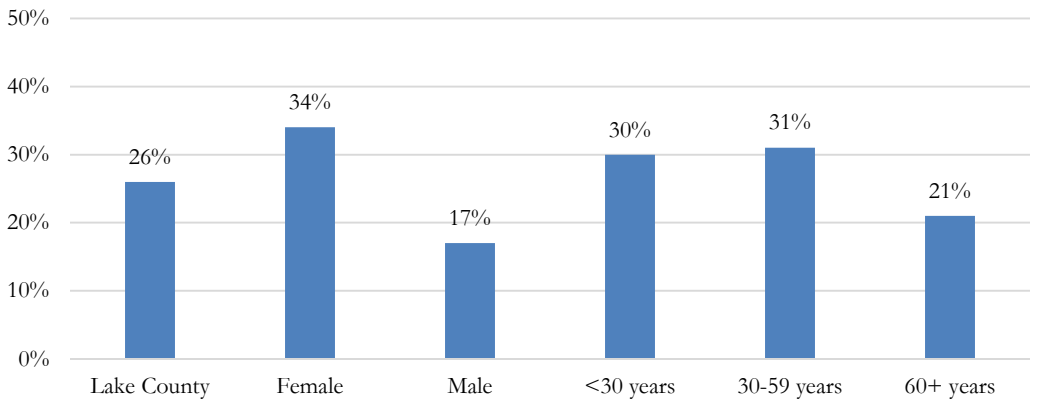
Figure 31. *Education and Income of Individuals Identifying Limited Access to Healthy Foods as a Community Health Concern*

Category	Percentage
<High school	20%
High school graduate/GED	27%
Some college/Associate's degree	28%
Bachelor's degree or higher	24%
<$20,000	42%
$20,000 - $59,999	25%
$60,000 - $99,999	21%
$100,000+	27%
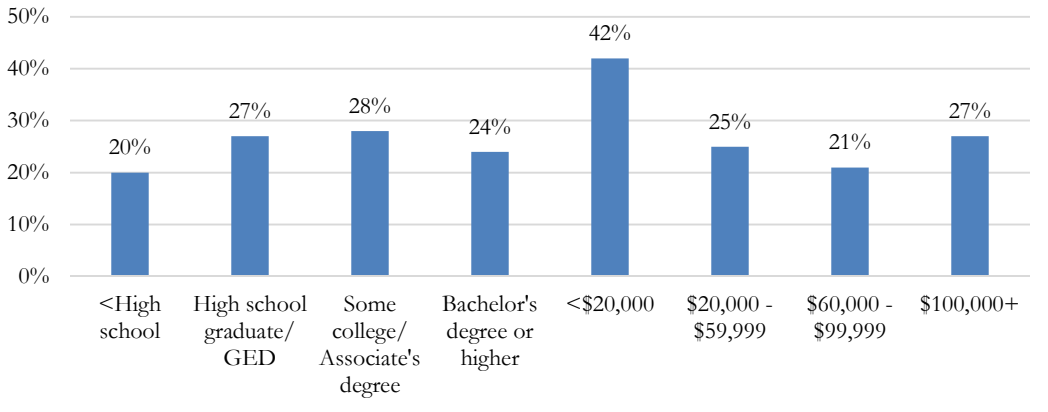
Approximately one-quarter (26%) of respondents identified limited access to healthy foods as a community health concern (Figure 30). Individuals with a total annual household income less than $20,000 (Figure 31) indicated the greatest concern regarding limited access to healthy foods (42%), while males (Figure 30) indicated the least concern (17%).

Figure 32. *Composite, Sex, and Age of Individuals Identifying Fall Deaths as a Community Health Concern*
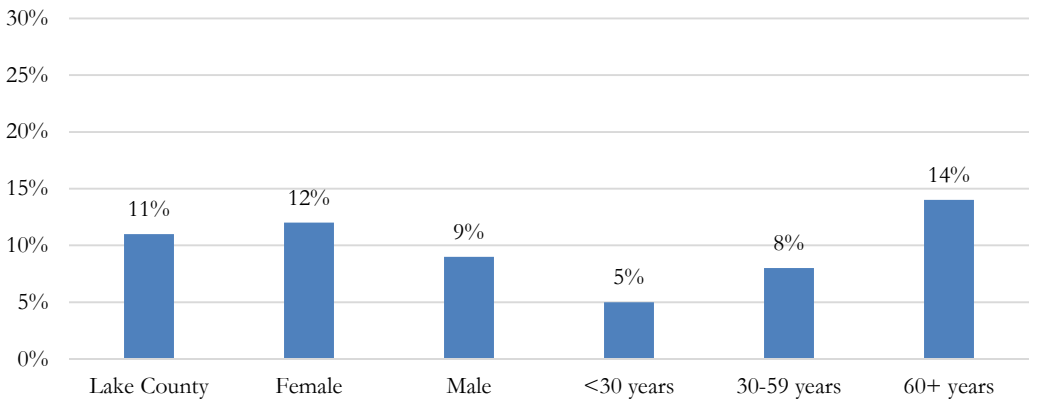
Figure 33. *Education and Income of Individuals Identifying Fall Deaths as a Community Health Concern*
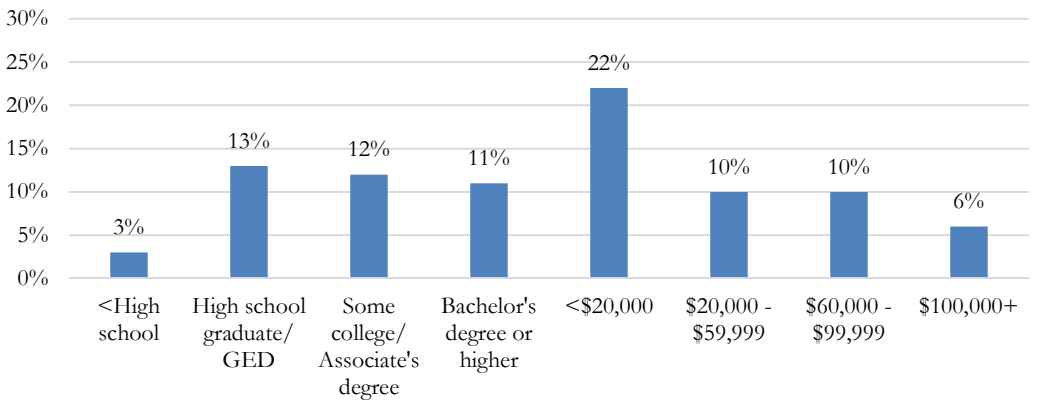
Eleven percent of respondents identified fall deaths as a community health concern (Figure 32). Identification of fall deaths as a community concern was highest among those individuals with a total annual household income less than $20,000 (22%), and least among individuals with less than a high school education (3%; Figure 33). Identification of fall deaths increased with advancing age (Figure 32), and decreased with greater total annual household income (Figure 33).

Survey respondents were also asked to list the top three health problems in Lake County in a qualitative, open-ended format. When organized in order of importance (first through third) and response frequency, respondents identified the following health problems in Lake County:

1. Drug abuse and overdose

2. Obesity

3. Heart disease

3.2.3 Chronic Disease

Figure 34. *Chronic Disease Diagnoses*

Diagnosis	Percent
High blood pressure	40%
Arthritis	33%
High cholesterol	32%
Diabetes	16%
Mood disorder	15%
Anemia	13%
Asthma	13%
Chronic pain	12%
Pneumonia	10%
Cancer	10%
Heart disease	9%
COPD	7%
Kidney disease	6%
Hepatitis A/B/C	5%
Osteoporosis	5%
Fibromyalgia	4%
Inflammatory Bowel Disease	4%
Stroke	2%
Epilepsy	1%
Graves' Disease	1%
Multiple Sclerosis	1%
Other	9%
None	20%
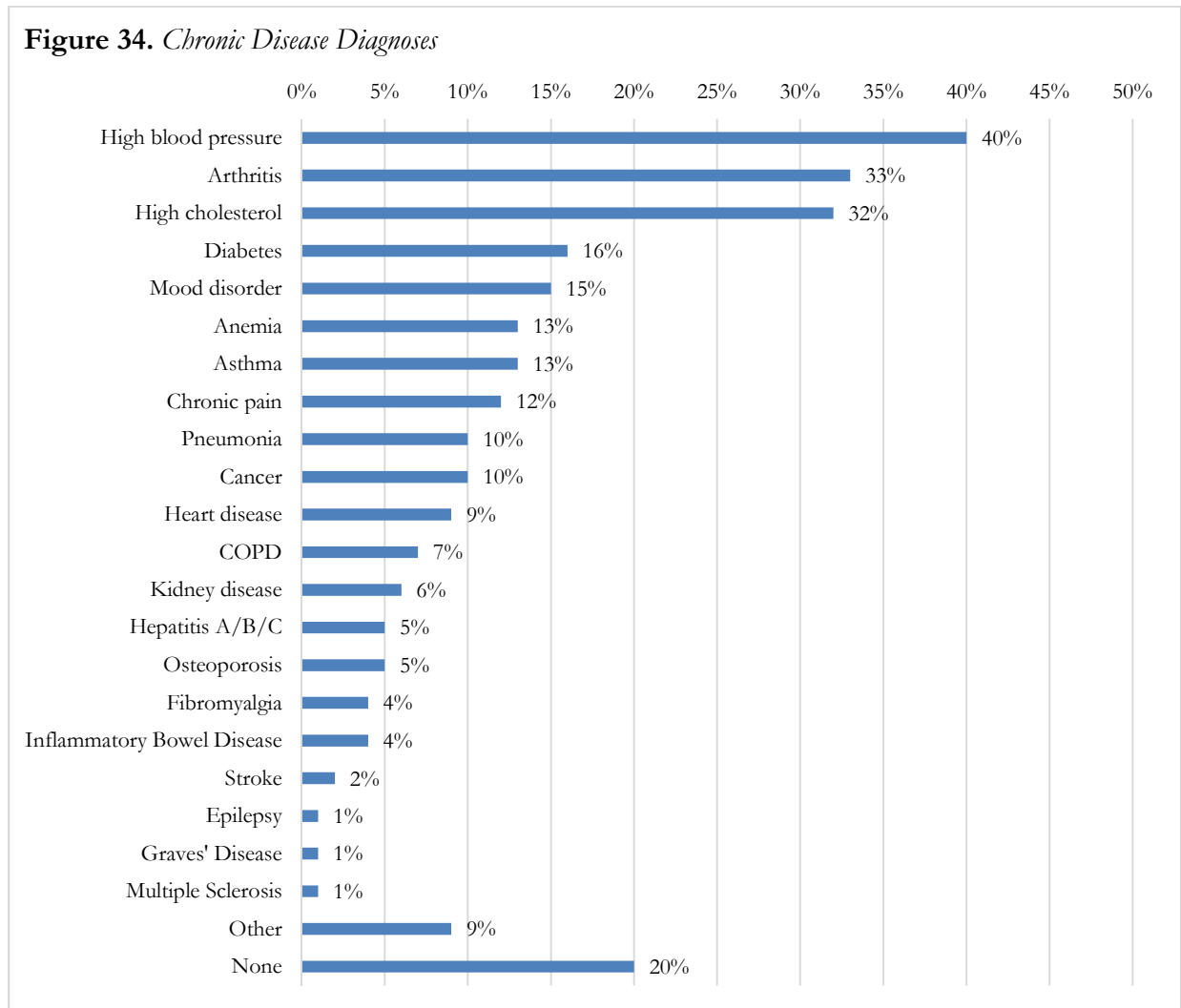
More than one-third of respondents indicated that they had been diagnosed with high blood pressure (40%), arthritis (33%), and and/or high cholesterol (32%) in their lifetime (Figure 34). Ten to 16% of respondents indicated that they had been diagnosed with diabetes (16%), a mood disorder (15%), anemia (13%), asthma (13%), chronic pain (12%), pneumonia (10%), and cancer (10%), and several other chronic diseases were identified. Twenty percent of respondents indicated that they have not been diagnosed with a chronic disease.

Cancer

Figure 35. *Cancer Diagnosis*
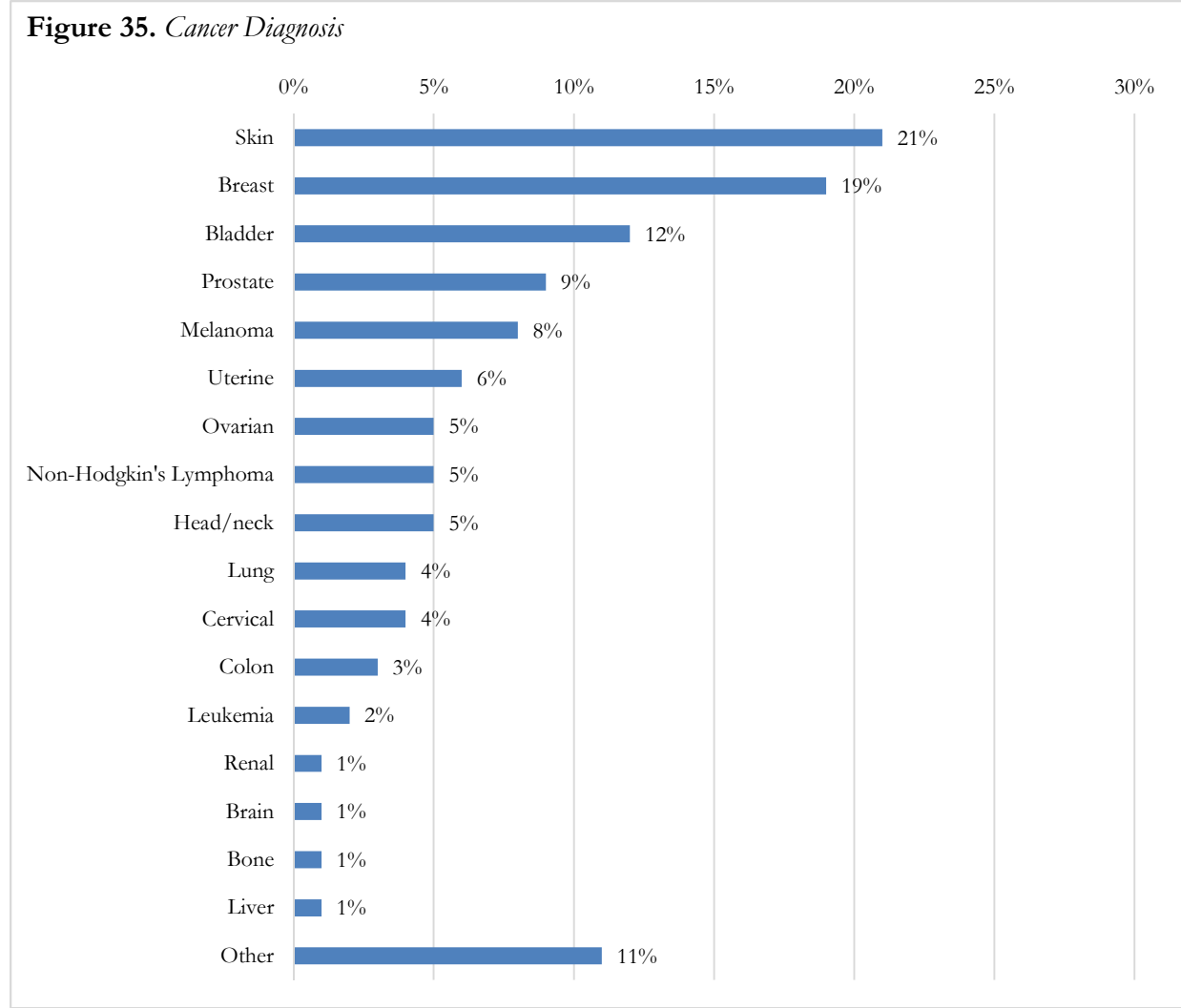
Approximately one-fifth of respondents indicated that they had been diagnosed with skin (21%) and/or breast cancer (19%; Figure 35). Bladder cancer occurred in 12% of respondents, and several cancers comprising less than 10% of responses were recorded.
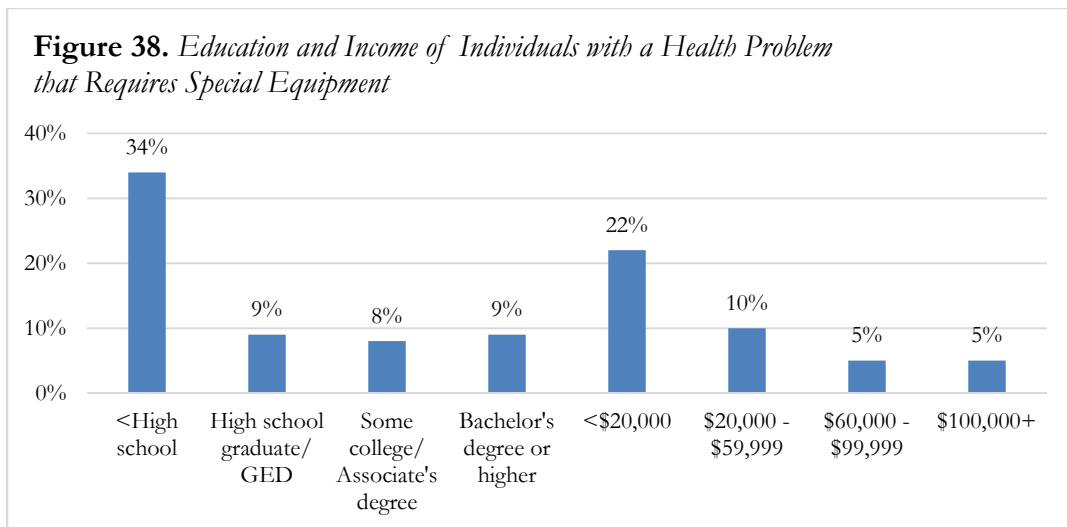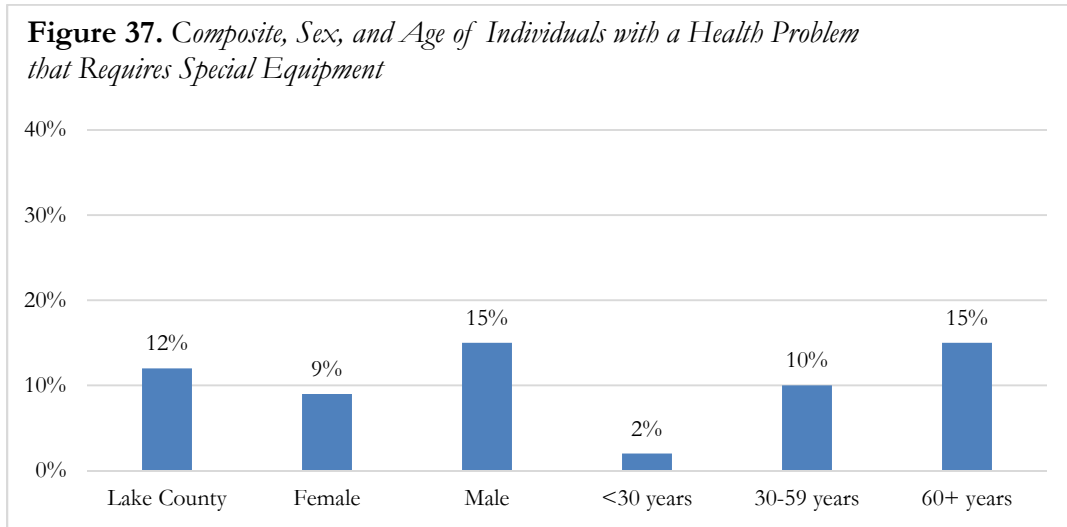
Table 20. *Diabetes Self-care Practices*

	(%)
"I take my diabetes medication as prescribed"	78
"I keep all doctors' appointments recommended for my diabetes treatment"	78
"I check my blood sugar levels with care and attention"	66
"The food I choose to eat makes it easy to achieve optimal blood sugar levels"	46
"I record my blood sugar levels regularly"	37
"I do regular physical activity to achieve optimal blood sugar levels"	37
"Occasionally I eat lots of sweets or other foods rich in carbohydrates"	32
"Sometimes I have real food binges"	20
"I do not check my blood sugar levels frequently enough as would be required	14
"I avoid physical activity, although it would improve my diabetes"	9
"I tend to skip planned physical activity"	9
"I strictly follow the dietary recommendations given by my doctor or specialist"	7
"My diabetes self-care is poor"	6
"Regarding my diabetes care, I should see my medical practitioner(s) more	5
"I tend to forget to take or skip my diabetes medication"	4
"I tend to avoid diabetes-related doctors' appointments"	0.2

Those respondents who indicated they had been previously diagnosed with diabetes were asked to describe their diabetes self-care practices. More than three-quarters indicated correct medication usage practices (78%) and regular diabetes-related doctors' appointments (78%), and two in three respondents (66%) checked their blood sugar levels (Table 20). Approximately one-third (32%) indicated that they occasionally ate sweets or foods rich in carbohydrates, 20% reported occasional food binges, and 14% did not check their blood sugar levels regularly.

Functional Needs

Figure 37. *Composite, Sex, and Age of Individuals with a Health Problem that Requires Special Equipment*

	Lake County	Female	Male	<30 years	30-59 years	60+ years
%	12%	9%	15%	2%	10%	15%

Figure 38. *Education and Income of Individuals with a Health Problem that Requires Special Equipment*

	<High school	High school graduate/GED	Some college/Associate's degree	Bachelor's degree or higher	<$20,000	$20,000 - $59,999	$60,000 - $99,999	$100,000+
%	34%	9%	8%	9%	22%	10%	5%	5%

Twelve percent of respondents indicated that they currently have a health problem requiring special equipment (Figure 37). Individuals requiring special equipment were predominately male (Figure 37), and reported a total annual household income less than $20,000 (Figure 38). Health problems requiring special equipment were highest among individuals with less than a high school education (Figure 38), greater among men than women (Figure 37), increased with advancing age (Figure 37), and decreased with greater total annual household income (Figure 38).
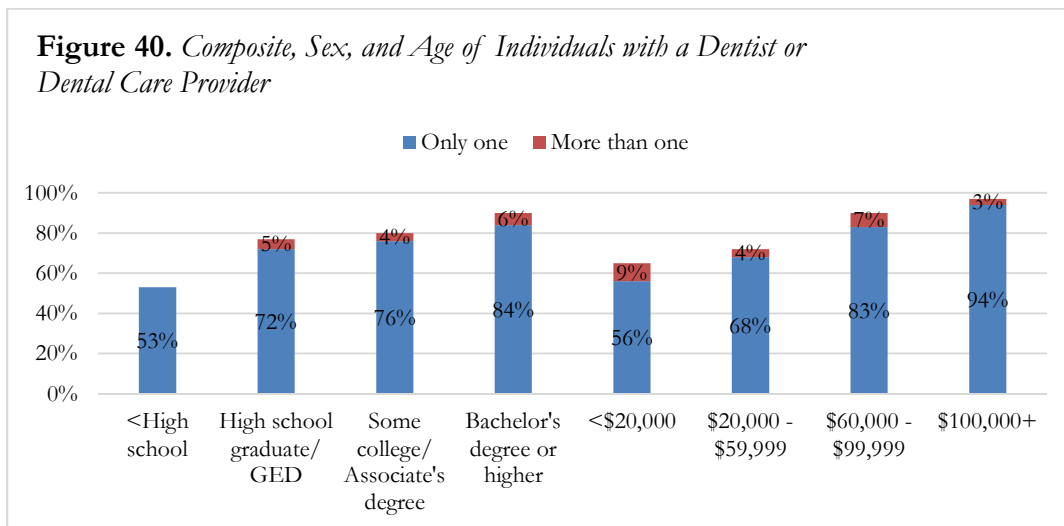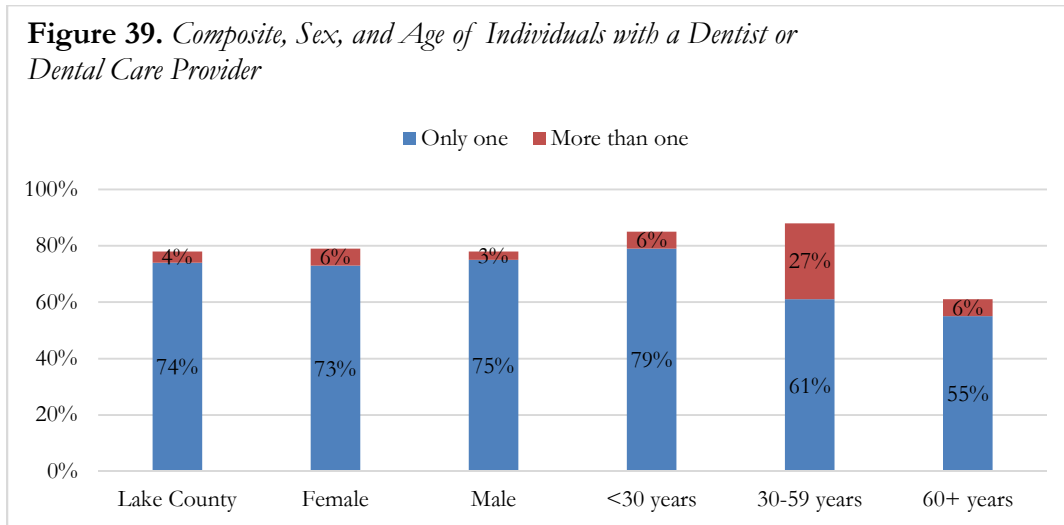
Table 21. *Situations That Are Difficult to Manage Alone, or Without Special Equipment*

	(%)
"Stoop, bend, or kneel"	17
"Stand or be on your feet for about 2 hours"	16
"Walk a quarter of a mile, or about 3 city blocks"	13
"Push or pull large objects like a living room chair"	10
"Walk up 10 steps without resting"	9
"Lift or carry something as heavy as 10 pounds, such as a full bag of groceries"	7
"Go out to things like shopping, movies, or sporting events"	7
"Participate in social activities such as visiting friends, attending clubs and meetings, going to parties"	6
"Use your fingers to grasp or handle small objects"	5
"Sit for about 2 hours"	5
"Reach up over your head"	5
"Do things to relax at home or for leisure (reading, watching TV, sewing, listening to music)"	5

Respondents indicated several situations that were difficult to manage alone, or without the use of special equipment (Table 21). More than 10% of respondents indicated that it was difficult for them to "Stoop, bend, or kneel" (17%), "Stand or be on your feet for about 2 hours" (16%), or "Walk a quarter of a mile, or about 3 city blocks" (13%), respectively. Ten percent of respondents had difficulty when needing to "Push or pull large objects like a living room chair", and others indicated difficulty when tasked to "Walk up 10 steps without resting" (9%), "Lift or carry something as heavy as 10 pounds, such as a full bag of groceries" (7%), "Go out to things like shopping, movies, or sporting events" (7%), "Participate in social activities such as visiting friends, attending clubs and meetings, going to parties" (6%), "Use your fingers to grasp or handle small objects" (5%), "Sit for about 2 hours" (5%), "Reach up over your head" (5%), and "Do things to relax at home or for leisure (reading, watching TV, sewing, listening to music)" (5%).
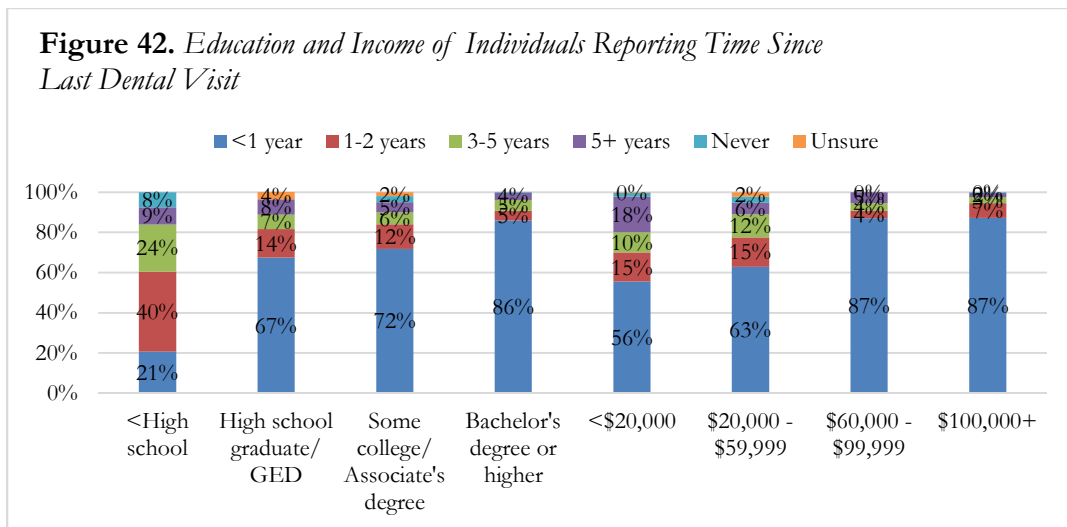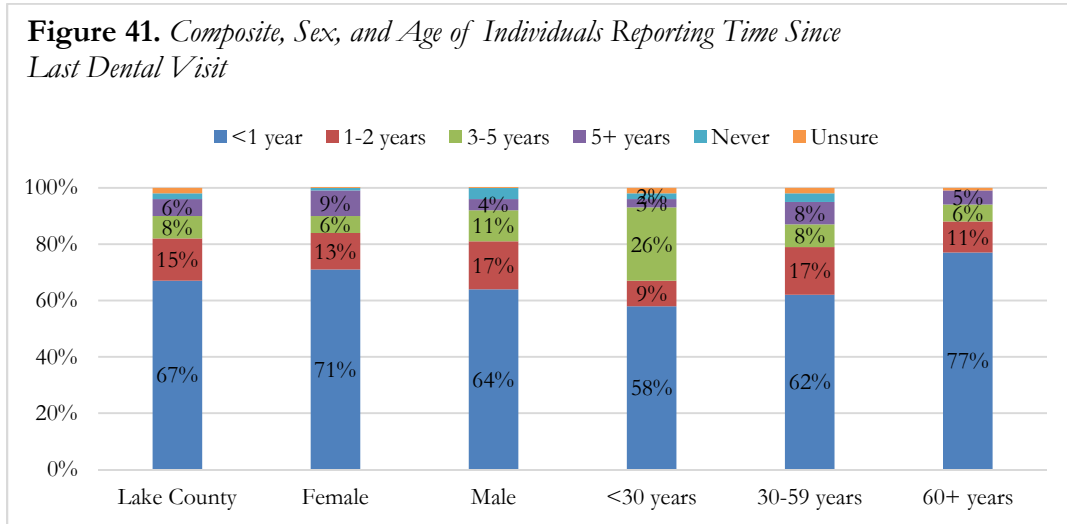
3.2.4 Healthcare Access and Utilization

Dental Care

Figure 39. *Composite, Sex, and Age of Individuals with a Dentist or Dental Care Provider*

■ Only one ■ More than one

Category	Only one	More than one
Lake County	74%	4%
Female	73%	6%
Male	75%	3%
<30 years	79%	6%
30-59 years	61%	27%
60+ years	55%	6%

Figure 40. *Composite, Sex, and Age of Individuals with a Dentist or Dental Care Provider*

■ Only one ■ More than one

Category	Only one	More than one
<High school	53%	
High school graduate/GED	72%	5%
Some college/Associate's degree	76%	4%
Bachelor's degree or higher	84%	6%
<$20,000	56%	9%
$20,000 - $59,999	68%	4%
$60,000 - $99,999	83%	7%
$100,000+	94%	3%

Approximately three-quarters (78%) of respondents indicated that they currently had one or more dentist or dental care provider (Figure 39). Individuals with a total annual household income of $100,000 or greater reported the greatest presence of a dentist or dental care provider (97%), and those with less than a high school education reported the least (53%; Figure 40). Individuals with a
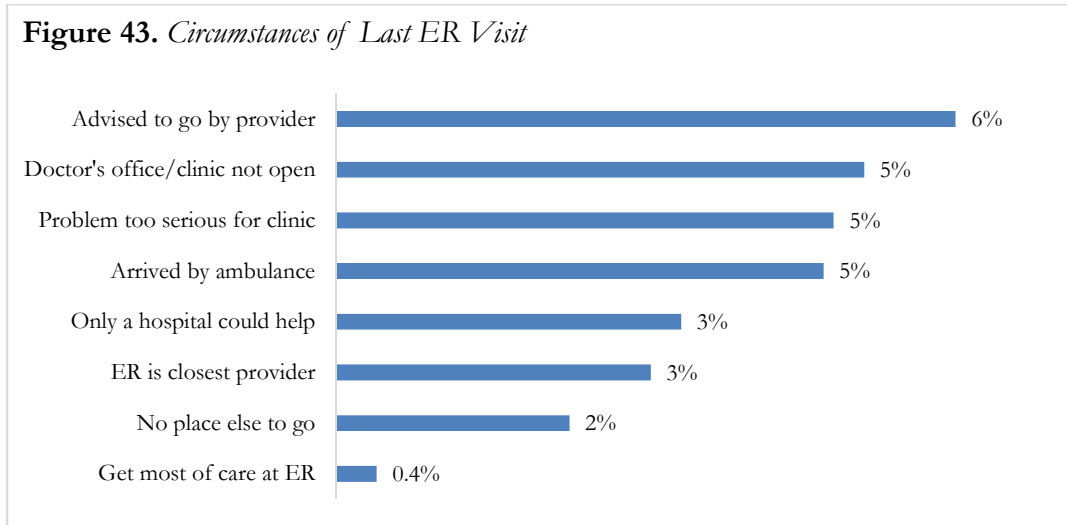
dentist or dental care provider increased with increased educational attainment and total annual household income (Figure 40).

Figure 41. *Composite, Sex, and Age of Individuals Reporting Time Since Last Dental Visit*

Figure 42. *Education and Income of Individuals Reporting Time Since Last Dental Visit*

More than one-half (67%) of respondents had a dental visit within the past year (Figure 41), and dental visits within the past year increased with advancing age (Figure 41), greater educational attainment (Figure 42), and increased total annual household income (Figure 42). Individuals with a total household income of $60,000 to $99,999 and $100,000 or greater reported the greatest
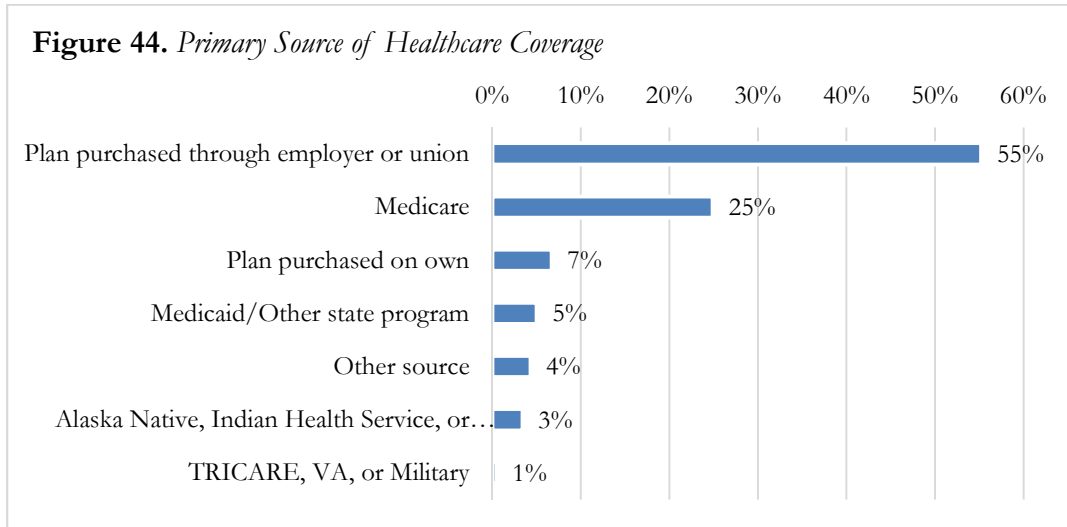
frequency of dental visits within the past year (87%), while individuals with less than a high school education reported the least (21%), respectively (Figure 42).

Emergency Department Utilization

Figure 43. *Circumstances of Last ER Visit*

Category	Percentage
Advised to go by provider	6%
Doctor's office/clinic not open	5%
Problem too serious for clinic	5%
Arrived by ambulance	5%
Only a hospital could help	3%
ER is closest provider	3%
No place else to go	2%
Get most of care at ER	0.4%

Of those respondents indicating that they went to the emergency room in the past 12 months for their own health, 6% indicated that they were advised to go by their healthcare provider, while 5% indicated that their doctor's office was not open, the problem was too serious for a clinic, or they arrived to the ER by ambulance, respectively (Figure 43). ER visits were also characterized as "Only a hospital could help" (3%), "ER is closest provider" (3%), "No place else to go" (2%), and "Get most of care at ER" (0.4%).

Health Insurance Coverage

Figure 44. *Primary Source of Healthcare Coverage*

| | 0% | 10% | 20% | 30% | 40% | 50% | 60% |

Plan purchased through employer or union — 55%
Medicare — 25%
Plan purchased on own — 7%
Medicaid/Other state program — 5%
Other source — 4%
Alaska Native, Indian Health Service, or… — 3%
TRICARE, VA, or Military — 1%

Collectively, 94% of respondents currently had some form of health insurance coverage (Figure 44). Health insurance coverage was predominately acquired through an employer or union (55%) and Medicare (25%), while others indicated that they had purchased a health insurance plan on their own (7%), acquired health insurance through Medicaid or another state program (5%), another source (4%), Alaskan Native, Indian Health Services or Tribal Health Services (3%), or TRICARE, VA, or Military (1%).
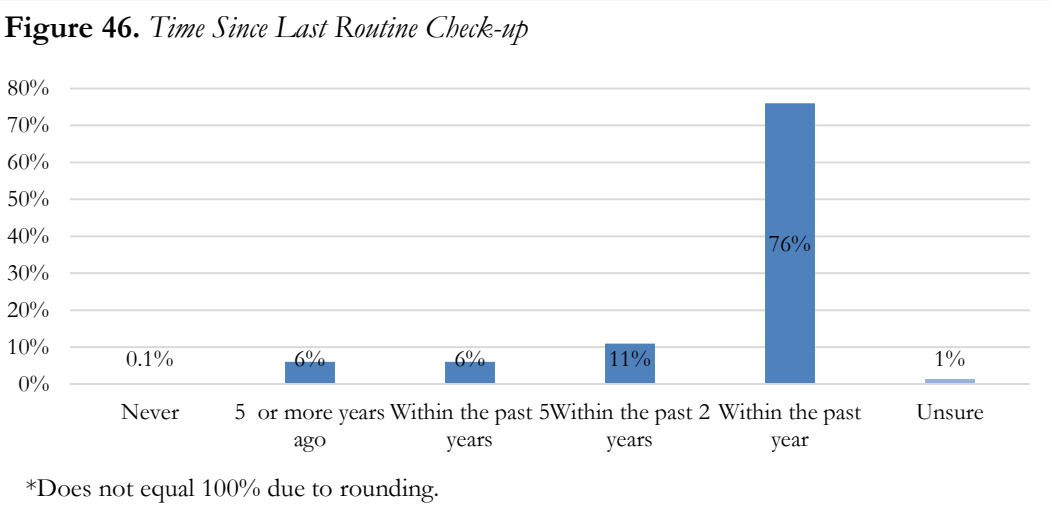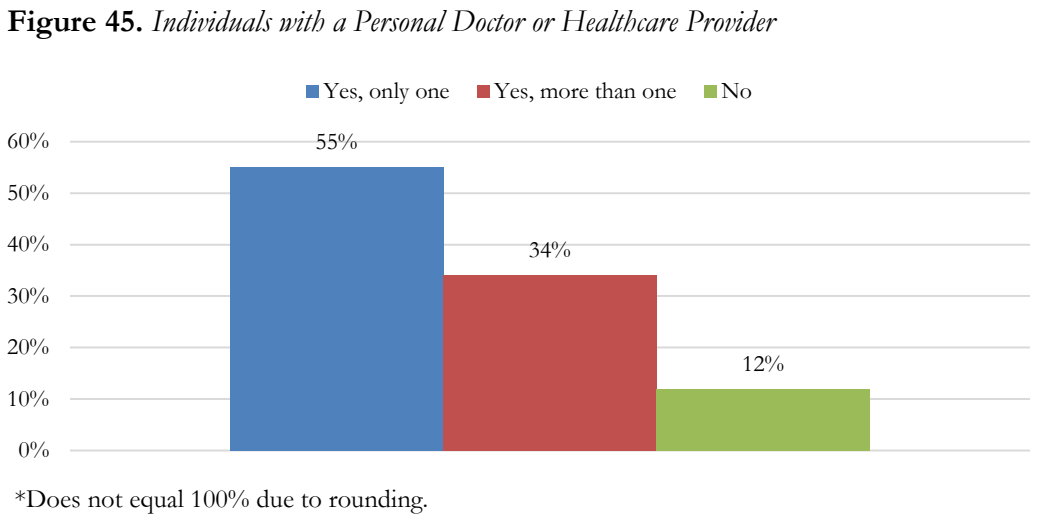
Table 22. *Pregnancy Complications*

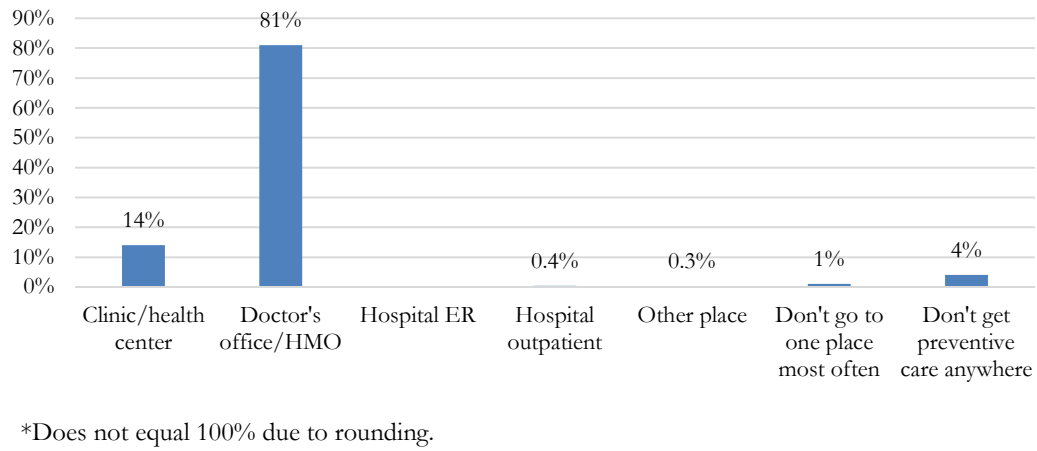|	(%)
"Decline in mental health"	3
"Preeclampsia/eclampsia"	2
"Hemorrhage"	2
"Cardiovascular complication"	1
"Infection"	1
"Embolism"	0.1
"Other"	5

More than three-quarters (80%) of female respondents reported having ever been pregnant. Complications occurring during or as a result of pregnancy included a "Decline in mental health" (3%), "Preeclampsia/eclampsia" (2%), "Hemorrhage" (2%), "Cardiovascular complication" (1%), "Infection" (1%), "Embolism" (0.1%), or "Other" (5%; Table 22).

Primary and Preventative Care

Figure 45. *Individuals with a Personal Doctor or Healthcare Provider*

■ Yes, only one   ■ Yes, more than one   ■ No

*Does not equal 100% due to rounding.

Figure 46. *Time Since Last Routine Check-up*

*Does not equal 100% due to rounding.

More than three-quarters of respondents (89%) indicated that they have one or more personal doctors or healthcare providers (Figure 45). Seventy-six percent of respondents received a routine check-up in the past year, while 11% received a routine check-up within the past two years, 6% within the past five years, and 6% five or more years ago (Figure 46). Less than 1% of respondents indicated that they have never received a routine check-up, and the remaining respondents (1%) were unsure of their last routine check-up (Figure 46).

Figure 47. *Routine and Preventative Care Facility Type*

90%	
80%	81%
70%	
60%	
50%	
40%	
30%	
20%	14%
10%	0.4% 0.3% 1% 4%
0%	

Clinic/health center — Doctor's office/HMO — Hospital ER — Hospital outpatient — Other place — Don't go to one place most often — Don't get preventive care anywhere

*Does not equal 100% due to rounding.

The majority of respondents (95%) received their routine or preventative care from a doctor's office or HMO (81%) or a clinic or health center (14%), respectively (Figure 47). Respondents also received routine or preventative care at a hospital outpatient facility (0.4%) or some other facility (0.3%), didn't go to a particular facility most often (1%), or indicated that they did not receive routine or preventative care from any facility (4%).

Figure 48. *Composite, Sex, and Age of Individuals Not Currently Receiving Preventative Care*
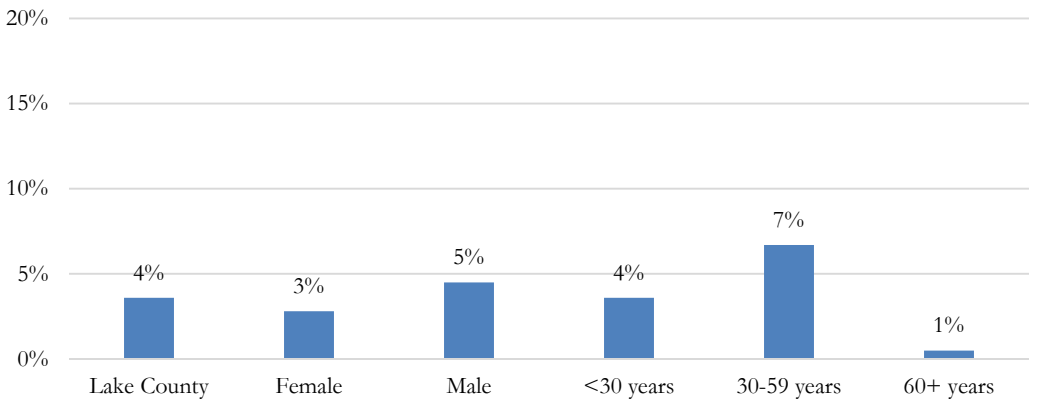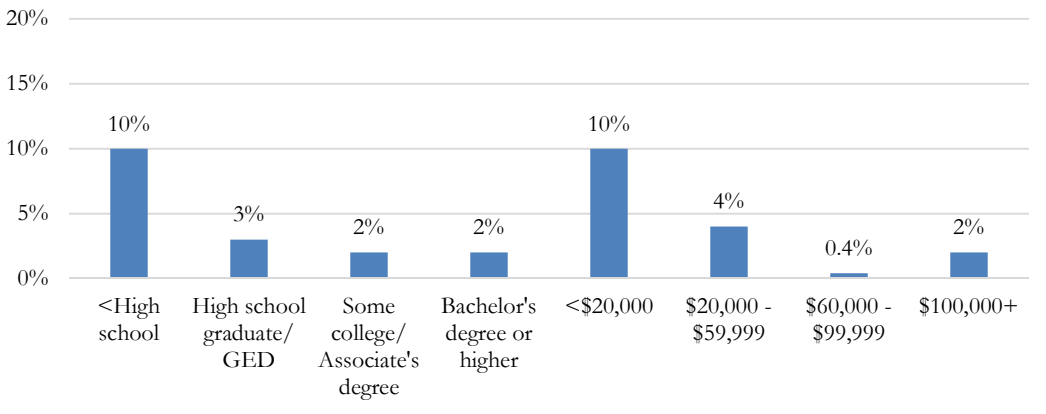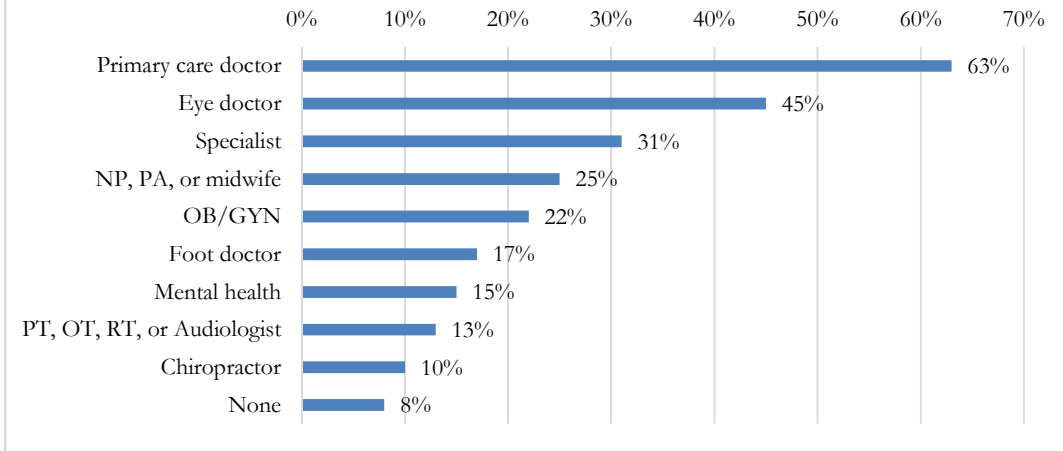

Figure 49. *Education and Income of Individuals Not Currently Receiving Preventative Care*

Four percent of respondents indicated that they were not currently receiving preventative care (Figure 48). Failure to receive preventative care was highest among those with less than high school education (10%) and with a total annual household income less than $20,000 (10%), and lowest among individuals with a total annual household income of $60,000 to $99,999 (0.4%; Figure 49). Not currently receiving care decreased with greater educational attainment (Figure 49), between total annual household incomes of less than $20,000, and $60,000 to $99,999 (Figure 49), and with advancing age between individuals 30 to 59 years of age, and those 60 years of age and older (Figure 48).

Figure 50. *Healthcare Providers Accessed in the Past 12 Months*

Provider	Percentage
Primary care doctor	63%
Eye doctor	45%
Specialist	31%
NP, PA, or midwife	25%
OB/GYN	22%
Foot doctor	17%
Mental health	15%
PT, OT, RT, or Audiologist	13%
Chiropractor	10%
None	8%

More than one-half of respondents (63%) accessed a primary care doctor in the past 12 months, while specialists (31%), Nurse Practitioners (NP), Physicians Assistants (PA), or midwives (25%), and Obstetricians/Gynecologists (OB/GYNs) (22%) were accessed by approximately one-third of respondents (Figure 50). Other healthcare providers accessed in the past 12 months included foot doctors (17%), mental health providers (15%), Physical, Occupational, or Respiratory Therapists (PT, OT, RT), or Audiologists (13%), and chiropractors (10%). Eight percent of respondents indicated that they had not accessed a healthcare provider in the past 12 months.

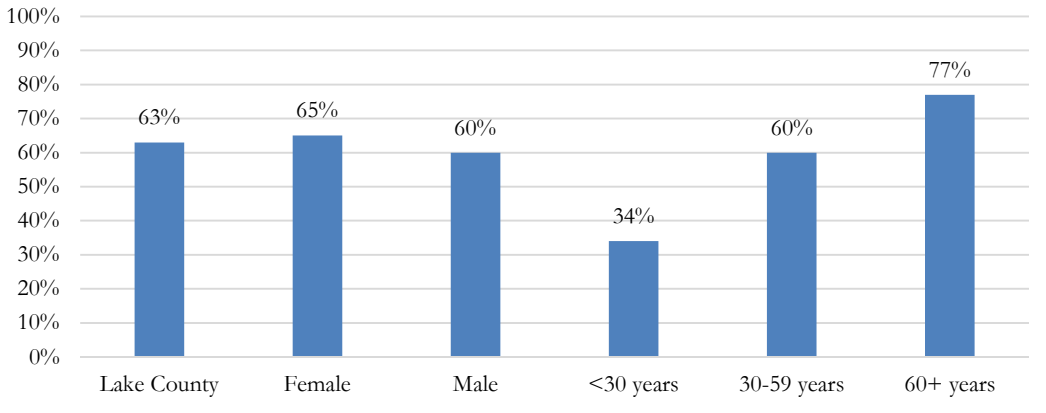**Figure 51.** *Composite, Sex, and Age of Individuals Who Saw a Primary Care Doctor in Past 12 Months*
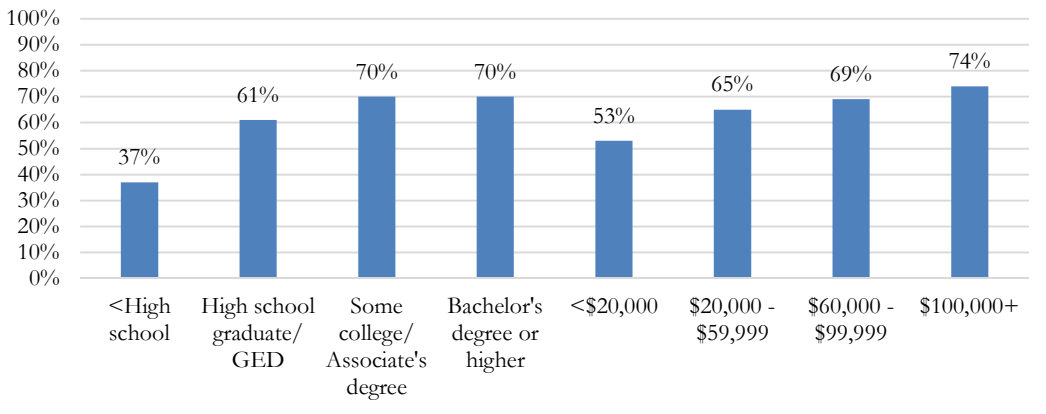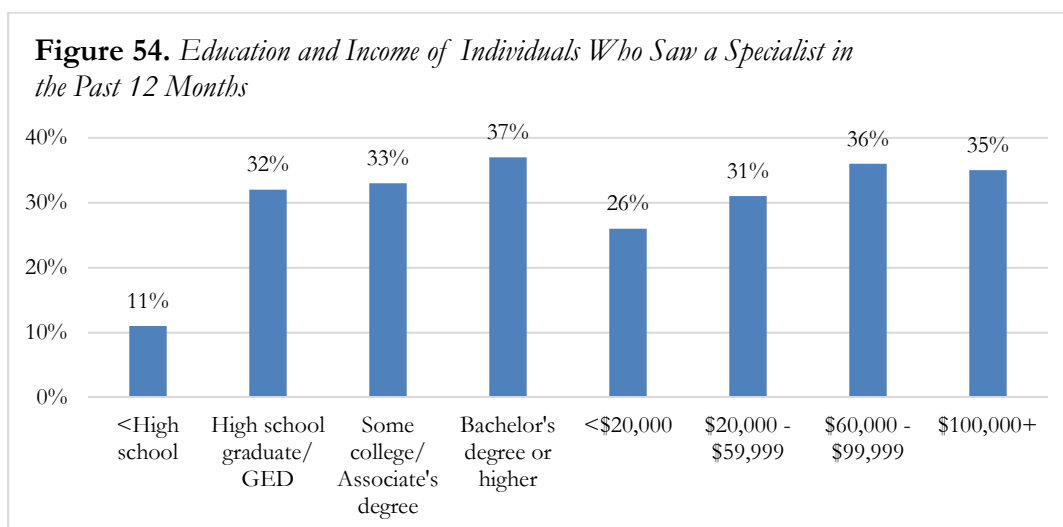

Figure 52. *Education and Income of Individuals Who Saw a Primary Care Doctor in the Past 12 Months*

More than one-half of respondents (63%) indicated they had seen a primary care doctor in the past 12 months (Figure 51). Seeing a primary care doctor in the past 12 months was highest among individuals 60 years of age and older (77%), lowest among those less than 30 years of age (34%), and increased with advancing age (Figure 51), increased educational attainment (Figure 52), and greater total annual household income (Figure 52).

Figure 53. *Composite, Sex, and Age of Individuals Who Saw a Specialist in the Past 12 Months*

A bar chart showing percentages: Lake County 31%, Female 32%, Male 29%, <30 years 20%, 30-59 years 25%, 60+ years 39%.

Figure 54. *Education and Income of Individuals Who Saw a Specialist in the Past 12 Months*

A bar chart showing percentages: <High school 11%, High school graduate/GED 32%, Some college/Associate's degree 33%, Bachelor's degree or higher 37%, <$20,000 26%, $20,000 - $59,999 31%, $60,000 - $99,999 36%, $100,000+ 35%.

Approximately one-third (31%) of respondents saw a specialist in the past 12 months (Figure 53). Seeing a specialist in the past 12 months was higher among females (32%) than males (29%) and increased with advancing age (Figure 53), increased educational attainment (Figure 54), and greater total annual household income (Figure 54).

Figure 55. *Composite and Age of Women Who Saw an OB/GYN in the Past 12 Months*
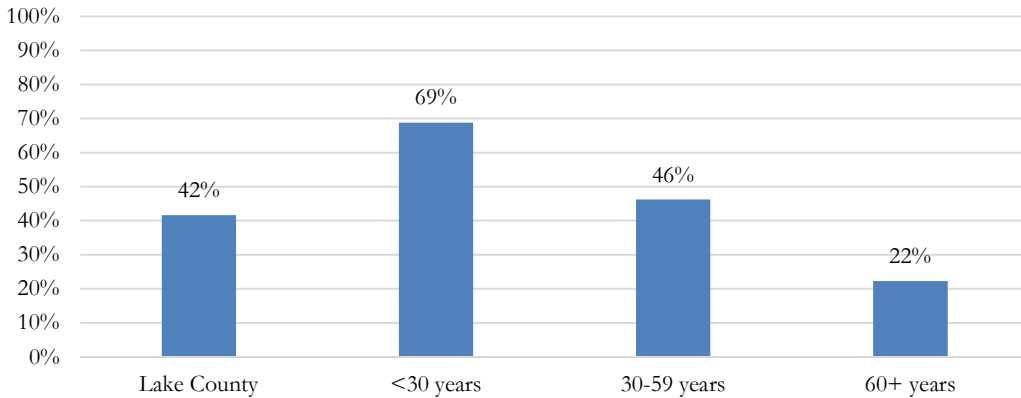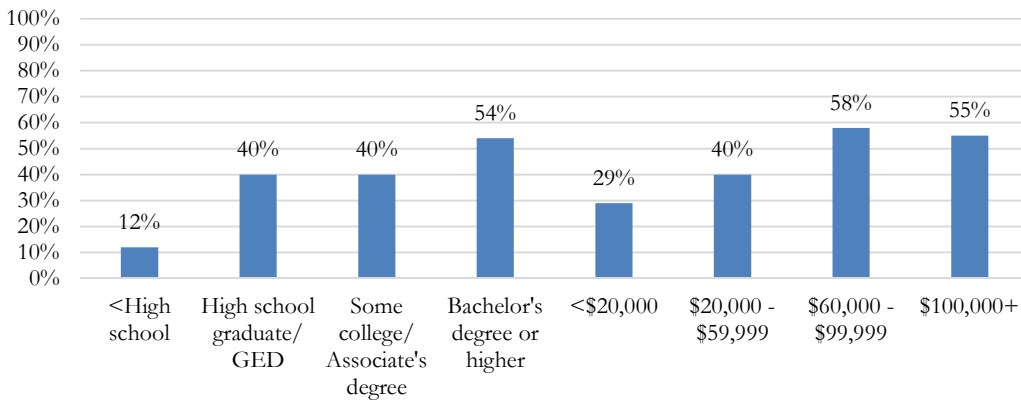

Figure 56. *Education and Income of Women Who Saw an OB/GYN in the Past 12 Months*

Less than half of female respondents (42%) saw an OB/GYN in the past 12 months, and individuals who saw an OB/GYN in the past 12 months were predominately less than 30 years of age (69%; Figure 55). Seeing an OB/GYN decreased with advancing age (Figure 55), and increased with greater educational attainment and increased total annual household income, respectively (Figure 56).

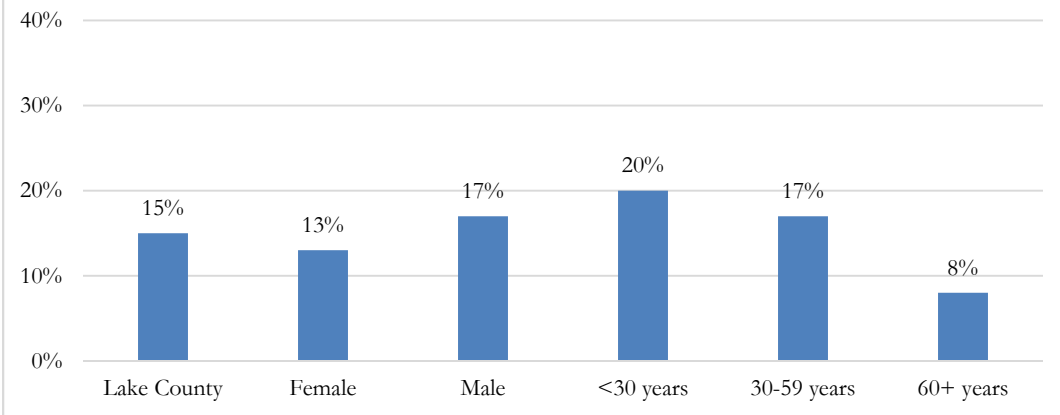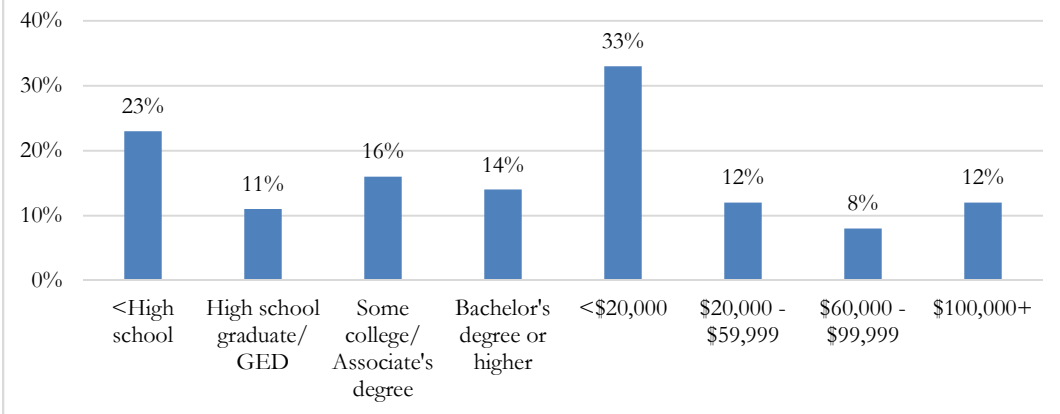**Figure 57.** *Composite, Sex, and Age of Individuals Who Saw a Mental Health Provider in the Past 12 Months*

Lake County	Female	Male	<30 years	30-59 years	60+ years
15%	13%	17%	20%	17%	8%

Figure 58. *Education and Income of Individuals Who Saw a Mental Health Provider in the Past 12 Months*

<High school	High school graduate/GED	Some college/Associate's degree	Bachelor's degree or higher	<$20,000	$20,000 - $59,999	$60,000 - $99,999	$100,000+
23%	11%	16%	14%	33%	12%	8%	12%

Fifteen percent of respondents saw a mental health provider in the past 12 months (Figure 57). Individuals seeing a mental health provider in the past 12 months was greatest among those with a total annual household income less than $20,000 (Figure 58), higher among males than females (Figure 57), and decreased with advancing age (Figure 57). Seeing a mental health provider in the past 12 months was lowest among individuals with a total annual household income of $60,000 to $99,999 (Figure 58), and those 60 years of age and older (Figure 57), and declined (albeit not linearly) with greater educational attainment and higher total annual household income (Figure 58).

Figure 59. *Composite, Sex, and Age of Individuals Who Didn't See a Healthcare Provider in the Past 12 Months*

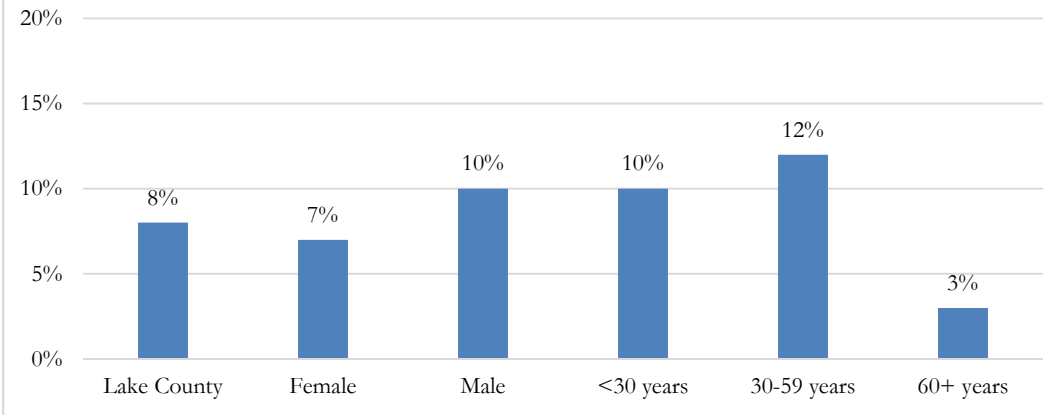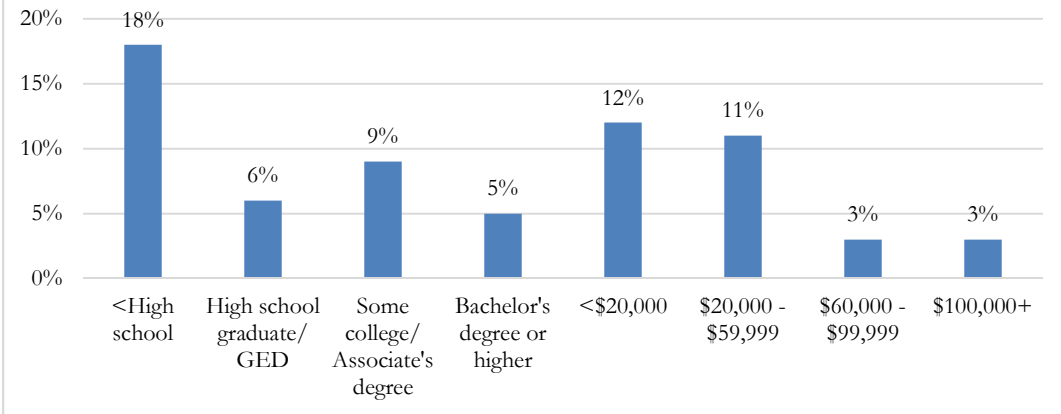| Category	Percentage
Lake County	8%
Female	7%
Male	10%
<30 years	10%
30-59 years	12%
60+ years	3%

Figure 60. *Education and Income of Individuals Who Didn't See a Healthcare Provider in the Past 12 Months*

Category	Percentage
<High school	18%
High school graduate/GED	6%
Some college/Associate's degree	9%
Bachelor's degree or higher	5%
<$20,000	12%
$20,000 - $59,999	11%
$60,000 - $99,999	3%
$100,000+	3%

Less than one-tenth (8%) of respondents did not see a healthcare provider in the past 12 months (Figure 59). Not seeing a healthcare provider in the past 12 months was highest among individuals with less than a high school education (Figure 60), higher among males than females (Figure 59), decreased with advancing age between individuals 30 to 59 years of age, and those 60 years of age and older (Figure 59), and decreased with greater total annual household income (Figure 60).

Figure 61. *Health Services that Individuals Were Unable to Afford*
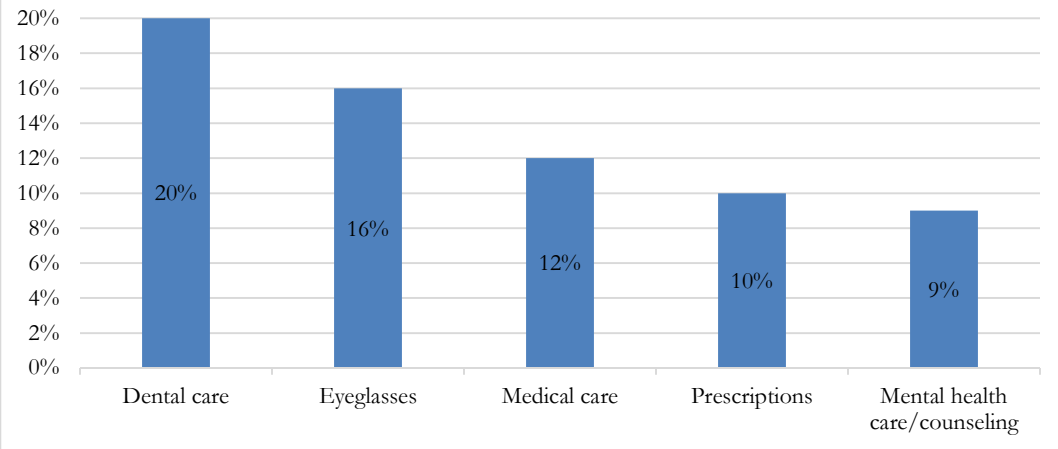
Sixty-six percent of respondents indicated that they were able to afford dental care, eyeglasses, medical care, prescriptions, and/or mental health care and counseling in the past 12 months. With respect to those health services respondents were unable to afford (Figure 61), 20% indicated they could not afford dental care, and less than one-fifth of respondents were unable to afford eyeglasses (16%), medical care (12%), prescriptions (10%), and mental health care and counseling (9%).

Figure 62. *Time Period Since Last Colonoscopy*
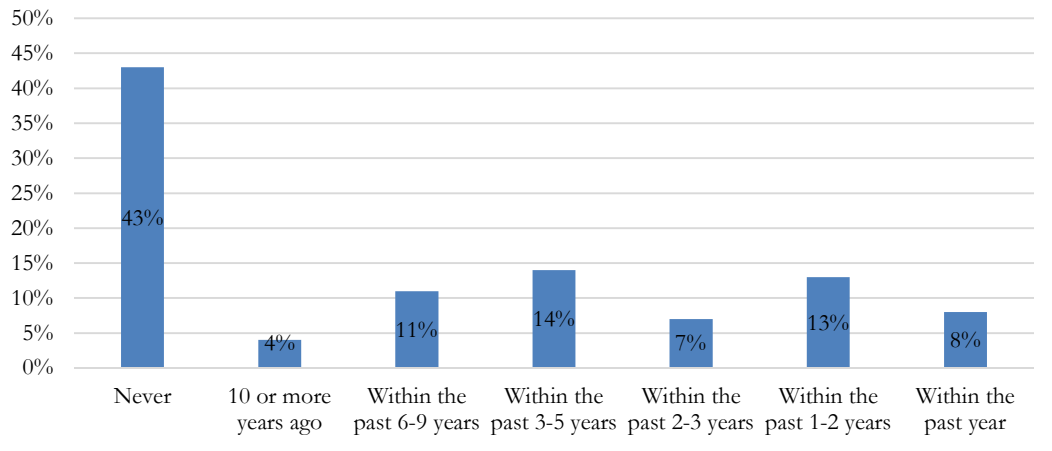
Less than one-half of respondents (43%) indicated they had never received a colonoscopy (Figure 62). The majority of respondents who had received a colonoscopy did so within the past three to five years (14%), while 13% received a colonoscopy within the past one to two years, and 11% received a colonoscopy within the past six to nine years. Less than 10% of respondents received a colonoscopy within the past year (8%), within the past two to three years (7%), or ten or more years ago (4%).

Figure 63. *Time Period Since Last Mammogram for Females*

*Does not equal 100% due to rounding.
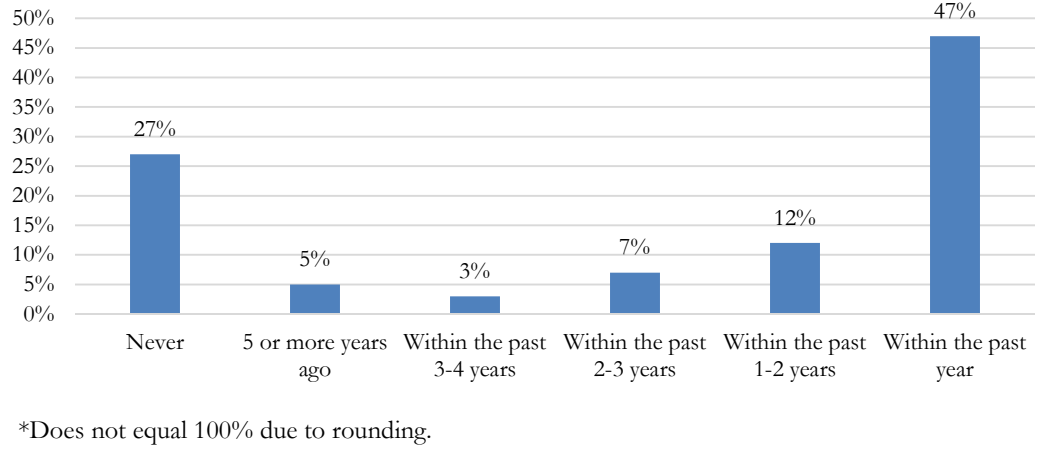
Approximately one-half of female respondents (47%) indicated that they had received their last mammogram within the past year (Figure 63). Less than one-third of respondents (27%) had never received a mammogram, while 12% received a mammogram within the past one to two years, 7% within the past two to three years, 5% five or more years ago, and 3% within the past three to four years. More than half (55%) of female respondents 45 to 54 years of age, and 66% of female respondents over the age of 45 had received a mammogram in the past year.

Figure 64. *Time Period Since Last Pap Test for Females*
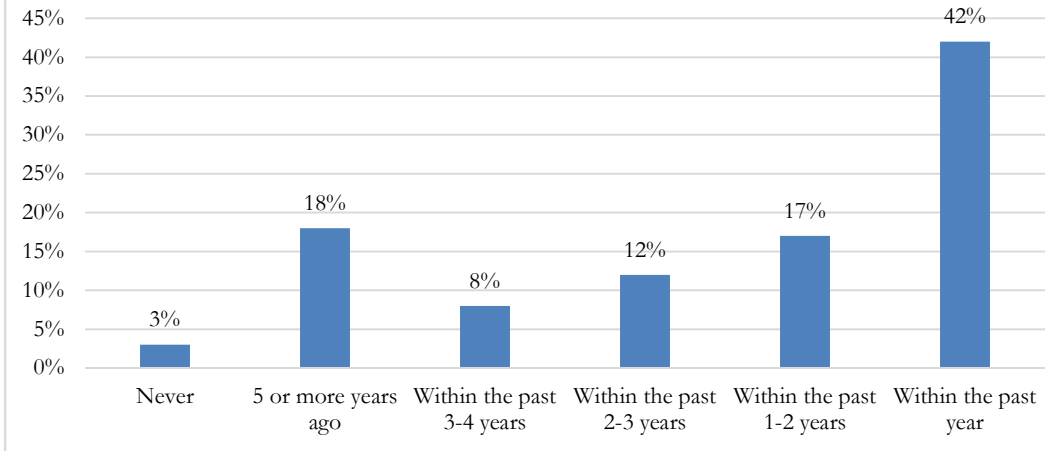
Forty-two percent of female respondents received their last pap test within the past year, while 18% received a pap test five or more years ago, 17% within the past one to two years, 12% within the past two to three years, and 8% within the past three to four years (Figure 64). Three percent of female respondents indicated that they have never received a pap test.

Vaccination History and Beliefs

Figure 65. *Composite, Sex, and Age of Individuals Who Received a Flu Vaccine in the Past 12 Months*

A bar chart showing the percentage of individuals who received a flu vaccine in the past 12 months by composite, sex, and age:
- Lake County: 54%
- Female: 52%
- Male: 56%
- <30 years: 33%
- 30-59 years: 49%
- 60+ years: 70%

Figure 66. *Education and Income of Individuals Who Received a Flu Vaccine in the Past 12 Months*

A bar chart showing the percentage of individuals who received a flu vaccine in the past 12 months by education and income:
- <High school: 67%
- High school graduate/GED: 50%
- Some college/Associate's degree: 52%
- Bachelor's degree or higher: 55%
- <$20,000: 49%
- $20,000 - $59,999: 53%
- $60,000 - $99,999: 53%
- $100,000+: 56%

More than one-half of respondents (54%) received a flu vaccine in the past 12 months (Figure 65). Receiving a flu vaccine in the past 12 months was highest among individuals with less than a high school education (67%), and lowest among those less than 30 years of age (33%; Figure 66). Receiving a flu vaccine in the past 12 months increased with both advancing age (Figure 65) and increased total annual household income (Figure 66).

Figure 67. *Individuals Who Received a Tetanus Vaccine in the Past 10 Years*
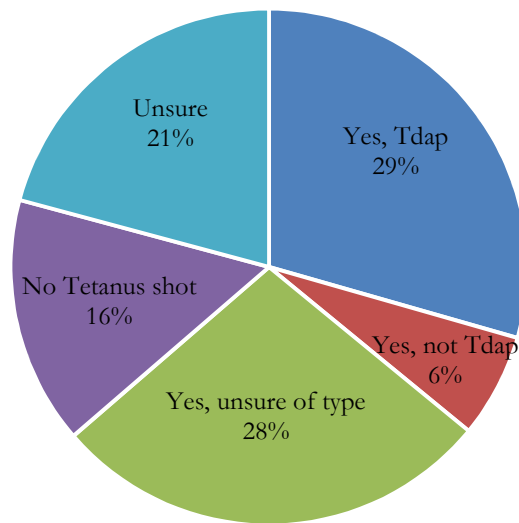
More than two-thirds of respondents (63%) reported received a tetanus vaccine in the past ten years (Figure 67). Twenty-nine percent of respondents indicated that they received the Tdap, and the remaining individuals were either unsure of the type of tetanus vaccine they had received (28%), or received a tetanus vaccine other than the Tdap (6%). Approximately one-fifth of respondents (21%) were unsure if they had received a tetanus vaccine in the past ten years, and 16% indicated that they had not received a tetanus vaccine.

Figure 68. *Individuals Who Received a Pertussis Vaccine in the Past 10 years*
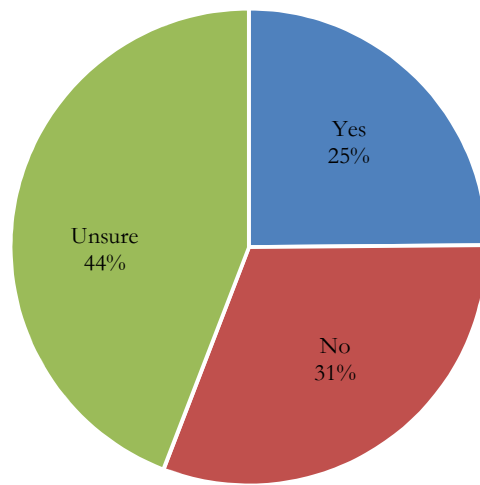
One-quarter of respondents indicated that they had received a pertussis vaccine in the past ten years, while 44% were unsure, and 31% indicated they had not received a pertussis vaccine in the past ten years (Figure 68).

Figure 69. *Total Vaccines Received*
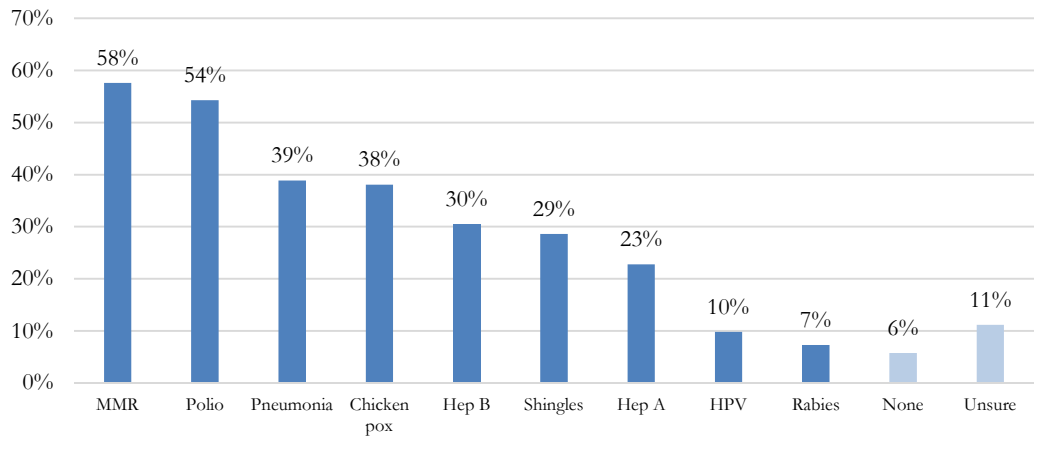
Among total lifetime vaccines received, more than half of respondents indicated that they had received the MMR (58%) and/or polio (54%) vaccines, respectively (Figure 69). Approximately one-third of respondents received a pneumonia (39%), chicken pox (38%), and/or hepatitis B (30%) vaccine, while less than one-third received a shingles (29%), hepatitis A (23%), HPV (10%), and/or rabies (7%) vaccine, respectively. Eleven percent of respondents were unsure which vaccines they had, and 6% had not received a vaccine in their lifetime.

Figure 70. *Composite, Sex, and Age of Individuals Who Have Not Received a Vaccine in Their Lifetime*
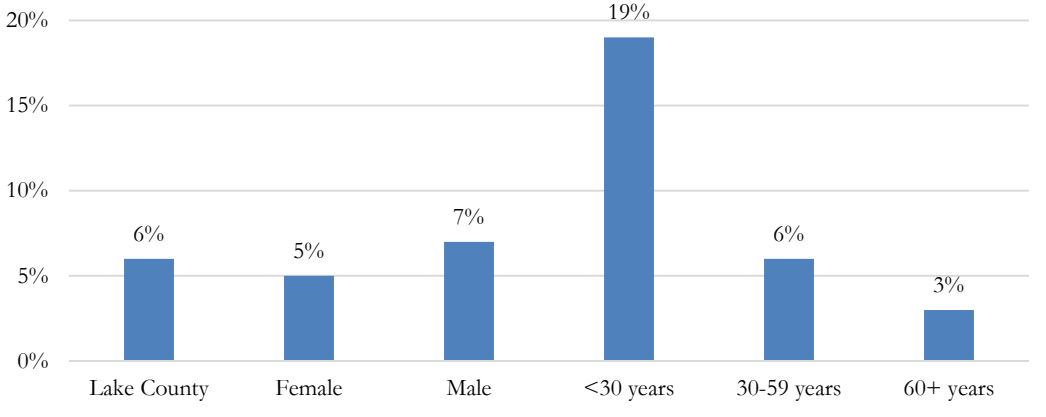
Figure 71. *Education and Income of Individuals Who Have Not Received a Vaccine in Their Lifetime*
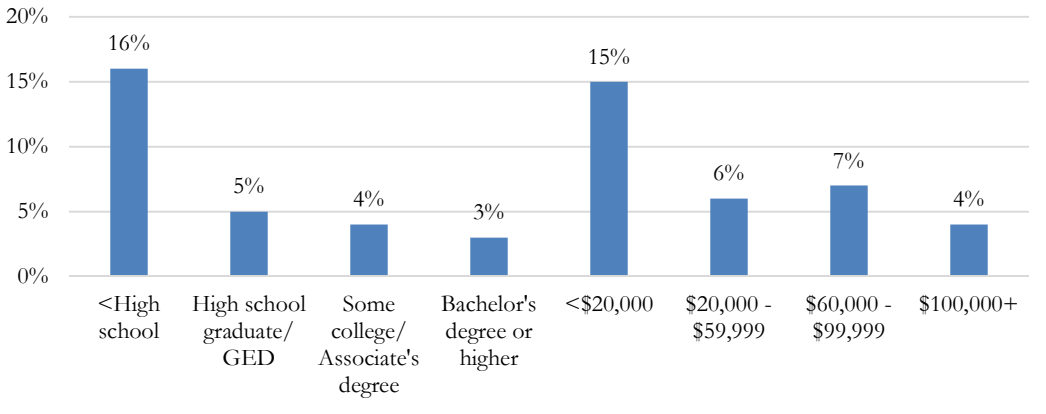
Six percent of respondents had not received a vaccine in their lifetime (Figure 70). Not receiving a vaccine was highest (19%) among individuals less than 30 years of age (Figure 70), and lowest (3%) among individuals 60 years of age and older, as well as those with a Bachelor's degree or higher (Figure 71). Not receiving a vaccine declined with advancing age (Figure 70), and was considerably higher among individuals with less than a high school education, and those with a total annual household income less than $20,000 (Figure 71), as compared to both those with greater educational attainment and increased total annual household income (Figure 71).

Figure 72. *Vaccination Beliefs*

Belief	Percentage
It is important for me to get vaccinated to…	66%
I could get a serious disease if not vaccinated	58%
The benefits of vaccination outweigh the risks	52%
Vaccines are to prevent diseases I'm unlikely to get	8%
Vaccines are not tested enough for safety	8%
Vaccines may cause chronic disease	7%
Vaccines may cause learning disabilities in children	6%
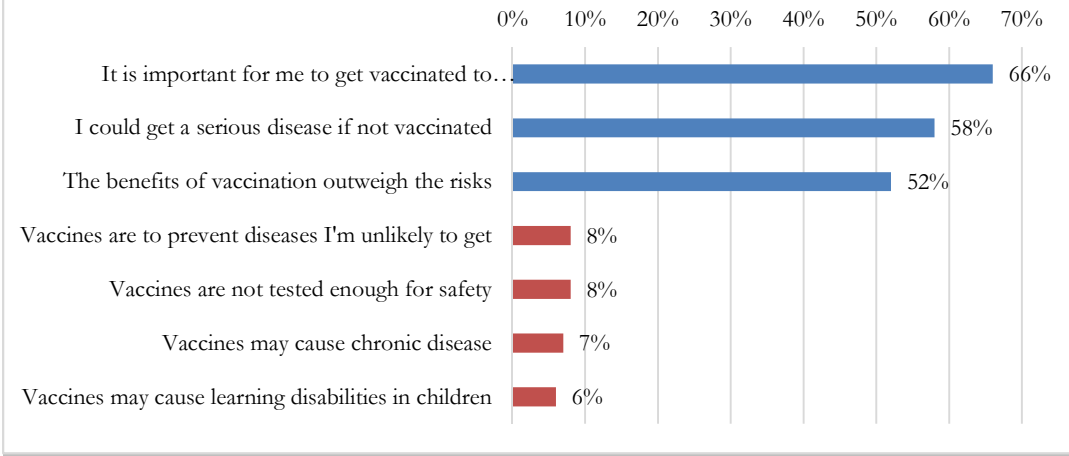
With respect to vaccination beliefs (Figure 72), more than half of respondents indicated that "It is important for me to get vaccinated in order to prevent the spread of disease in my community" (66%), "I could get a serious disease if I am not vaccinated" (58%), and "The benefits of vaccination outweigh the risks" (52%). Less than ten percent of respondents indicated that "Vaccines are to prevent diseases I'm unlikely to get" (8%), "Vaccines are not tested enough for safety" (8%), "Vaccines may cause chronic disease" (7%), and "Vaccines may cause learning disabilities in children" (6%).

Alcohol Use

Figure 73. *Number of Days per Week of Alcohol Consumption*

Figure 74. *Number of Alcoholic Drinks on Drinking Days*
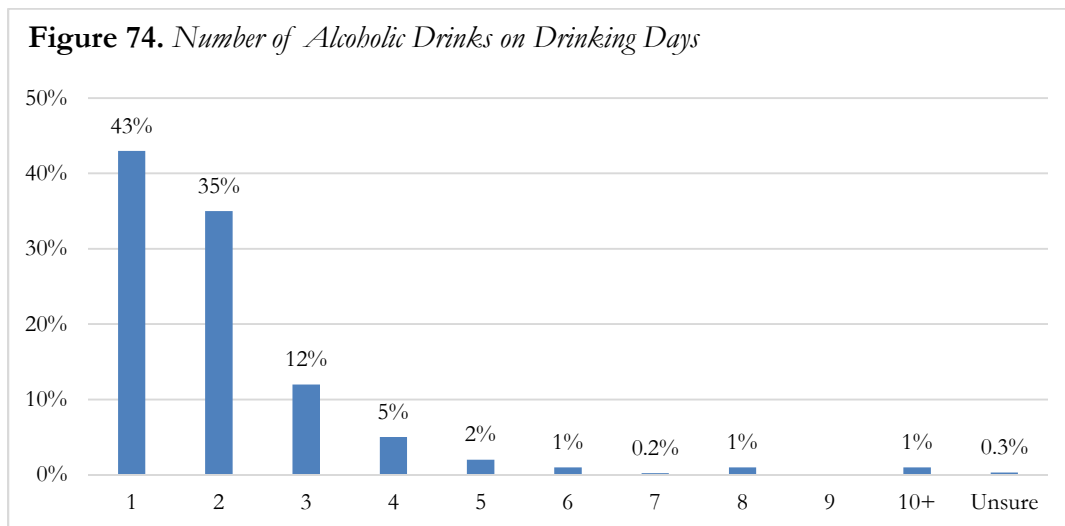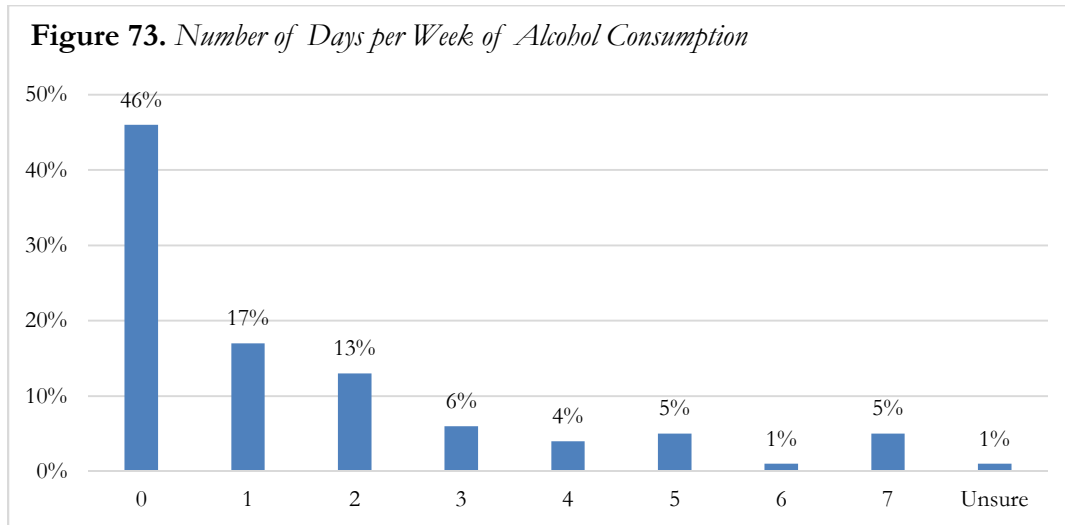
Approximately half of respondents (46%) indicated that they had no alcoholic drinks per week, during the past 30 days (Figure 73). Among those respondents who did have at least one alcoholic drink per week in the past 30 days, drinking occurred predominately on one (17%) or two (13%) days per week (Figure 73). Six percent had at least one alcoholic drink three days per week, while 4% had at least one alcoholic drink four days per week, 5% five days per week, 1% six days

per week, and 5% seven days per week; 1% of respondents were unsure how many days per week

they had at least one alcoholic drink during the past 30 days (Figure 73). On drinking days, 78% had

either one (43%) or two (35%) drinks, while 12% of respondents had three drinks, 5% had four

drinks, and 2% had five drinks (Figure 74). One percent or less had six (1%), seven (0.2%), eight

(1%), or ten or more drinks (1%), respectively, and 0.3% were unsure how many drinks they had on

drinking days (Figure 74).

Figure 75. *Number of Binge Drinking Occurrences in the Past 30 Days*

*Does not equal 100% due to rounding.
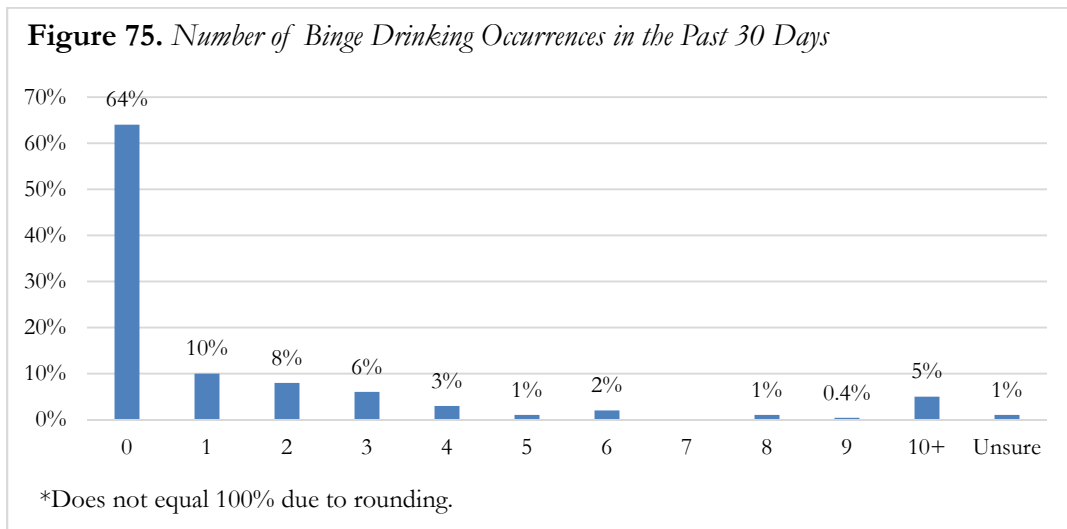
More than two-thirds of respondents (64%) indicated that they had not consumed five or

more drinks for males, or four or more drinks for females, on a single occasion in the past 30 days

(Figure 75). Of those respondents identifying a binge drinking occurrence in the past 30 days, 10%

indicated binge drinking on one occasion, while 8% indicated binge drinking on two occasions, 6%

on three occasions, 3% on four occasions, 2% on six occasions, and 5% on ten or more occasions.

One percent or less of respondents indicated binge drinking on five occasions (1%), eight occasions

(1%), and nine occasions (0.4%); 1% of respondents were unsure how many times they had binge

drank in the past 30 days.

Figure 76. *Composite, Sex, and Age of Binge Drinking Occurences in the Past 30 Days*
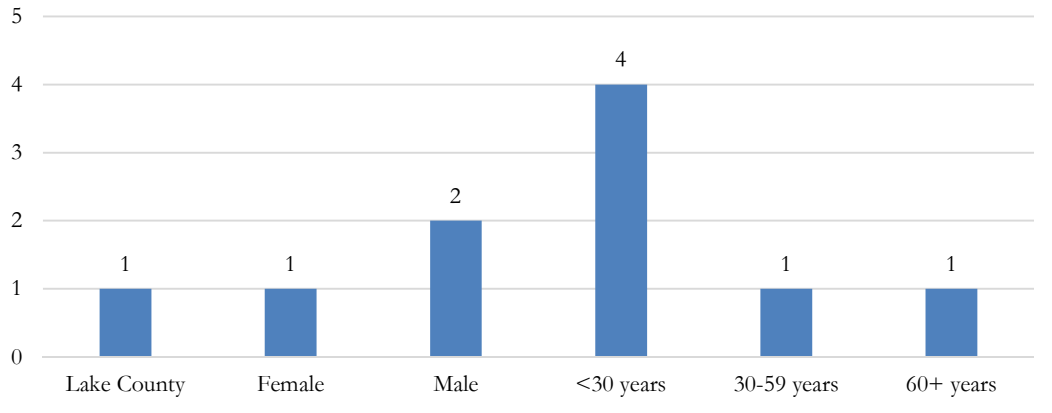
Figure 77. *Education and Income of Binge Drinking Occurences in the Past 30 Days*
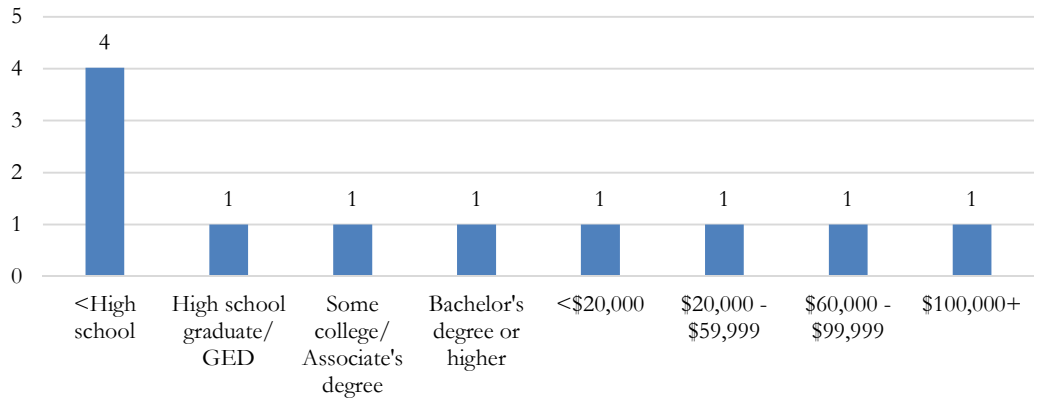
Overall, respondents identified one binge drinking occurrence during the past 30 days (Figure 76). On average, male respondents averaged one binge drinking day more than females (Figure 76), and both individuals less than 30 years of age (Figure 76) and with less than a high school education (Figure 77) reported four binge drinking days. No variability in binge drinking occurrences was observed across total annual household income categories (Figure 77).

Figure 78. *Number of Times Individuals Have Driven While Intoxicated in the Past 30 Days*

*Does not equal 100% due to rounding.
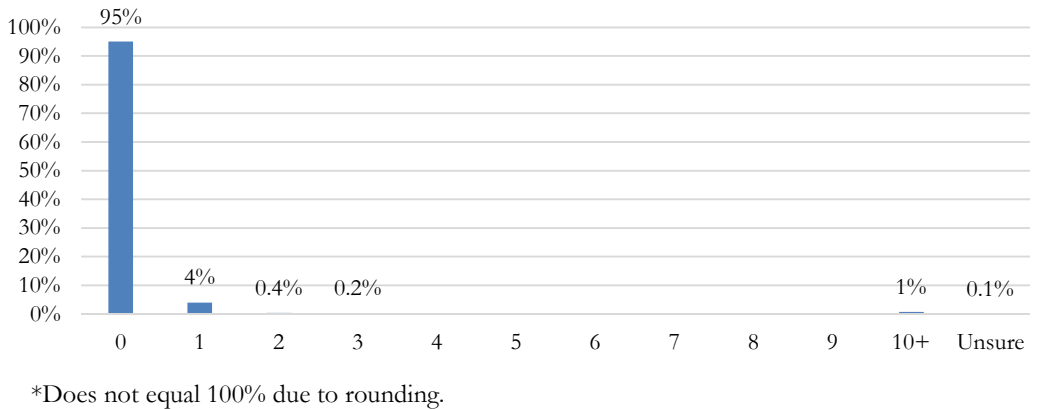
Nearly all of the respondents (95%) indicated they had not driven while intoxicated in the past 30 days (Figure 78). Four percent of respondents drove while intoxicated on one occasion, and 1% drove while intoxicated on ten or more occasions. Less than one percent drove while intoxicated on two (0.4%) and three (0.2%) occasions, respectively, and 0.1% were unsure how many times they had driven while intoxicated in the past 30 days.

Illicit Drug Use

Approximately ninety-nine percent (99.4%) of respondents indicated that they had not used illicit drugs in the past 30 days. Less than 1% of respondents indicated illicit drug use, and frequency of use was characterized as one day in the past 30 days (0.1%) and "Don't know/not sure" (0.5%). Information regarding the type of illicit drug consisted of "marijuana" (7%) and "poppers" (93%).

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Marijuana Use

Figure 79. *Number of Days of Marijuana Use Among Users in the Past 30 Days*

Days	Percent
1	13%
2	9%
3	5%
4	
5	6%
6	7%
7	1%
8	
9	2%
10	7%
11	
12	
13	
14	
15	
16	
17	
18	1%
19	
20	3%
21	
22	
23	
24	
25	6%
26	
27	
28	10%
29	
30	12%
Unsure	18%
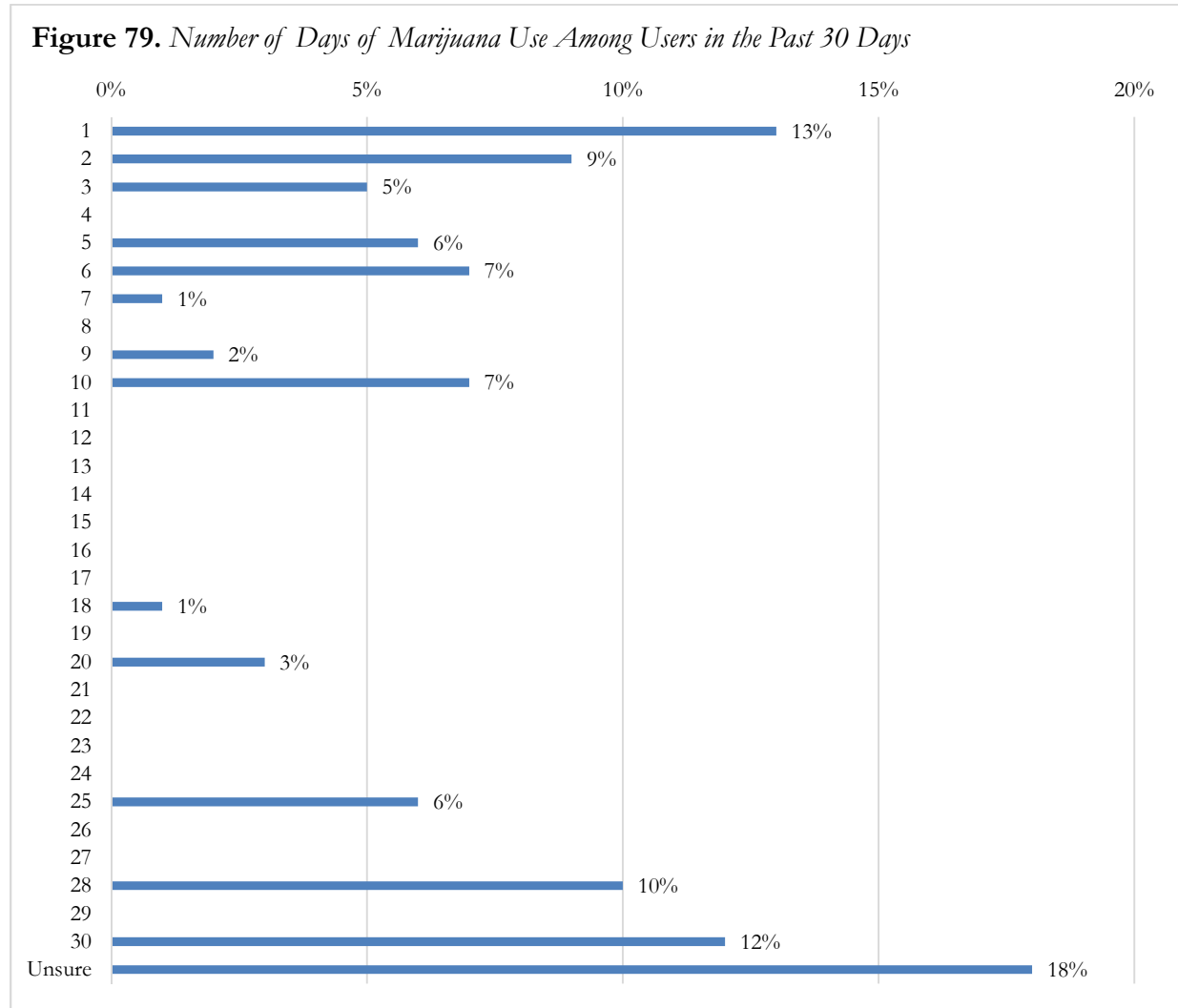
Ninety-four percent of respondents indicated that they had not used marijuana in the past 30 days. Among those respondents reporting marijuana use, 18% were unsure on how many days they had used marijuana in the past 30 days (Figure 79). Thirteen percent of respondents reported using marijuana on one day in the past 30 days, while 12% of respondents reported using marijuana every day for the past 30 days, and 10% on 28 of the past 30 days. Less than ten percent of respondents used marijuana for any remaining reported frequency.

Figure 80. *Composite, Sex, and Age of Individuals Who Used Marijuana in the Past 30 Days*
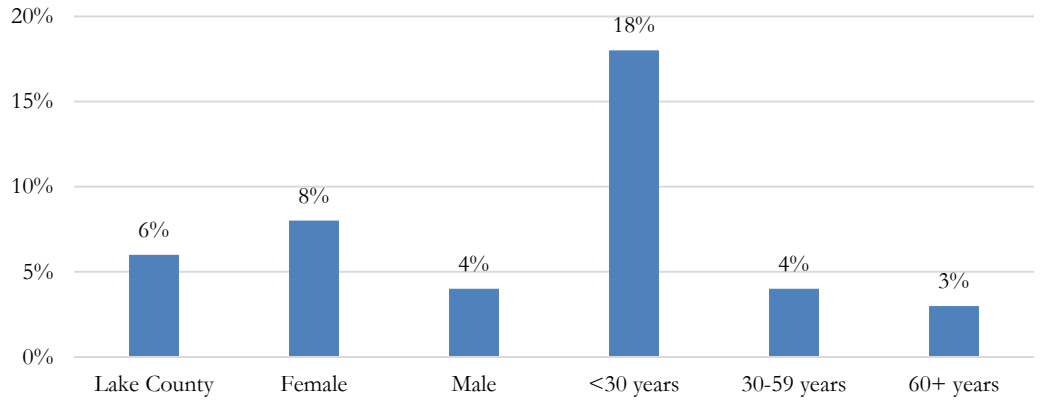
Figure 81. *Education and Income of Individuals Who Used Marijuana in the Past 30 Days*
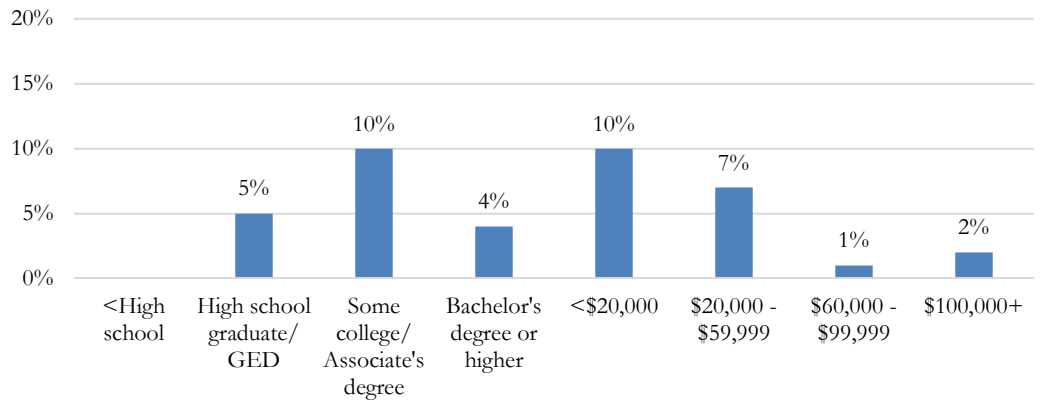
Less than ten percent of respondents (6%) reported using marijuana in the past 30 days (Figure 80). Marijuana use in the past 30 days was higher among females (8%) than males (4%), and highest among individuals less than 30 years of age (Figure 80). Individuals with a total annual household income of $60,000 to $99,999 reported the lowest marijuana use in the past 30 days (1%), and marijuana use declined with increasing total annual household income (Figure 81).

Figure 82. *Composite, Sex, and Age of Individulals Indicating Medicinal or Recreational Marijuana Use*

Legend: ■ Medicinal - prescribed ■ Medicinal - not prescribed ■ Recreational

	Lake County	Female	Male	<30 years	30-59 years	60+ years
Medicinal - prescribed	11%	9%	17%	4%	5%	31%
Medicinal - not prescribed	58%	57%	59%	69%	55%	57%
Recreational	56%	59%	44%	54%	68%	21%
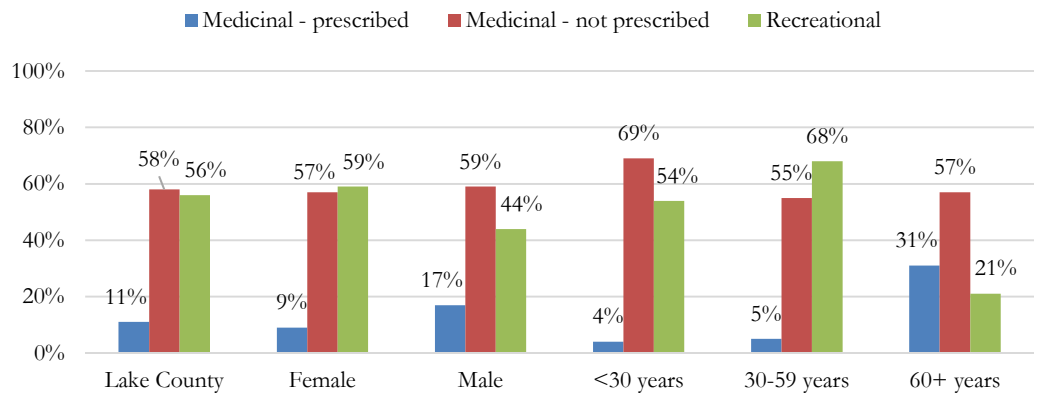
Figure 83. *Education and Income of Individuals Indicating Medicinal or Recreational Marijuana Use*

Legend: ■ Medicinal - prescribed ■ Medicinal - not prescribed ■ Recreational

	<High school	High school graduate/GED	Some college/ Associate's degree	Bachelor's degree or higher	<$20,000	$20,000 - $59,000	$60,000 - $99,999	$100,000+
Medicinal - prescribed		4%	18%	2%	27%	6%	19%	13%
Medicinal - not prescribed		89%	55%	25%	86%	58%	25%	
Recreational		36%	55%	81%	86%	49%	81%	100%
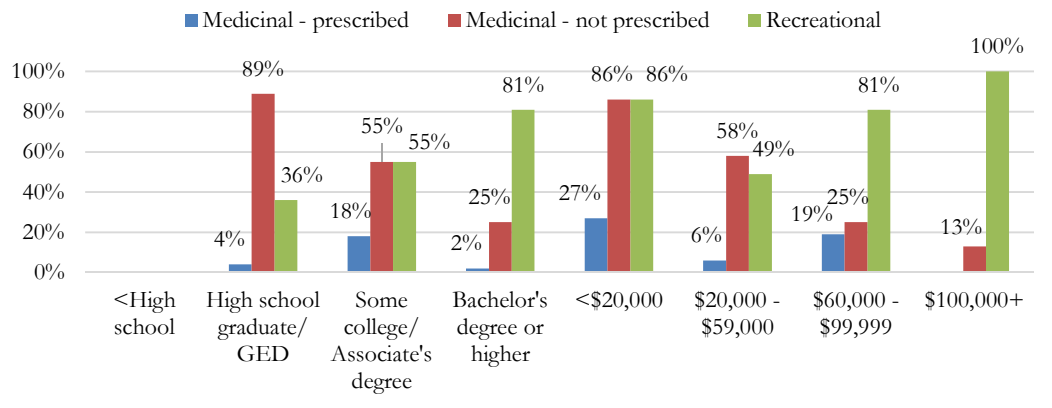
Respondents reporting current marijuana use characterized their use as prescribed for medicinal purposes (11%), medicinal but not prescribed (58%), and recreational (56%; Figure 82). Current use as prescribed for medicinal purposes was highest among individuals 60 years of age and older (Figure 82), while non-prescribed medicinal and recreational use was highest among individuals with a high school graduate equivalent, and those with a total annual household income of $100,000 or greater, respectively (Figure 83). Non-prescribed medicinal marijuana use declined and recreational marijuana use increased with greater educational attainment and increasing total

annual household income (Figure 83), and prescribed medicinal marijuana use increased with age (Figure 82).

<u>Nutrition and Access to Healthy Food</u>

Figure 84. *Overall Diet*

*Does not equal 100% due to rounding.
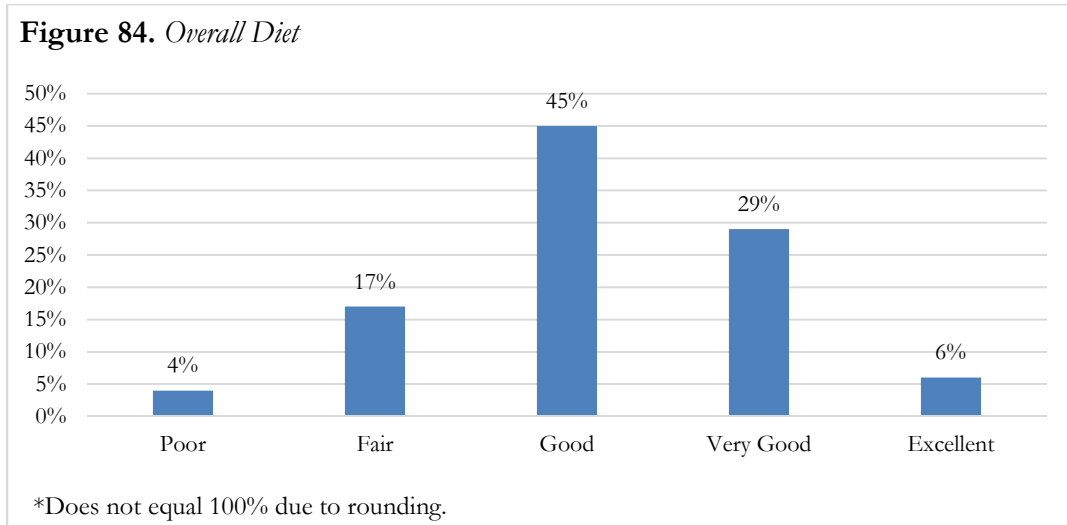
Nearly one-half of respondents (45%) characterized their overall diet as "Good", while 29% described their overall diet was "Very good", and 6% indicated that their overall diet was "Excellent" (Figure 84). Remaining respondents characterized their diet as "Fair" (17%) and "Poor" (4%).

Figure 85. *Composite, Sex, and Age of Individuals with a Poor Overall Diet*
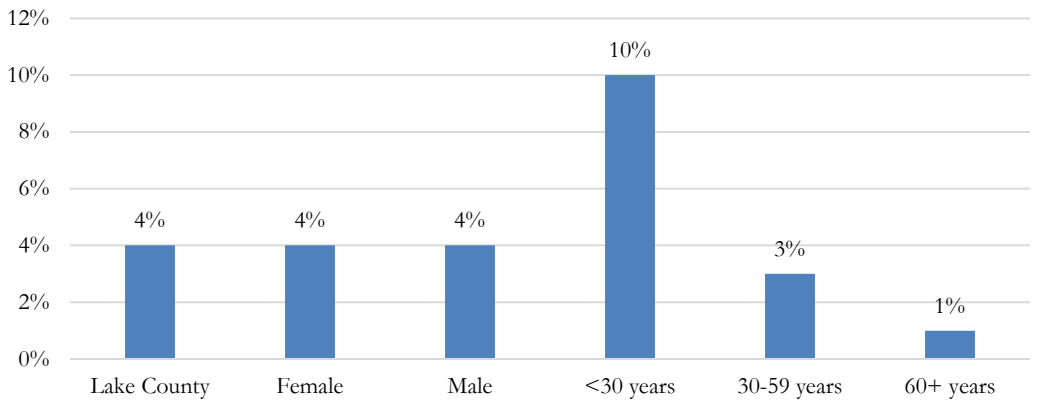
Figure 86. *Education and Income of Individuals with a Poor Overall Diet*
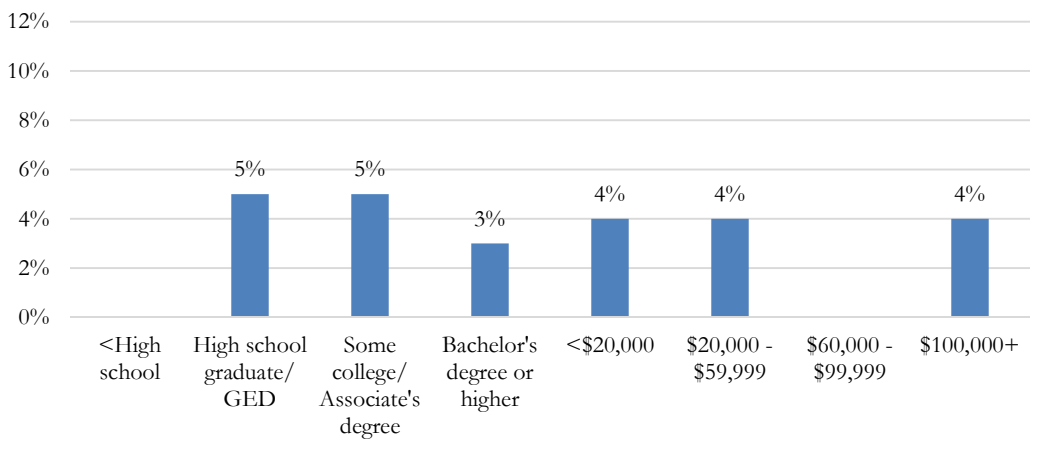
Four percent of respondents characterized their overall diet as "Poor" (Figure 85).

Individuals less than 30 years of age reported a poor overall diet most frequently (10%), and reports

of poor overall diet declined with advancing age (Figure 85).

Figure 87. *Total Meals Not Prepared at Home in the Past Seven Days*

Meals	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15+
%	12%	24%	25%	16%	8%	5%	2%	3%	1%	1%	2%		1%			2%

*Does not equal 100% due to rounding.
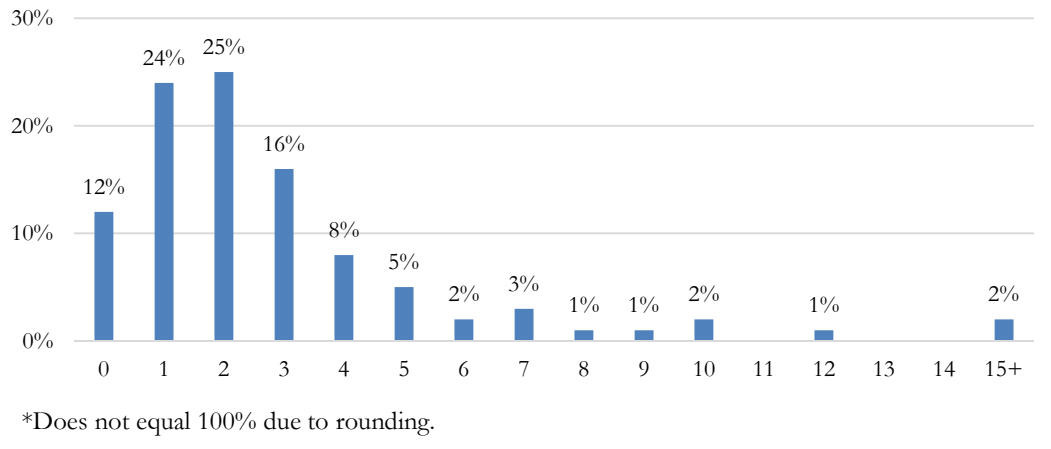
Twelve percent of respondents indicated that all of their meals for the past seven days were prepared at home (Figure 87). Approximately one-quarter reported obtaining one (24%) and two (25%) meals prepared away from home in the past seven days, while 16% reported three meals, 8% reported four meals, 5% reported five meals, and 3% reported seven meals prepared away from home in the past seven days. Two percent or less reported obtaining six (2%), eight (1%), nine (1%), ten (2%), twelve (1%), and fifteen or more (2%) meals prepared away from home in the past seven days.

Figure 88. *Number of Days Fruits and Vegetables were Eaten in the Past 7 Days*

*Does not equal 100% due to rounding.
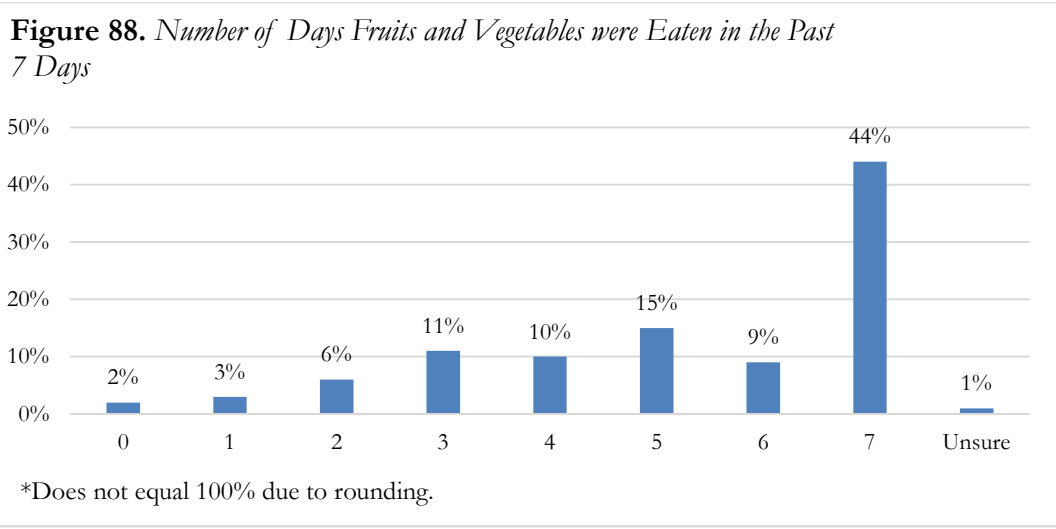
Less than one-half of respondents (44%) reported eating fruits and vegetables every day for the past seven days (Figure 88). Forty-five percent indicated they had eaten fruits and vegetables from three to six days in the past seven days, and 11% of respondents reported having eaten fruits and vegetables on two or fewer days in the past seven days; 1% of respondents were unsure of the number of days fruits and vegetables were eaten in the past seven days.

Figure 89. *Composite, Sex, and Age of Individuals Indicating Number of Days Fruits and Vegetables Were Eaten in the Past 7 Days*

Category	Value
Lake County	5
Female	5
Male	5
<30 years	5
30-59 years	5
60+ years	5
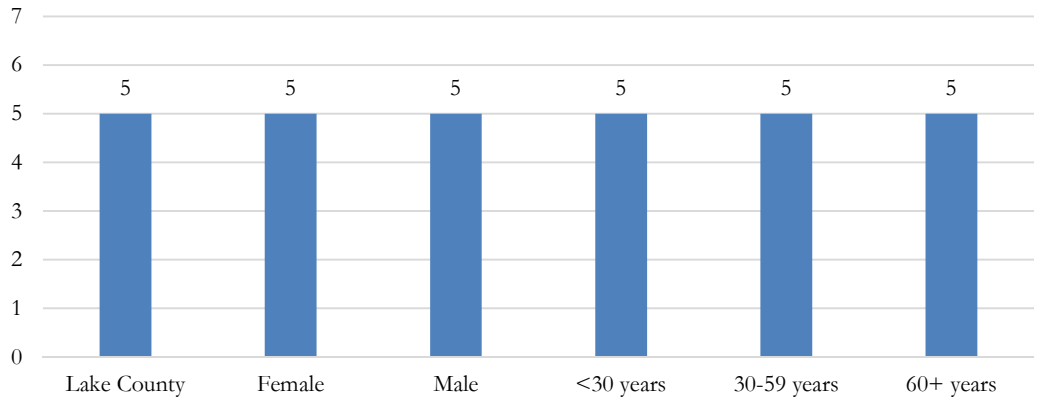
Figure 90. *Education and Income of Individuals Indicating Number of Days Fruits and Vegtables Were Eaten in the Past 7 Days*

Category	Value
<High school	4
High school graduate/ GED	5
Some college/ Associate's degree	6
Bachelor's degree or higher	6
<$20,000	4
$20,000 - $59,999	5
$60,000 - $99,999	6
$100,000+	6
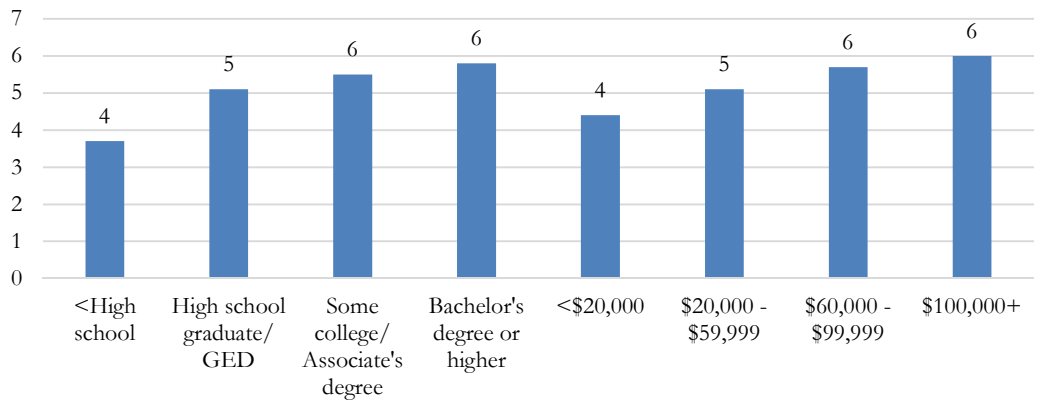
Little variation was observed across sex and age with respect to respondent fruit and vegetable consumption during the past seven days (Figure 89). Fruit and vegetable consumption did, however, increase with greater educational attainment and increasing total annual household income (Figure 90).

Physical Activity and BMI

Figure 91. *Number of Days per Week With at Least 10 Minutes of Moderate Intensity Sports, Fitness, or Recreational Activity*
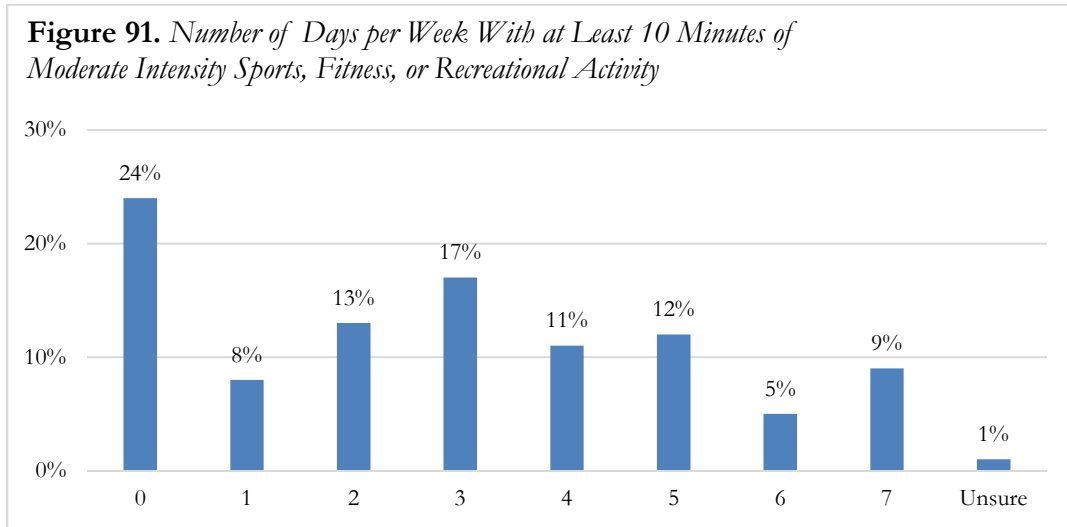
Approximately one-quarter of respondents reported no days with at least ten minutes of moderate intensity sports, fitness, or recreational activity per week, while 17% reported a weekly high of three days (Figure 91). Eight percent of respondents reported one day with at least ten minutes of moderate intensity sports, fitness, or recreational activity, while 13% of respondents reported two days, 11% reported four days, 12% reported five days, 5% reported six days, and 9% reported seven days; 1% of respondents were unsure how many days per week they acquired at least ten minutes of moderate intensity sports, fitness, or recreational activity.

Figure 92. *Composite, Sex, and Age of Individuals Indicating Mean Number of Days per Week with at Least 10 Minutes of Moderate Intensity Sports, Fitness, or Recreational Activity*

Category	Mean Days
Lake County	3
Female	3
Male	3
<30 years	3
30-59 years	3
60+ years	3
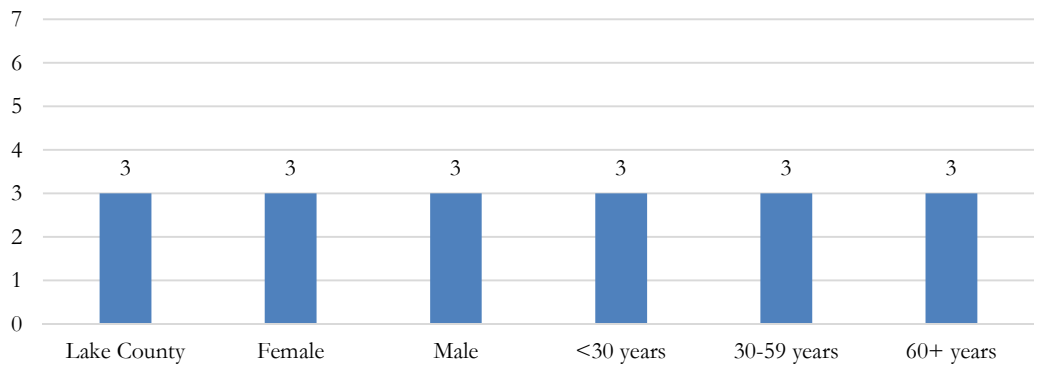
Figure 93. *Education and Income of Individuals Indicating Mean Number of Days per Week with at Least 10 Minutes of Moderate Intensity Sports, Fitness, or Recreational Activity*

Category	Mean Days
<High school	2
High school graduate/ GED	3
Some college/ Associate's degree	3
Bachelor's degree or higher	3
<$20,000	2
$20,000 - $59,999	3
$60,000 - $99,999	3
$100,000+	3

Little variation was observed across sex and age with respect to mean days per week respondents acquired at least ten minutes of moderate intensity sports, fitness, or recreational activity (Figure 92). Mean days per week with at least ten minutes of moderate intensity sports, fitness, or recreational activity was lowest among individuals with less than a high school education, and those with a total annual household income less than $20,000 (Figure 93).

Figure 94. *Number of Days per Week with at Least 10 Minutes of Vigorous Intensity Sports, Fitness, or Recreational Activity*

*Does not equal 100% due to rounding.
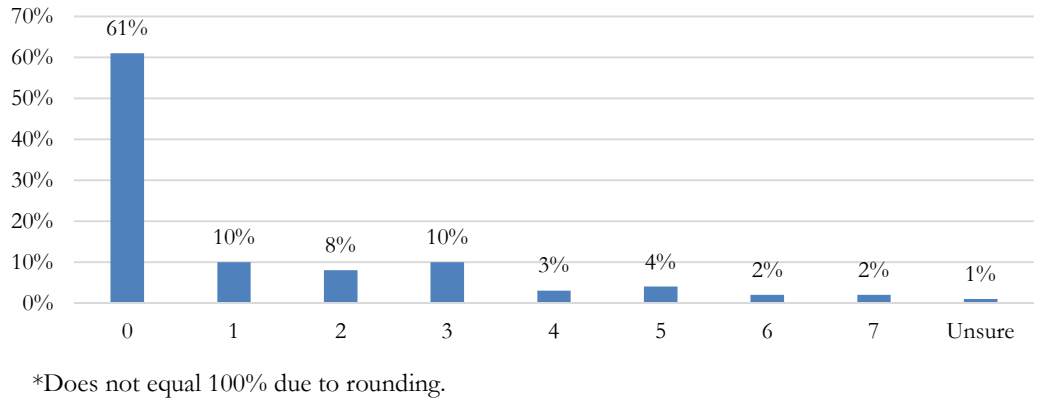
Approximately two-thirds of respondents (61%) reported no days per week with at least ten minutes of vigorous intensity sports, fitness, or recreational activity (Figure 94). Ten percent of respondents reported one day with at least ten minutes of vigorous intensity sports, fitness, or recreational activity, while 8% reported two days, 10% reported three days, 3% reported four days, 4% reported five days, and 2% reported six and seven days, respectively; 1% of respondents were unsure how many days per week they acquired at least ten minutes of vigorous intensity sports, fitness, or recreational activity.

Figure 95. *Composite, Sex, and Age of Individuals Indicating Mean Number of Days per Week with at Least 10 Minutes of Vigorous Intensity Sports, Fitness, or Recreational Activity*

	Lake County	Female	Male	<30 years	30-59 years	60+ years
Mean	1	1	1	2	1	1
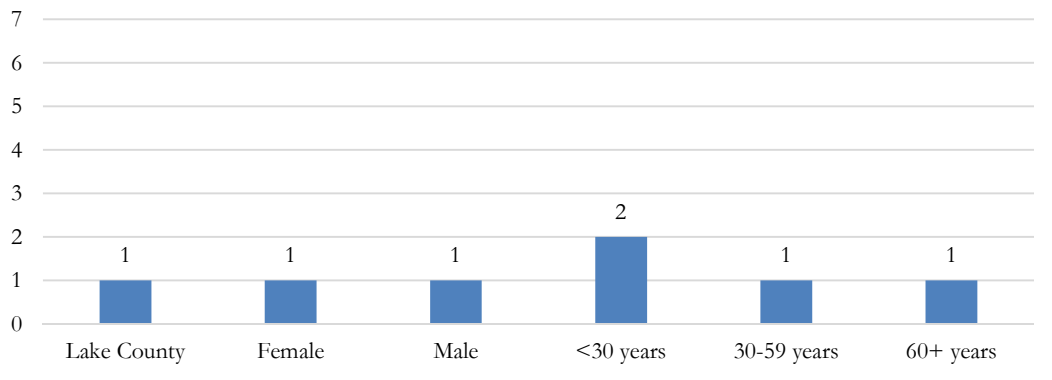
Figure 96. *Education and Income of Individuals Indicating Mean Number of Days per Week with at Least 10 Minutes of Vigorous Intensity Sports, Fitness, or Recreational Activity*
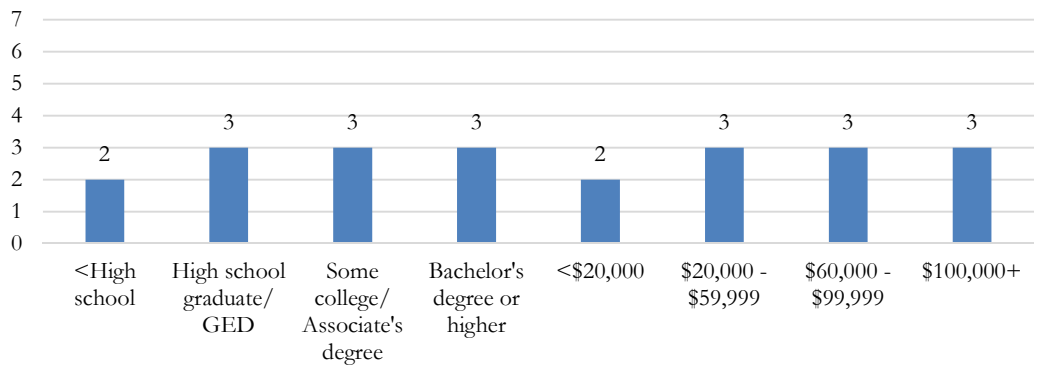
	<High school	High school graduate/ GED	Some college/ Associate's degree	Bachelor's degree or higher	<$20,000	$20,000 - $59,999	$60,000 - $99,999	$100,000+
Mean	1	1	1	2	1	1	1	2
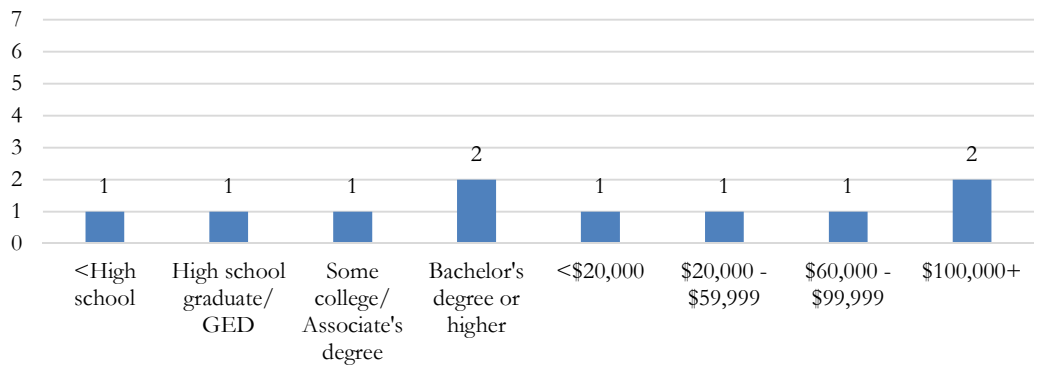
Little variation was observed across sex, age, education, and income with respect to mean days per week respondents acquired at least ten minutes of vigorous intensity sports, fitness, or recreational activity (Figures 95 and 96). Mean days per week with at least ten minutes of vigorous intensity sports, fitness, or recreational activity was highest among individuals less than 30 years of age (Figure 95), with a Bachelor's degree or higher (Figure 96), and among those with a total annual household income of $100,000 or greater (Figure 96).

Figure 97. *Number of Days per Week With at Least 60 Minutes of Physical Activity*

*Does not equal 100% due to rounding.
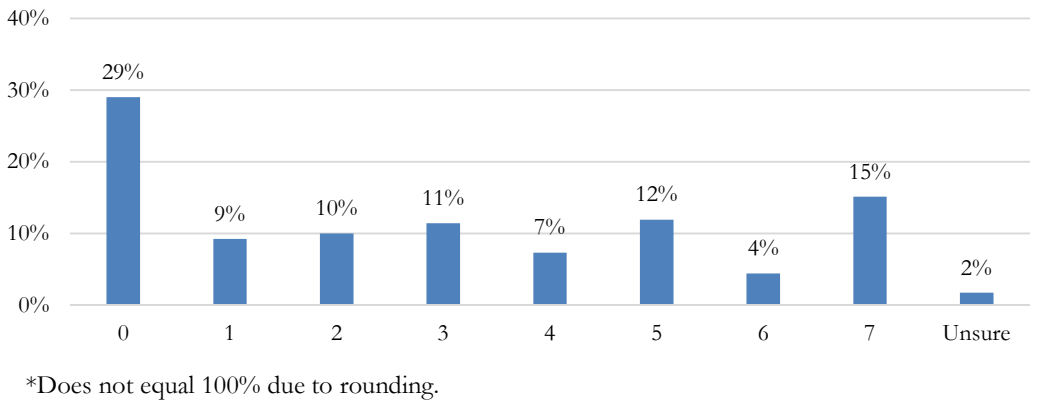
Nearly one-third of respondents (29%) reported no days per week with at least 60 minutes of physical activity (Figure 97). Fifteen percent of respondents reported seven days with at least 60 minutes of physical activity, while 10% reported two days, 11% reported three days, 7% reported four days, 12% reported five days, and 4% reported six days; 2% of respondents were unsure how many days per week they acquired at least 60 minutes of physical activity.

Figure 98. *Composite, Sex, and Age of Individuals Indicating Mean Number of Days per Week with at Least 60 Minutes of Physical Activity*
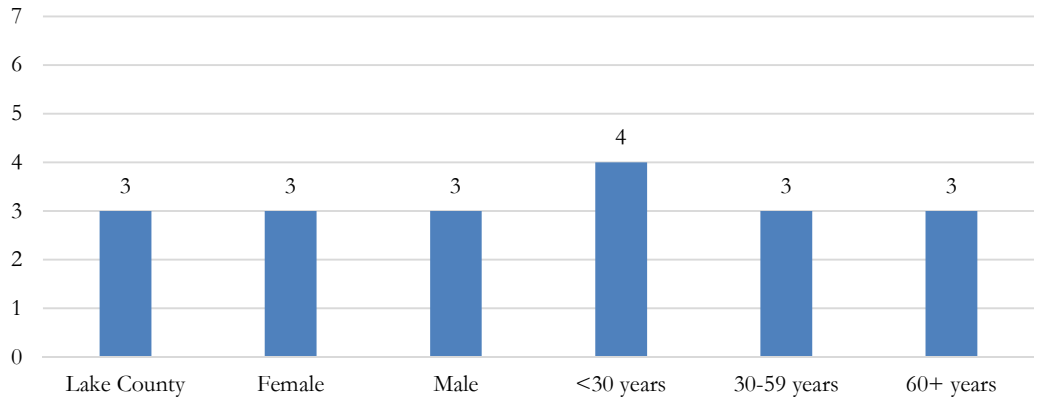
Figure 99. *Education and Income of Individuals Indicating Mean Number of Days per Week with at Least 60 Minutes of Physical Activity*
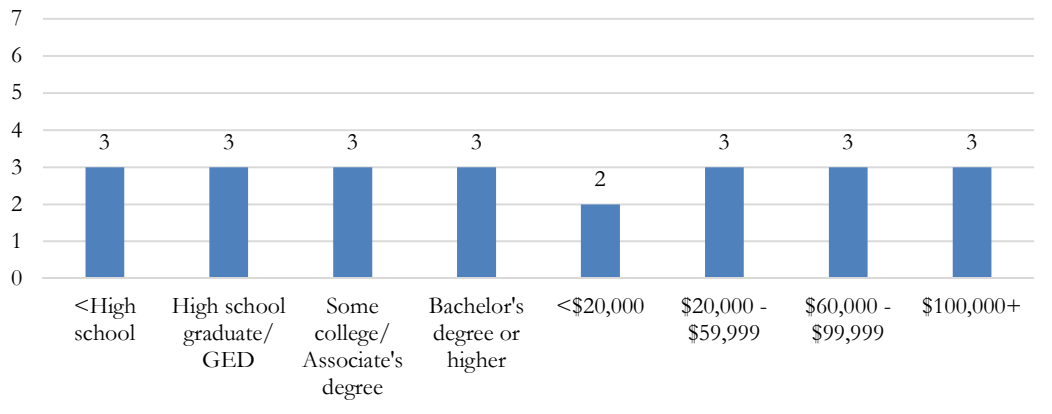
Little variation was observed across sex, age, education, and income with respect to mean days per week respondents acquired at least 60 minutes of physical activity (Figures 98 and 99). Mean days per week with at least 60 minutes of physical activity was highest among individuals less than 30 years of age (Figure 98), and lowest among those with a total annual household income less than $20,000 (Figure 99).

Figure 100. *Composite, Sex, and Age of Individuals with a BMI Equal to or Greater than 30 (Obese)*

A bar chart showing obesity percentages:
- Lake County: 41%
- Female: 40%
- Male: 43%
- <30 years: 45%
- 30-59 years: 45%
- 60+ years: 41%
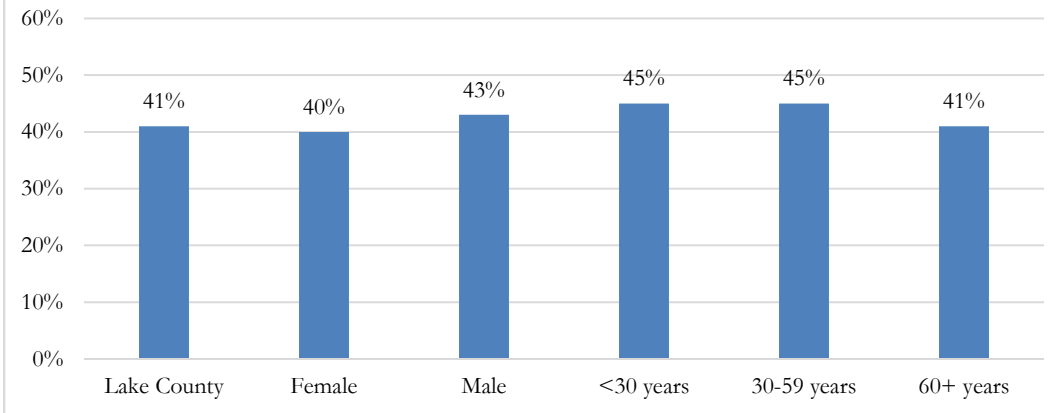
Figure 101. *Education and Income of Individuals with a BMI Equal to or Greater Than 30 (Obese)*

A bar chart showing obesity percentages:
- <High school: 60%
- High school graduate/GED: 45%
- Some college/Associate's degree: 39%
- Bachelor's degree or higher: 33%
- <$20,000: 39%
- $20,000 - $59,999: 46%
- $60,000 - $99,999: 42%
- $100,000+: 34%
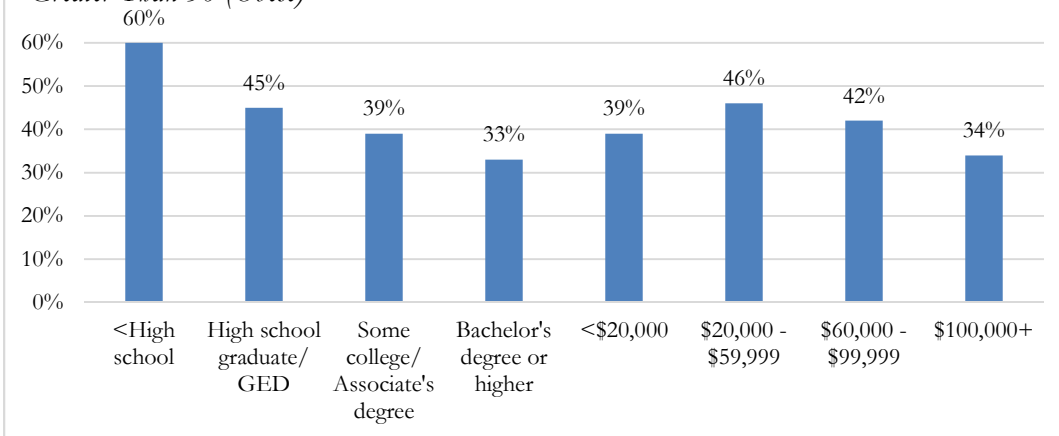
Less than one-half of respondents (41%) were currently obese (Figure 100). Obesity was higher among males than females (Figuree 100), decreased with age and greater educational attainment (Figure 101), and decreased with higher total annual household income, between $20,000 to $59,999, and $100,000 or greater (Figure 101).

Prescription Drug Abuse

Nearly all respondents (99%) indicated they had not abused prescription drugs in the past 30 days. Frequency of abuse among the 1% of respondents indicating prescription drug abuse in the past 30 days consisted of one day (5%), two days (5%), five days (30%), 20 days (3%), and 30 days (48%). Less than one percent (0.1%) were unsure how many days they abused prescription drugs in the past 30 days. Among those indicating prescription drug abuse, antidepressants (24%), opioids (9%), sedatives (6%), and stimulants (4%) were identified.

Sexual Activity

Figure 102. *Number of Sexual Partners in the Past 12 Months*
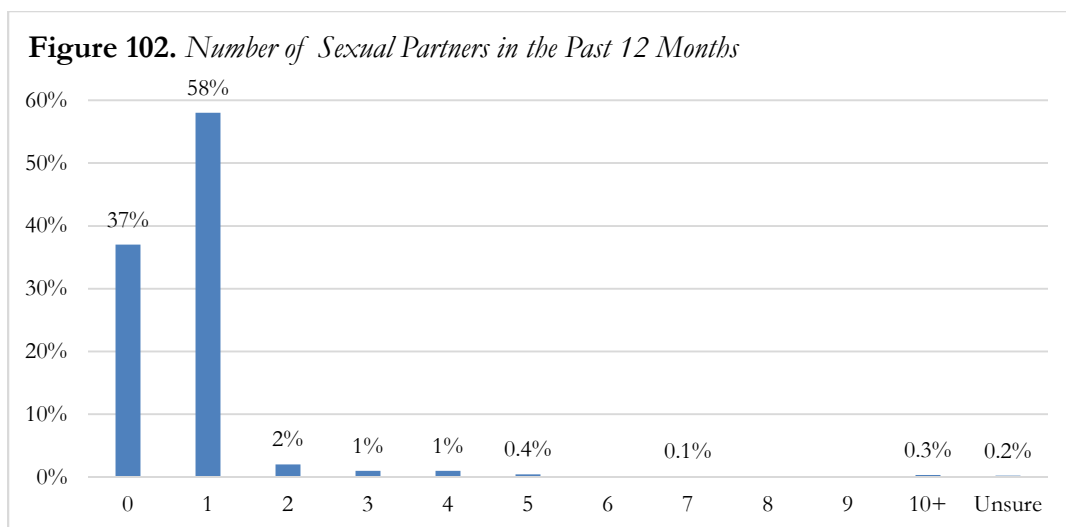
With respect to total sexual partners in the past 12 months, the majority of respondents reported having zero (37%) or one (58%) sexual partners during the aforementioned timeframe (Figure 102). Two percent of respondents reported having two sexual partners in the past 12 months, while 1% reported having three and four partners, respectively, and less than 1% reported having five (0.4%), seven (0.1%), or ten or more sexual partners (0.3%), respectively; 0.2% were unsure how many sexual partners they have had in the past 12 months.

Figure 103. *Frequency of Sexual Activity Without the Use of a Condom in the Past 12 Months*

Category	Percentage
Never	19%
Less than half the time	4%
About half the time	2%
More than half the time	3%
Always	72%
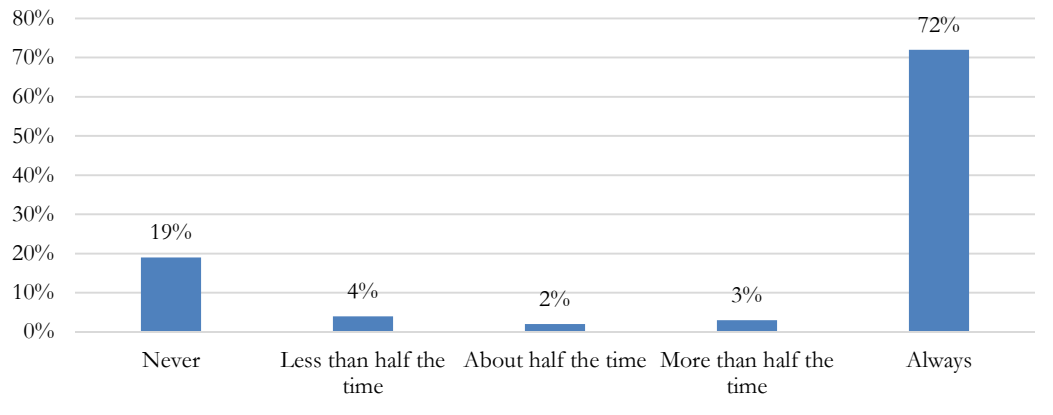
Figure 104. *Methods Used to Prevent Pregnancy*

Method	Percentage
No method	22%
Tubal Ligation or vasectomy	16%
Condom	9%
Birth control pill	6%
IUD or Implant	5%
Withdrawal or other method	4%
Birth control ring	1%
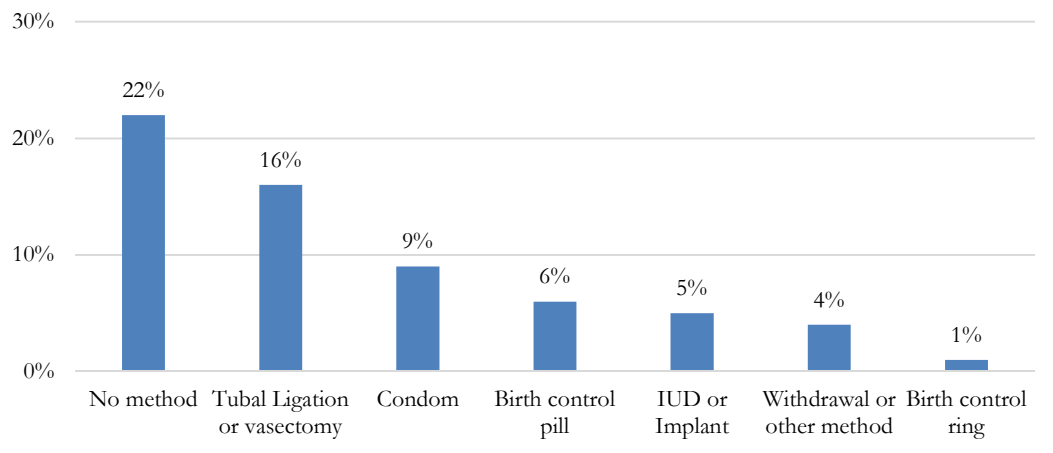
More than two-thirds of respondents (72%) characterized sexual activity frequency in the past 12 months without a condom as "Always" (Figure 103). Less than one-quarter of respondents (19%) indicated that they had not participated in sexual activity in the past 12 months without a condom, while 4% of respondents used a condom "Less than half the time", 2% of respondents used a condom "About half the time", and 3% of respondents used a condom "More than half the time" (Figure 103). Methods used to prevent pregnancy included "Tubal Ligation or vasectomy" (16%), "Condom" (9%), "Birth control pill" (6%), "IUD or implant" (5%), "Withdrawal or other

method" (4%), and the use of a "Birth control ring" (1%); 22% indicated "No method" (Figure 104).

Suicide

Figure 105. *Composite, Sex, and Age of Individuals Who Seriously Considered Suicide in the Past 12 Months*

Category	Percent
Lake County	4%
Female	5%
Male	2%
<30 years	5%
30-59 years	5%
60+ years	2%

Figure 106. *Education and Income of Individuals Who Seriously Considered Suicide in the Past 12 Months*

Category	Percent
<High school	
High school graduate/GED	4%
Some college/Associate's degree	5%
Bachelor's degree or higher	3%
<$20,000	8%
$20,000 - $59,999	4%
$60,000 - $99,999	
$100,000+	0.4%

Four percent of respondents indicated they had seriously considered suicide in the past 12 months (Figure 105). Seriously considering suicide in the past 12 months was highest among individuals with a total annual household income less than $20,000 (8%) and lowest among those with a total annual household income of $100,00 or greater (0.4%; Figure 106). Seriously

considering suicide was higher among females than males (Figure 105), and decreased with increasing total annual household income (Figure 106).

Figure 107. *Number of Suicide Attempts in the Past 12 Months by Those Seriously Contemplating Suicide*
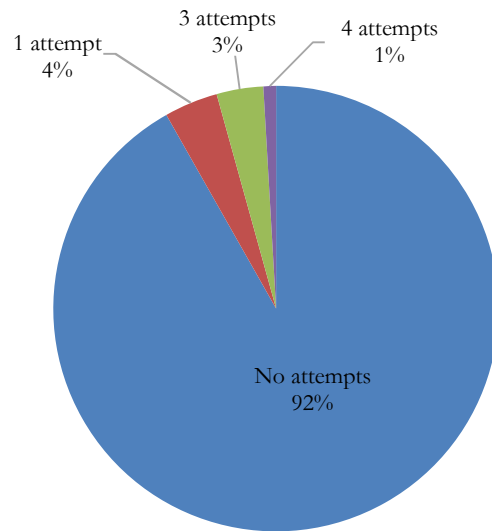
Among those respondents who have seriously considered suicide in the past 12 months, 92% did not subsequently attempt suicide (Figure 107). Among the respondents who did attempt suicide in the past 12 months (8%), 47% made a single suicide attempt, while 42% attempted suicide on two occasions, and 11% attempted suicide on four occasions.

Tobacco and E-cigarette Use

Figure 108. *Composite, Sex, and Age of Individuals Who Have Smoked at Least 100 Cigarettes in Their Lifetime*
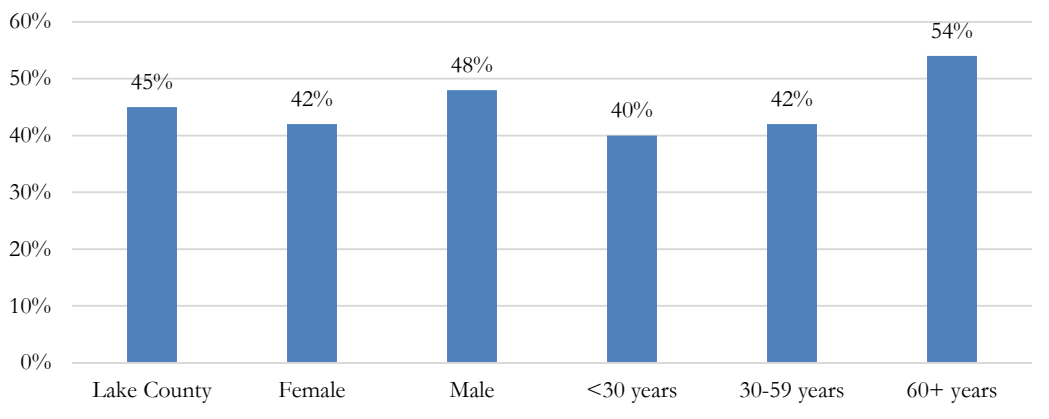
Figure 109. *Education and Income of Individuals Who Have Smoked at Least 100 Cigarettes in Their Lifetime*
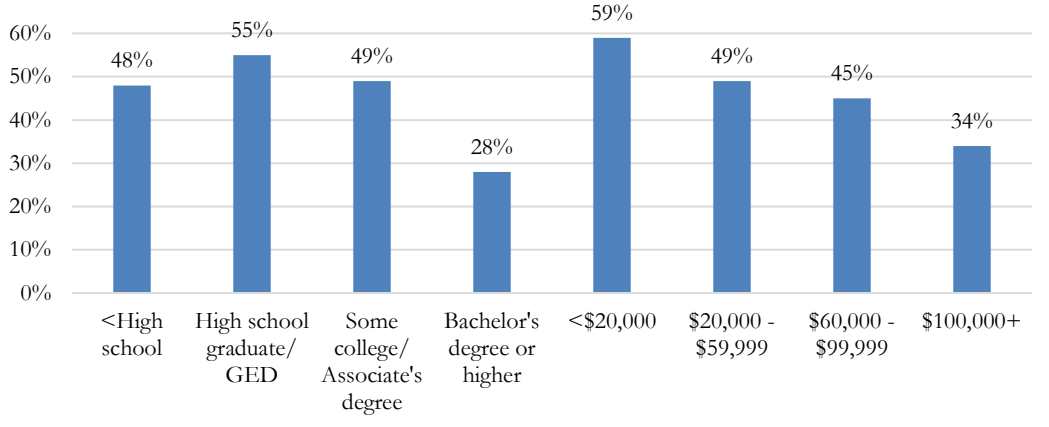
Less than one-half of respondents (45%) reported having smoked at least 100 cigarettes in their lifetime (Figure 108). Having smoked at least 100 cigarettes was highest among respondents with a total annual household income less than $20,000 (59%) and lowest among those with a Bachelor's degree or higher (28%; Figure 109). Having smoked at least 100 cigarettes increased with advancing age (Figure 108), and decreased with greater total annual household income (Figure 109).

Figure 110. *Composite, Sex, and Age of Individuals Who Currently Smoke Everyday or Some Days*

■ Every day   ■ Some days

	Lake County	Female	Male	<30 years	30-59 years	60+ years
Some days	5%	5%	5%	6%	8%	2%
Every day	18%	25%	14%	20%	28%	11%
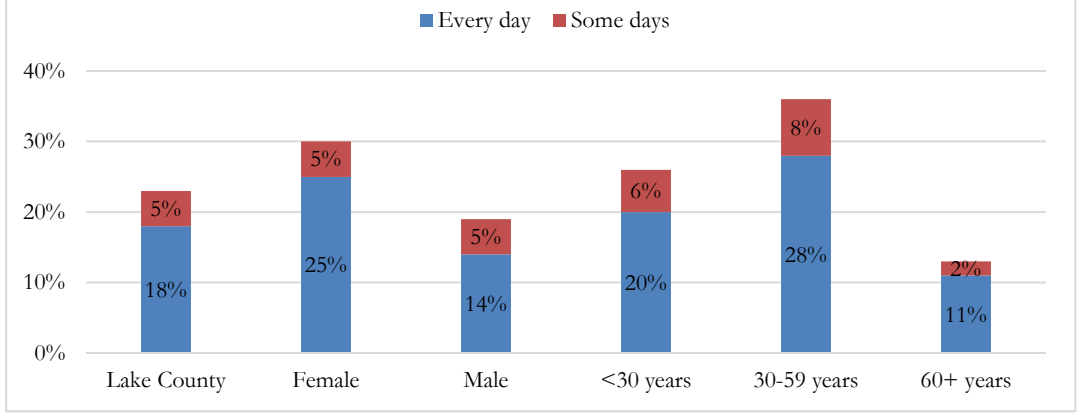
Figure 111. *Education and Income of Individuals Who Currently Smoke Everyday or Some Days*

■ Every day   ■ Some days

	<High school	High school graduate/ GED	Some college/ Associate's degree	Bachelor's degree or higher	<$20,000	$20,000 - $59,999	$60,000 - $99,999	$100,000+
Some days		3%	6%	9%	4%	4%	5%	14%
Every day	9%	27%	20%	6%	26%	18%	21%	6%
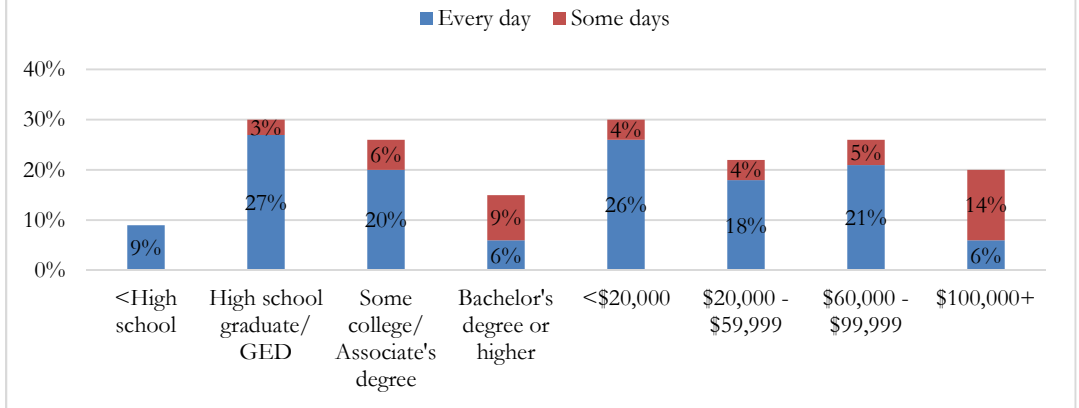
Approximately one-fifth of respondents (18%) currently smoke every day, and 5% smoke some days (Figure 110). Smoking everyday was highest among respondents between the ages of 30 and 59 years of age (Figure 110), and lowest among individuals with less than a Bachelor's degree or higher (Figure 111). Smoking increased with advancing age between individuals less than 30 years of age and those 30 to 59 years of age (Figure 110), and decreased with educational attainment greater than a high school graduate or GED equivalent (Figure 111).

Figure 112. *Composite, Sex, and Age of Current Smokers That Have Tried to Quit in the Past 12 Months*
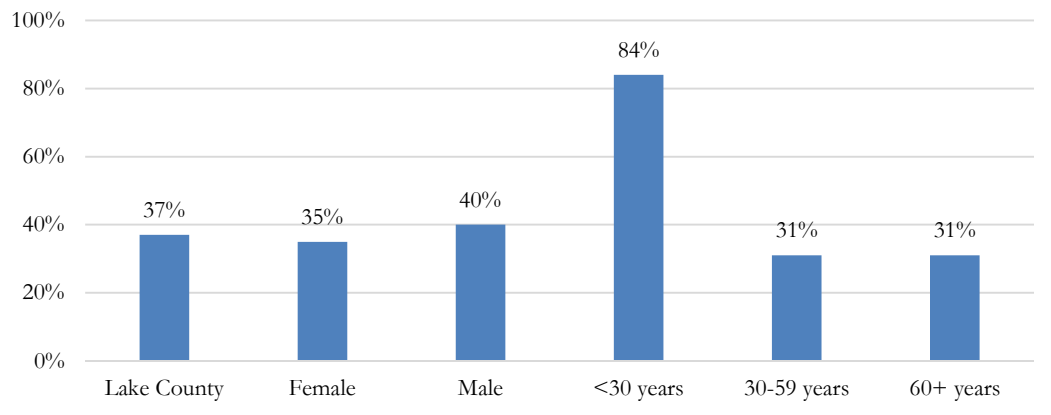
Figure 113. *Education and Income of Current Smokers That Have Tried to Quit in the Past 12 Months*
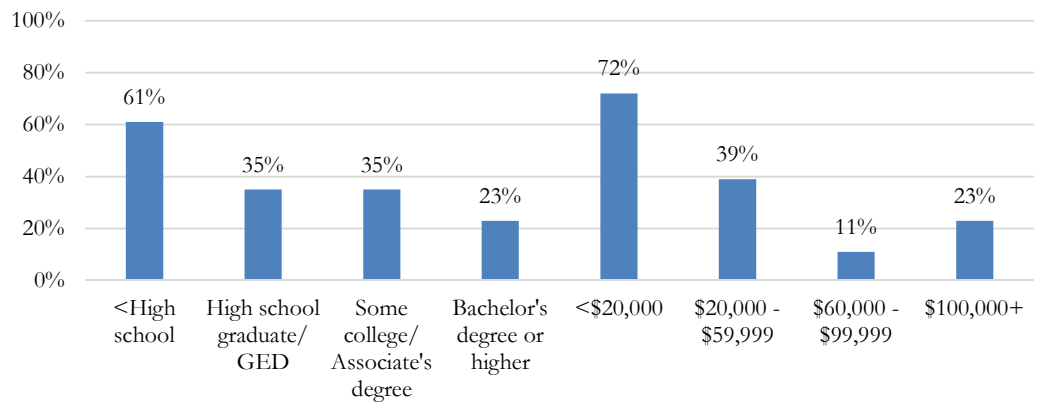
More than one-third of respondents (37%) who are currently smoking have tried to quit in the past 12 months (Figure 112). Quit attempts in the past 12 months were highest among individuals less than 30 years of age (Figure 112), and least among those reporting a total annual household income of $60,000 to $99,999 (Figure 113). Quit attempts in the past 12 months decreased with advancing age between individuals less than 30 years of age and those 30 years of age and older (Figure 112), with increasing educational attainment (Figure 113), and between total annual household incomes less than $20,000 and $60,000 to $99,999 (Figure 113).

Figure 114. *Composite, Sex, and Age of Individuals Who Currently Use Smokeless Tobacco*
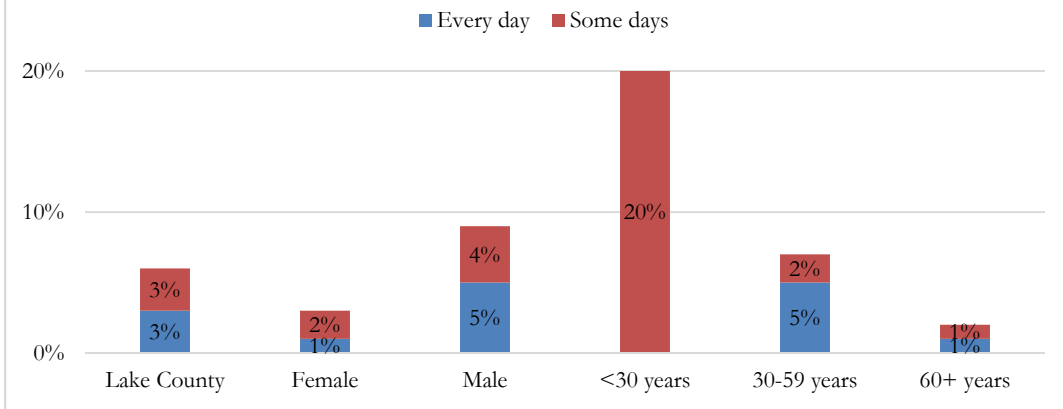
Figure 115. *Education and Income of Individuals Who Currently Use Smokeless Tobacco*
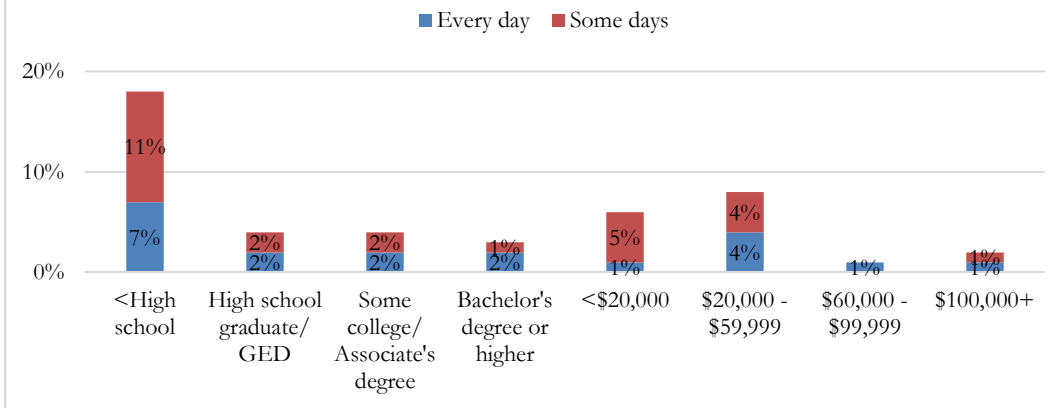
Less than 10% of respondents reported current smokeless tobacco use (Figure 114).

Current smokeless tobacco use was greater among males than females (Figure 114), highest among

respondents less than 30 years of age (Figure 114), and least among those with a total annual

household income of $60,000 to $99,999 (Figure 115). Current smokeless tobacco use decreased

with advancing age (Figure 114), increased educational attainment (Figure 115), and total annual

household incomes greater than $59,999 (Figure 115).

Figure 116. *Composite, Sex, and Age of Individuals Who Have Used E-cigarettes*
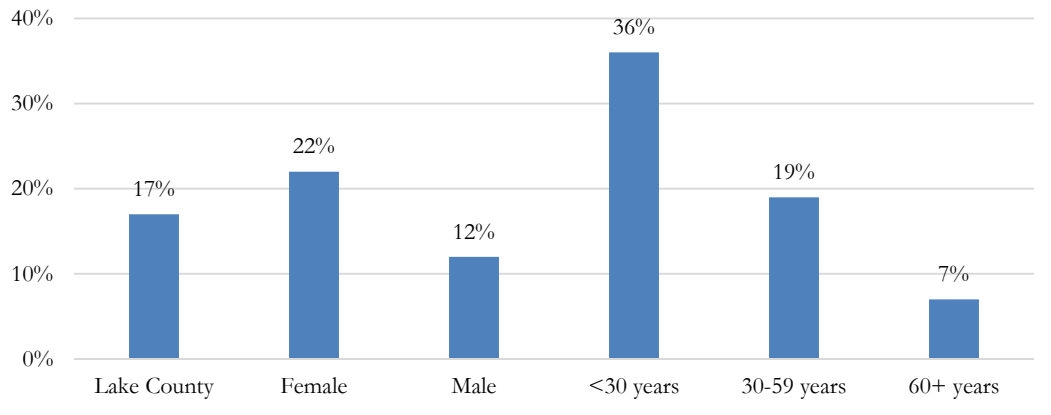
Figure 117. *Education and Income of Individuals Who Have Used E-cigarettes*
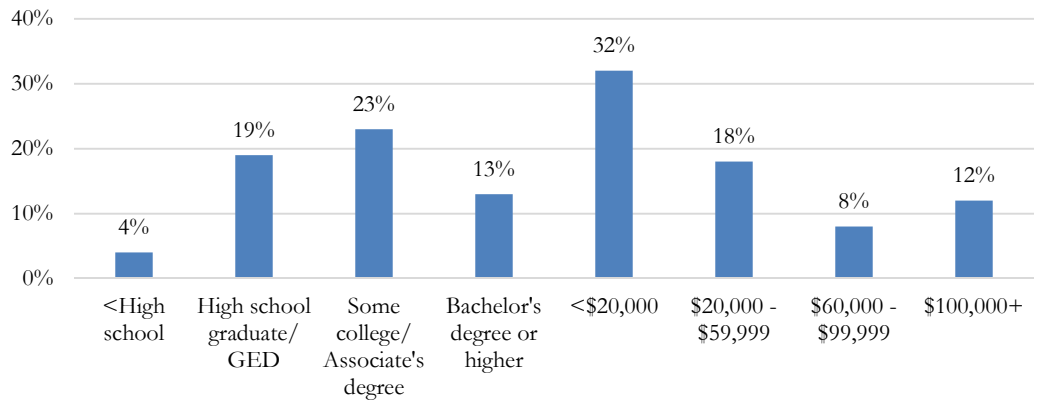
Seventeen percent of respondents reported having ever used an e-cigarette (Figure 116). E-cigarette use was higher among females than males (Figure 116), highest among individuals less than 30 years of age (Figure 116), and lowest among those with less than a high school education (Figure 117). Having ever used an e-cigarette decreased with advancing age (Figure 116), increased with educational attainment between less than high school and some college/Associate's degree (Figure 117), and decreased between total annual household incomes less than $20,000 and $60,000 to $99,999 (Figure 117).

Figure 118. *Composite, Sex, and Age of Individuals Currently Using E-cigarettes*
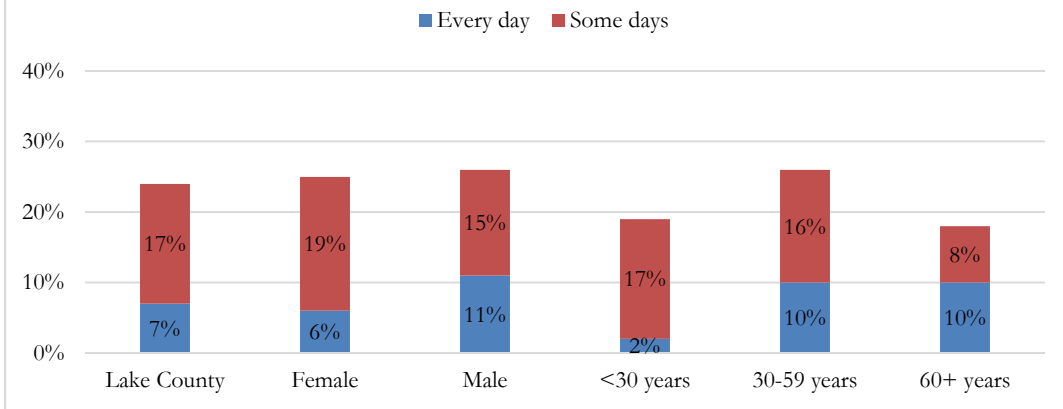
Figure 119. *Education and Income of Individuals Currently Using E-cigarettes*
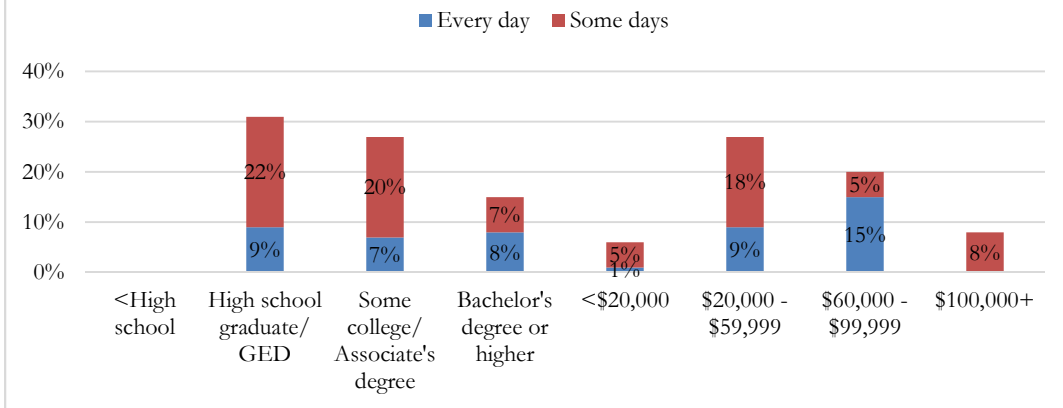
Nearly one-quarter of respondents (24%) reported current e-cigarette use (Figure 118). Everyday e-cigarette use was higher among males than females (Figure 118), increased with advancing age (Figure 118), and between total annual household incomes less than $20,000 and $60,000 and $99,999 (Figure 119). Periodic e-cigarette use was higher among females than males (Figure 118), and decreased with advancing age (Figure 118) and educational attainment between high school graduates and a Bachelor's degree or higher (Figure 119).

3.2.6 Socioeconomic Factors

Adverse Childhood Experiences

Table 23. *Adverse Childhood Experiences Occurring Prior to 18 Years of Age*

	(%)
"You lived with someone who was a problem drinker or alcoholic"	25
"A parent or adult in your home swore at you, insulted you, or put you down"	20
"Your parents were separated or divorced"	20
"You lived with someone who was depressed, mentally ill, or suicidal"	15
"Someone at least 5 years older than you or an adult touched you sexually"	11
"You lived with someone who used illegal street drugs or who abused prescription medications"	10
"A parent or adult in your home hit, beat, kicked, or physically hurt you in any way (not including spanking)"	8
"Your parents or adults in your home slapped, hit, kicked, punched, or beat each other up"	7
"Someone at least 5 years older than you or an adult tried to make you touch them sexually"	4
"You lived with someone who served time or was sentenced to serve time in a prison, jail, or other correctional facility"	4
"Someone at least 5 years older than you or an adult forced you to have sex"	2
None of the above	46

More than one-half of respondents (54%) reported at least one adverse childhood experience prior to 18 years of age (Table 23). One-quarter of respondents (25%) lived with a problem drinker or alcoholic, and approximately one-fifth of respondents had an adult or parent swear at, insult, or put them down (20%), had parents that were divorced or separated (20%), or lived with someone who was depressed, mentally ill, or suicidal (15%). Eleven percent of respondents were touched sexually by an adult or someone five years older than them, and 10% lived with someone abusing illicit or prescription drugs. Less than ten percent of respondents were hit or physically hurt by an adult or parent (8%), lived with parents who physically assaulted each

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other (7%), had an adult or someone five years older try to make them touch them sexually (4%) or force them to have sex (2%), or lived with a currently or previously incarcerated individual (4%).

Crime

During the past six months, 4% of respondents called the police to report a crime, while 2% of respondents indicated that they were affected by a crime in the same period, but did not call the police to report the incident.

Demographic Information

Figure 120. *Educational Attainment*
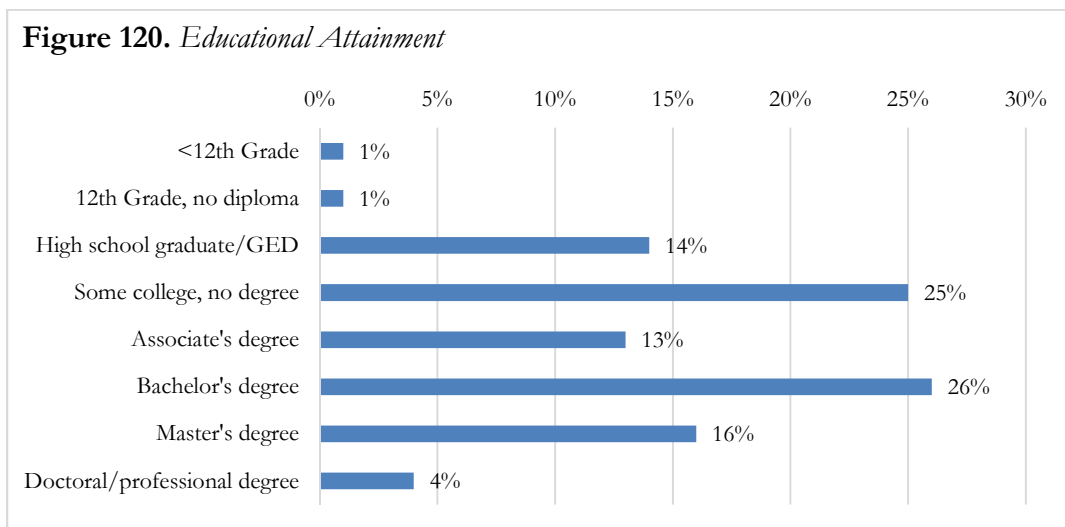
More than one-half of respondents obtained a post-secondary degree, including an Associate's degree (13%), Bachelor's degree (25%), Master's degree (16%), or Doctoral or professional degree (4%), and an additional 25% had some college, but no degree (Figure 120). Fourteen percent of respondents were high school graduates or earned a GED equivalent, and 2% of respondents had less than a high school education.

Figure 121. *Marital Status*

Marital Status	Percentage
Married	58%
Never married	13%
Divorced	11%
Widowed	8%
Living with Partner	6%
Separated	4%
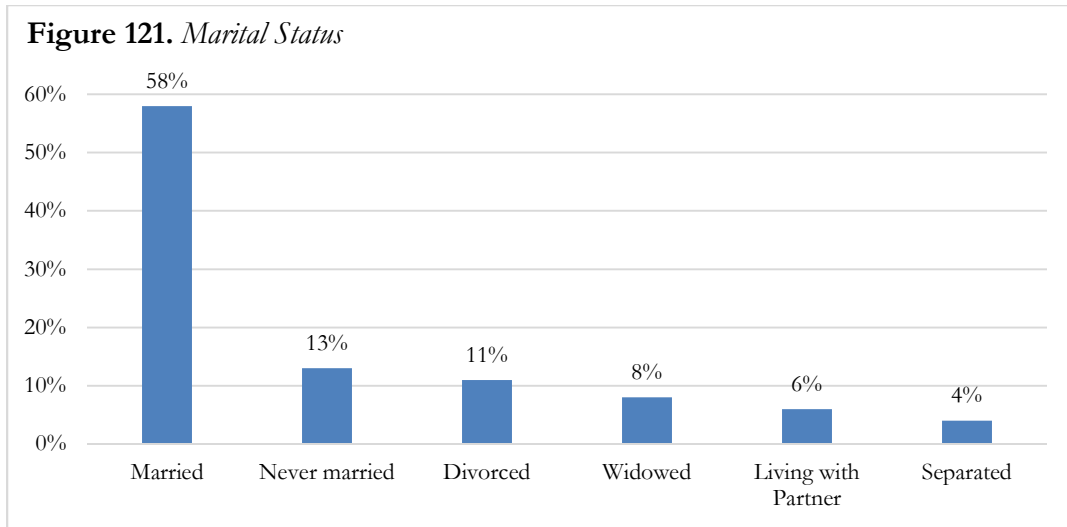
The majority of respondents (58%) reported that they were currently married (Figure 121), and remaining respondents indicated that they were never married (13%), divorced (11%), widowed (8%), living with a partner (6%), or separated (4%).

Figure 122. *Age*

Age	Percentage
19	0.2%
20-24	1%
25-29	5%
30-34	4%
35-39	6%
40-44	5%
45-49	9%
50-54	7%
55-59	12%
60-64	13%
65-69	13%
70-74	13%
75-79	6%
80-84	4%
85+	1%

*Does not equal 100% due to rounding.
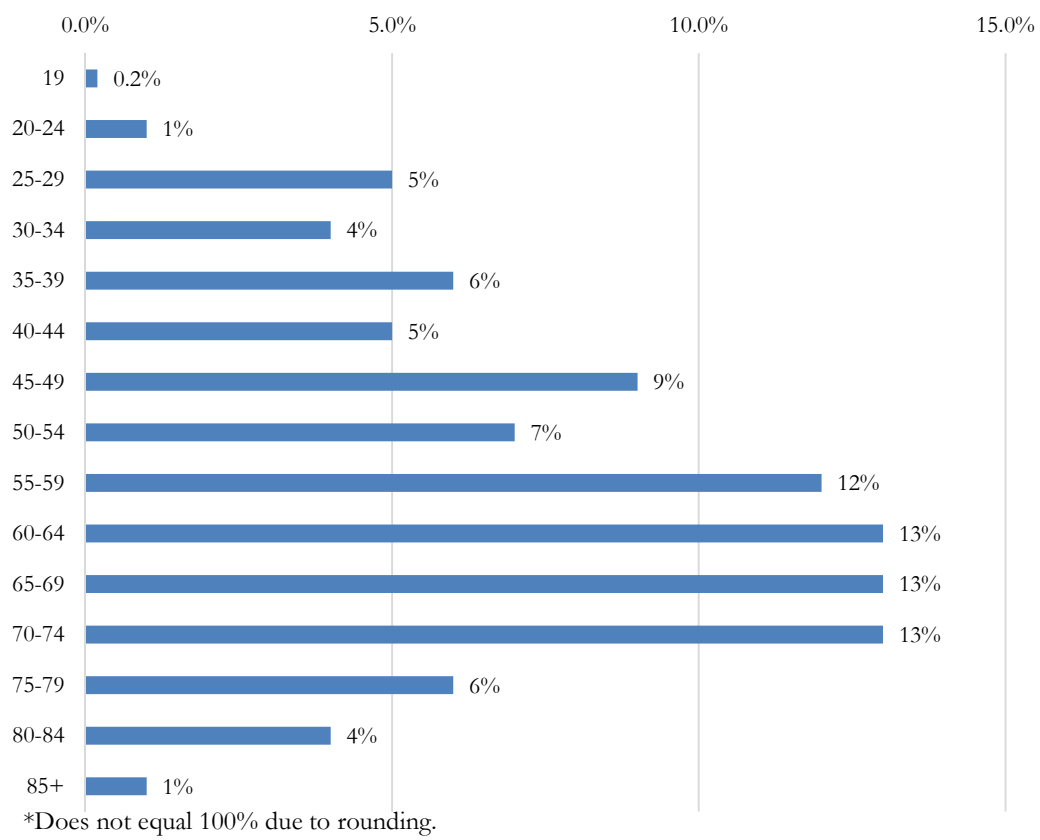
Mean age of respondents was 54 years of age, and ranged from 19 to 92 years of age. More than half of respondents (51%) were 55 to 74 years of age, and respondents less than 30, 40, and 50 years of age accounted for approximately 6%, 10%, and 14%, respectively (Figure 122).

Figure 123. *Race*
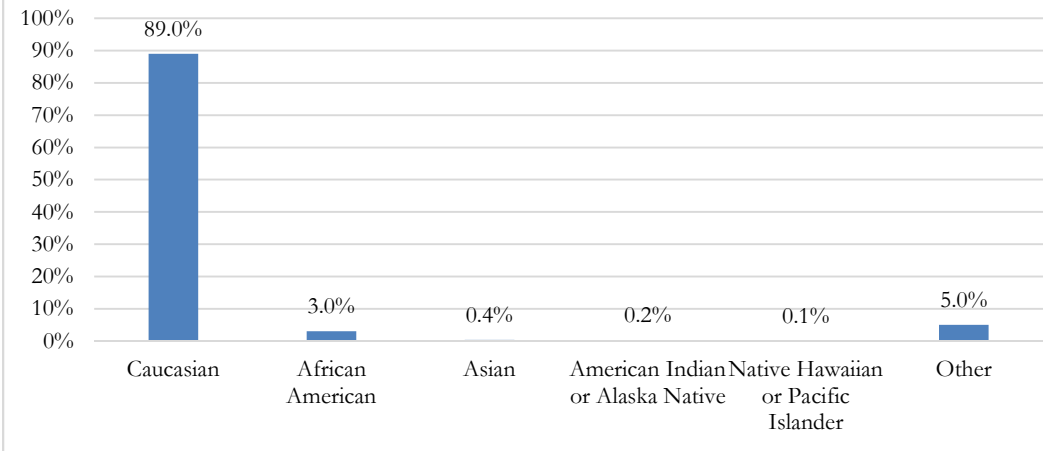
Respondents were predominately Caucasian (89%), and remaining respondents indicated they were African American (3%), Asian (0.4%), American Indian or Alaskan Native (0.2%), Native Hawaiian or Pacific Islander (0.1%), or another race (5%; Table 123). Five percent of respondents were of a Hispanic or Latino ethnicity, and 4% reported speaking Spanish at home. Given a respondent's preferred language, 4% experienced "Some difficulty" understanding or being understood by others, and 1% experienced "A lot of difficulty".

Figure 124. *Employment Status*
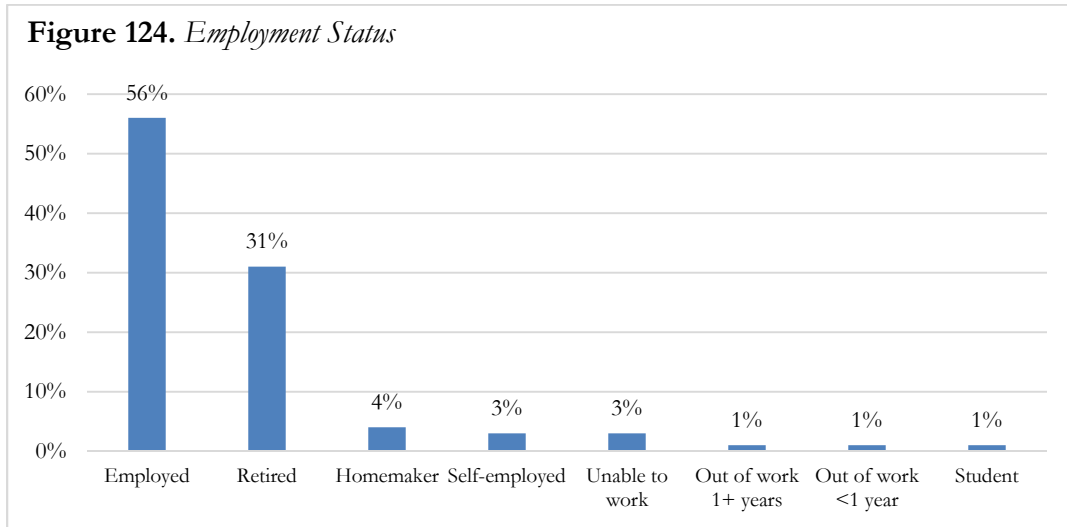
More than one-half of respondents (56%) were currently employed, and 31% indicated they were retired (Figure 124). Less than ten percent indicated they were currently a homemaker (4%) or self-employed (3%), and five percent were unable to work (3%), were out of work for one or more years (1%), or were out of work for less than one year (1%); 1% of respondents were currently students.

Table 24. *Reasons for Current Unemployment*

	(%)
"Disabled"	64
"Taking care of house or family"	10
"Temporarily unable to work for health reasons"	7
"On layoff"	6
"On family or maternity leave"	2
"Other"	11

Among respondents indicating they were currently unemployed, 64% were "Disabled" and unable to return to work, while ten percent or less were "Taking care of house or family" (10%),

"Temporarily unable to work for health reasons" (7%), "On layoff" (6%), or "On family or maternity leave" (2%; Table 24). Eleven percent of respondents indicated "Other".

Figure 125. *Total Annual Household Income Before Taxes*
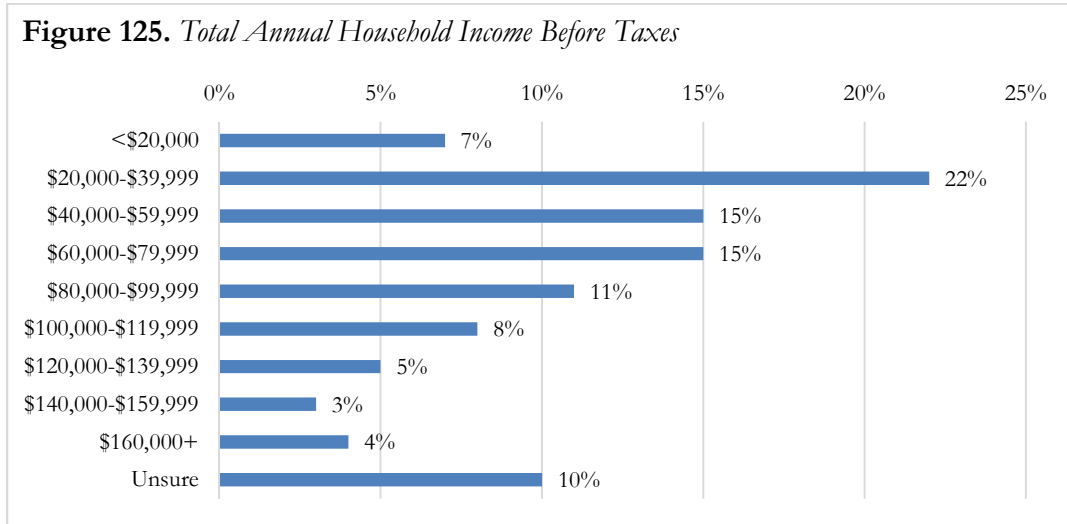
Total annual household income before taxes varied considerably among respondents (Figure 125). Approximately one-fifth of respondents (22%) reported a total annual household income between $20,000 and $39,999, followed by $40,000 to $59,000 (15%), $60,000 to $79,999 (15%), and $80,000 to $99,999 (11%). Less than ten percent of respondents reported total annual household incomes less than $20,000 (7%), $100,000 to $119,999 (8%), $120,000 to $139,999 (5%), $140,000 to $159,999 (3%), and $160,000 or more (4%). Ten percent of respondents were unsure of their total annual household income.

Table 25. *Current Financial Concerns*

	(%)
"Not having enough money for retirement"	41
"Being able to maintain the standard of living I enjoy"	32
"Being able to pay medical costs of a serious illness or accident"	30
"Being able to pay medical costs for normal healthcare"	28
"Not having enough to pay my normal monthly bills"	20
"Not being able to pay my rent, mortgage, or other housing costs"	16
"Not having enough money to pay for my children's college"	15
"Not being able to make the minimum payments on my credit cards"	11
"None of the above"	33

Forty-one percent of respondents identified "Not having enough money for retirement" as a current financial concern (Table 25). Approximately one-third of respondents also reported "Being able to maintain the standard of living I enjoy" (32%), "Being able to pay medical costs of a serious illness or accident" (30%), and "Being able to pay medical costs for normal healthcare" (28%). Additional financial concerns included "Not having enough to pay my normal monthly bills" (20%), "Not being able to pay my rent, mortgage, or other housing costs" (16%), "Not having enough money to pay for my children's college" (15%), and "Not being able to make the minimum payments on my credit cards" (11%). Thirty-three percent of respondents did not have any of the aforementioned financial concerns.

Table 26. *Current Financial Ability to Afford Food*

	(%)
"I couldn't afford to eat balanced meals"	10
"I cut the size of my meals or skipped meals because there wasn't enough money for food"	8
"The food that I bought just didn't last, and I didn't have money to get more"	7
"I was hungry but didn't eat because there wasn't enough money for food"	5
"I ate less than I felt I should because there wasn't enough money for food"	4
"None of the above"	86

More than three-quarters of respondents (86%) reported no financial concerns regarding the ability to afford food (Table 26). Among those respondents indicating some financial inability to afford food, 10% could not afford to eat balanced meals. Less than ten percent reported cutting meal sizes or skipping meals (8%), buying food that didn't seem to last (7%), not eating because there was not enough money for food (5%), or eating less than they should because there was not enough money for food (4%).

Housing and Neighborhood Characteristics

Table 27. *Political Subdivision*

	(%)
Mentor City	20
Painesville City	11
Concord Township	10
Eastlake City	8
Madison Township	8
Painesville Township	8
Willoughby City	7
Willowick City	6
Kirtland City	4
Wickliffe City	4
Perry Township	3
Mentor-on-the-Lake	3
Willoughby Hills	2
Fairport Harbor	2
Leroy Township	2
Madison Village	2
North Perry Village	1
Perry Village	1
Kirtland Hills	<1
Grand River Village	<1
Timberlake Village	<1
Waite Hill Village	<1
Lakeline Village	0

Figure 126. *Length of Time in Current Neighborhood*
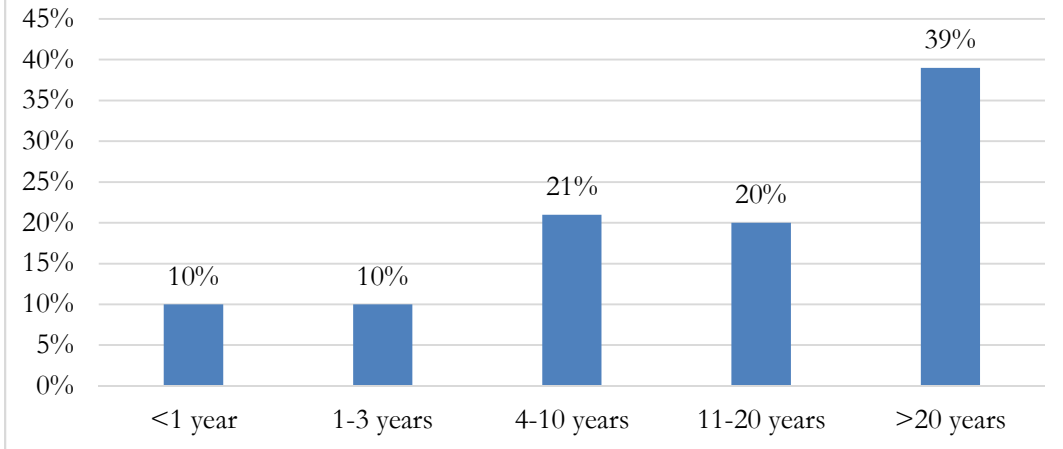
More than one-third of respondents (39%) reported having been in their current neighborhood for longer than 20 years (Figure 126). Ten percent of respondents have been in their current neighborhood for less than one year, while 10% had been in their current neighborhood for one to three years, as well as four to ten years (21%), and 11 to 20 years (20%).

Table 28. *Housing Type*

	(%)
"House"	86
"Apartment or flat"	9
"Condominium/townhome"	3
"Manufactured/mobile home"	1
"Other"	0.4

*Does not equal 100% due to rounding.

The majority of respondents (86%) characterized their current residence as a house (Table 28). Less than ten percent of respondents reported living in an "Apartment of flat" (9%), "Condominium/townhome" (3%), or "Manufactured/mobile home" (1%); less than one percent (0.4%) indicated "Other" (Table 28).

Figure 127. *Buildings Within a Block and a Half of Current Residence*
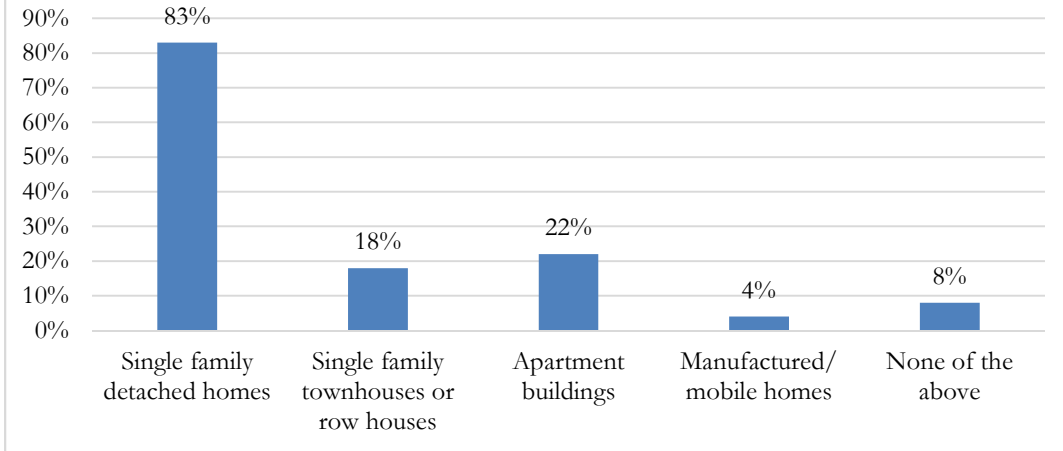
Respondents identified a variety of buildings within a block and a half from their current residence, and these buildings were predominately "Single family detached homes" (83%), "Apartment buildings" (22%), and "Single family townhouses or row houses" (18%; Figure 127). Less than five percent of respondents indicated their current residence was within a block and a half from "Manufactured/mobile homes" (4%); 8% indicated "None of the above".

Figure 128. *Household Size*
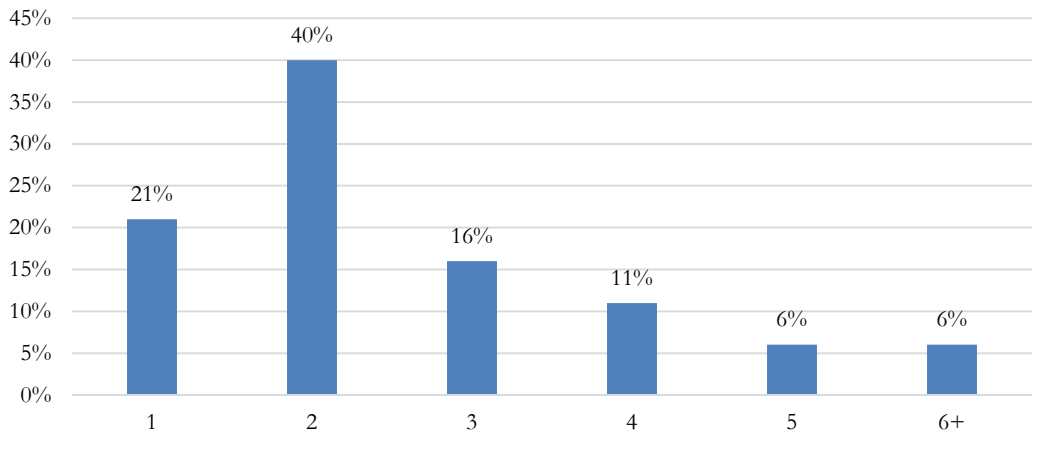
Less than one-half of respondents (40%) reported a total household size of two members, while approximately one-fifth (21%) indicated a household size of one (Figure 128). Sixteen percent of respondents reported a household size of three members, and 11% reported four members, 6% reported five members, and 6% reported six or more (Figure 128).

Figure 129. *Number of Household Members Under the Age of 18*

*Does not equal 100% due to rounding.
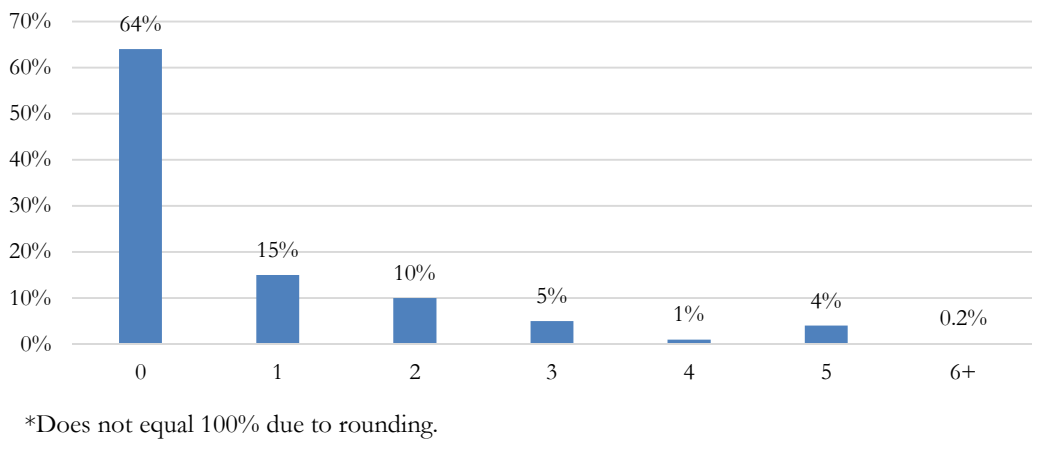
More than one-half of respondents (64%) did not currently have a household member under the age of 18 (Figure 129). Less than one-fifth had one (15%), two (10%), three (5%), four (1%), five (4%), or six or more (0.2%) household members under the age of 18 (Figure 129).

Table 29. *Relationships of Individuals Living in the Household*

	(%)
"Opposite-sex husband/wife/spouse"	54
"Biological son or daughter"	28
"Opposite-sex unmarried partner"	7
"Father or mother"	5
"Brother or sister"	4
"Nonrelative"	4
"Grandchild"	3
"Stepson or stepdaughter"	2
"Other relative"	2
"Housemate/roommate"	1
"Same-sex husband/wife/spouse"	1
"Adopted son or daughter"	1
"Parent-in-law"	<1
"Son-in-law or daughter-in-law"	<1
"Same-sex unmarried partner"	<1
"Roomer/boarder"	<1
"Foster child"	0

The majority of respondents (82%) reported currently living with an "Opposite-sex husband/wife/spouse" (54%) and/or "Biological son or daughter" (28%; Table 29). Less than ten percent currently lived with an "Opposite-sex unmarried partner" (7%), "Father or mother" (5%), "Brother or sister" (4%), "Nonrelative" (4%), "Grandchild" (3%), "Stepson or stepdaughter" (2%), "Other relative" (2%), "Housemate/roommate" (1%), "Same-sex husband/wife/spouse" (1%), or "Adopted son or daughter" (1%). Less than one percent of respondents indicated that a "Parent-in-law" (0.3%), "Son-in-law or daughter-in-law" (0.3%), "Same-sex unmarried partner" (0.2%), or "Roomer/boarder" (0.2%) were currently living in their household, and no respondents reported the presence of a "Foster child" in their household.

Transportation

Table 30. *Usual Method of Transportation to Purchase Groceries*

	(%)
"In my car"	91
"Walk"	4
"In a car that belongs to someone I live with"	3
"In a car that belongs to someone who lives elsewhere"	1
"Taxi or other paid driver"	0.2
"Someone else delivers groceries"	0.2
"No usual mode of traveling to store"	0.1
"Bus, subway, or other public transit"	0.1
"Ride bicycle"	0
"Other"	1

*Does not equal 100% due to rounding.

Usual method of transportation to purchase groceries (Table 30) was largely characterized by respondents as "In my car" (91%). Less than five percent of respondents reported their usual method of transportation to purchase groceries as walking (4%), "In a car that belongs to someone I live with" (3%), "In a car that belongs to someone who lives elsewhere" (1%), "Taxi or other paid driver" (0.2%), "Someone else delivers groceries" (0.2%), "No usual mode of traveling to store" (0.1%), "Bus, subway, or other public transit" (0.1%), or "Other" (1%); no respondents indicated that they ride a bicycle to purchase groceries.

Figure 130. *Number of Vehicles Available to Household Members*

Number of Vehicles	Percentage
0	1%
1	32%
2	46%
3	14%
4	5%
5	1%
6+	0.2%

*Does not equal 100% due to rounding.
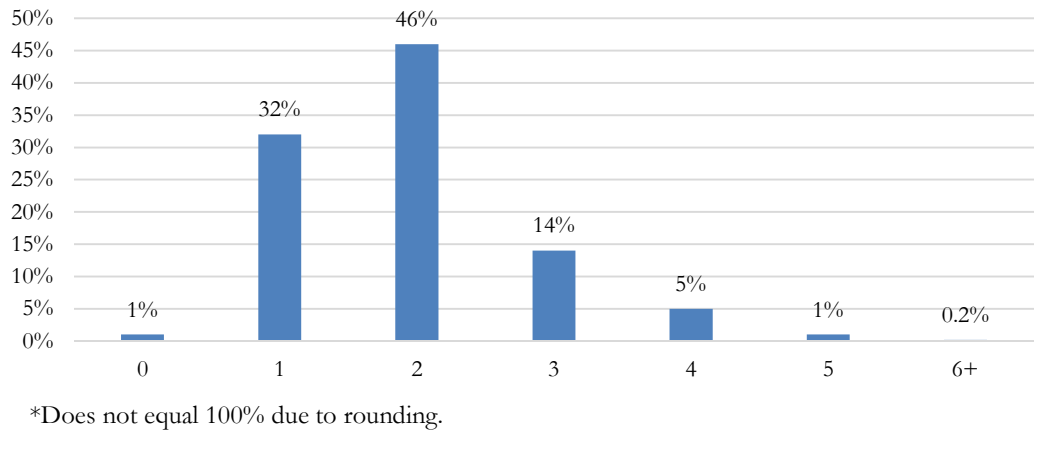
More than two-thirds of respondents (78%) reported having one (32%) or two (46%) vehicles available to household members (Figure 130). Approximately one-fifth of respondents reported having three (14%), four (5%), five (1%), or six or more (0.2%) vehicles available to household members.

3.3 Community Leader Survey

3.3.1 Overview

A total of 15 responses were received from the community leader survey, representing a response rate of 38%, and respondents consisted of organization or agency leaders (53%) and elected officials (47%). Consistent with the community resident survey, community leaders were asked to list the top three health problems in Lake County in a qualitative, open-ended format. When organized in order of importance (first through third) and response frequency, community leader respondents identified the following as top health problems in Lake County:

1. Drug abuse and overdose

2. Mental health

3. Obesity

Community leader respondents also identified several contributing factors to the aforementioned health problems, which included the following:

i.   Lifestyle choices

ii.   Poverty

iii.   Access and affordability of healthcare

iv.   Drug addiction

v.   The pace of today's society

vi.   Politics

3.3.2 Community Health Concerns

Based upon the benchmarking methodology used to rank the secondary data presented in

Section 3.1, and the categorization of measures unfavorable to four or more benchmarks as county-

specific health disparities, as outlined in Section 3.1.6, community leader respondents were provided

a list of the secondary measures unfavorable to four or more benchmarks accompanied by the

following question: "Do you think any of the following are health concerns in Lake County? (Select

all that apply)" (Table 31).

Table 31. *Community Health Concerns Identified in the Community Leader Survey*

	(%)
Drug overdose deaths	100
Preventable teen deaths	53
High blood pressure	47
Heart disease	47
Preventable hospitalizations	40
Alzheimer's disease	33
Limited access to healthy foods	33
Alcohol-related deaths	20
Alcohol-related driving deaths	13
Fast food restaurant density	13
Fall deaths	7

Table 32. *"Based upon the health problems you identified, what do you think Lake Health can do to help address these problems?"*

"Specific information and programs"

"Partner with nonprofit agencies offering services to fund; provide resources and help

"Build on federal and state Rx guidelines to ensure doctors aren't adding to the issue"

"More actively promote lifestyle changes, such as walking, or alternatives to cars"

"Education, and provide free resources"

"Educate, initiate new programs specific to the need, build on medical home models, (and) reduce readmissions"

"Partner with non-medical facilities to drive health initiatives deeper into all aspects of the

"Increase awareness and research possible solutions"

"More education and communication"

"Address the social determinants of health"

"Keep setting forth the facts and the science"

Table 33. *"Based upon the health problems you identified, what do you think Lake County General Health District can do to help address these problems?"*

"Attend council meetings and present available programs"

"Help communicate to the community what resources are available"

"More treatment programs aside from just moving (individuals) from one drug to the next

"More actively promote lifestyle changes"

"Start the conversation and provide resources"

"Continue with improvement collaboratives, create roadshows to educate the community, and partner with key stakeholders"

"Continue to be a resource for non-medical agencies to help drive health initiatives into all aspects of the community"

"Provide or direct social services to assist in the drug and alcohol epidemic"

"Work with hospitals (and) doctors to educate the public"

"Champion smoking cessation and obesity prevention"

"Keep setting forth the facts and the science"

Table 34. *"Based upon the health problems you identified, what do you think your agency/municipality can do to help address these problems?"*

"We can have town hall meetings to share information"

"We respond to overdoses in parks and prohibit illegal activity, including drug use in the parks"

"We fund programs to close service gaps"

"Education on available programs"

"Better connect the dots between the physical and mental health improvements gained by using public transportation"

"Location for conversation"

"Continue to partner with both Lake Health and the Health District, and be a resource for the aging population"

"Collaborate effectively with non-medical and medical-based providers to help drive health initiatives in the community"

"Work with all agencies and support groups to combat the issues"

"Communication"

"Offer smoking cessation, obesity counseling, (and) help impact (the) social determinants of health"

3.4 Community Resident Focus Groups

3.4.1 Overview

A total of 43 Lake County community residents participated across the five focus groups, and participation was characterized by the following totals:

i. Madison Senior Center, *9 participants*

ii. Lake Health LiveHealthy Fitness Center, *13 participants*

iii. Elm Street Elementary School, *6 participants*

iv. Morse Avenue Community Center, *6 participants*

v. Wickliffe Senior Center, *9 participants*

Focus group participants were predominately female (74%), married (54%), Caucasian (74%), between 60 and 74 years of age (51%), English-speaking (91%), currently had health insurance (98%), reported a total annual household income of $20,000 to $59,999 (53%), and characterized their health as "Good" (40%) and "Very good" (26%). Focus group participants predominately resided in Painesville City (21%), Wickliffe City (17%), or Mentor City (14%), indicated one to two people were living in their home (61%), and did not have individuals under the age of 18 living in their home (69%). The majority of focus group participants reported their highest level of education as "Some college, no degree" (33%) or "Bachelor's degree" (21%). Seven percent of focus group participants were African American, and 26% were Hispanic or Latino.

3.4.2 Community Health Concerns

Based upon the benchmarking methodology used to rank the secondary data presented in Section 3.1, and the categorization of measures unfavorable to four or more benchmarks as county-specific health disparities, as outlined in Section 3.1.6, focus group participants were provided a list of the secondary measures unfavorable to four or more benchmarks accompanied by the following question: "Do you think any of the following are health concerns in Lake County? (Select all that apply)" (Table 35).

Table 35. *Community Health Concerns Identified in the Community Focus Groups*

	(%)
Drug overdose deaths	72
Alcohol-related driving deaths	54
High blood pressure	54
Heart disease	49
Preventable teen deaths	47
Alzheimer's Disease	40
Fast food restaurant density	40
Preventable hospitalizations	33
Alcohol-related deaths	33
Limited access to healthy foods	28
Fall deaths	23

Table 36. *"What do you think are the greatest health problems in Lake County?"*

	(%)
Drug abuse and overdose death	32
Limited access to healthy foods	15
Obesity	12
Alcohol abuse	7
Aging population	5
Lack of transportation	5
Mental illness	5
Access to care	5
Alzheimer's Disease	2
High blood pressure	2
Diabetes	2
Prescription drug costs	2
Lack of health literacy	2
Poor dental hygiene	2

With respect to the greatest health problems in Lake County (Table 36), considerable variation was observed when focus group participants were asked "How would you rank these health problems in Lake County?" As such, health problems identified by focus group participants were included for the purposes of this report and accompanied by exemplary quotations, but were not ranked.

i. Access to care

    a. "I think what we need is a regional system. All the hospitals are branching out, and Lake Tran is specific to Lake County. Even if a three to four county transportation systems got together and made a special entity that provided transportation for medical purposes, that would solve a lot of problems".

b. "And I think (healthcare) access, because at the schools, we have so many absences, constantly we get calls, and kids are interpreting for their parents. These little kids shouldn't know the gynecological functioning of their mothers at 8 years old, or have to tell their uncle, hey, you're getting your toes amputated today because you have gangrene. To me, that's unacceptable. Title VI says interpreters need to be provided. Even if you can't do that, or you could have someone by phone, or Google, or whatever, but quit taking the kids out of school to translate".

c. "…I work with a young lady, she's Puerto Rican, her grandfather had dementia, and he didn't recognize the family. He was cooking his dinner on the truck at one point. So they tried to get an appointment and they asked for an interpreter, and the secretary told them, 'Oh no, you have to bring your own'".

ii. Mental illness

a. "I've done some guardianship with the probate judge, and ended up getting a gentleman that was homeless, and the only reason that he ended up in probate court was because he had gotten sick. He had pneumonia, and then he ended up in the hospital, and they couldn't release him, so the probate court had to take over, and I ended up as a guardian. He had dementia, and he was just walking the streets for probably a year".

b. "…my son was diagnosed with schizophrenia. I was such in denial at the time; he was diagnosed when he was 18 years old, and I was in denial, like where the heck did this come from? But it's just fortunate that he had a mom, that I've seen the signs and that something was not quite right. And it was like night and day. But there's so many out there that don't have parents or someone, and they're walking around like loose cannons, and some of them really want that help".

iii.	Illicit drug use

a.	"…I think if you talk to any of our first responders they will tell you the drug and alcohol problems in our county are pretty bad. You know, you have kids that are putting hash marks on their arm when they are brought back from overdose. Our response and approach isn't right. I don't know if we have to be more severe, or more understanding, but let's face it, a slap on the wrist doesn't work".

iv.	Obesity

a.	"…I have a neighbor that lives behind me (and) has two kids, probably 12 and 7; they have swing sets, they have trampolines, they have swimming pools in the back yard, and when they moved in, I thought, Oh God, I'm going to hear kids screaming all the time, and I never see the kids outside".

b.	"I think the biggest problem is getting people to realize there is a problem. I have two granddaughters. One is 23, one is 14. The 23 year old is obese. She's now a diabetic. She doesn't realize what this is going to do later on down the line".

Table 37. *"What factors do you think are contributing to these health problems?"*

	(%)
Increase in pre-packaged and convenience foods	23
Lack of school-based educational programming	23
Lack of parental boundaries	15
Lack of family encouragement and support	15
Economics	8
Lack of flexible employment conducive to family life	8
Automation	8

Table 38. *"Based on the health problems you identified, what do you think Lake Health can do to help address these problems?"*

	(%)
Publicize low cost prescription drug and patient assistance programs	31
Be mindful of racial and ethnic needs	15
Enhance information presented in the Lake Health magazine	15
Increase health disparity community education	8
Provide translation services at hospital and physician office locations	8
Provide youth health programming	8
Provide cooking education for mothers	8
Provide a clinical presence in Painesville City	8

*Does not equal 100% due to rounding.

Table 39. *"Based on the health problems you identified, what do you think Lake County General Health District can do to help address these problems?"*

	(%)
Promote organizational awareness among county residents	22
Be mindful of racial and ethnic needs	22
Provide pop-up clinics in Painesville City	11
Publicize exercise opportunities	11
Provide speakers to local community centers	11
Ensure school lunch nutritional quality	11
Identify insurance reimbursement options	11

*Does not equal 100% due to rounding.

4. Discussion

4.1 County-specific Health Concerns

Table 40. *Health Concerns Identified During the 2019 Lake County Community Health Needs Assessment*

Measure	Secondary Data	Resident Survey (Quantitative)	Resident Survey (Qualitative)	Community Leader Survey	Focus Group Survey	Focus Group Themes (Qualitative)
Access to care			✓			✓
Alcohol abuse			✓			✓
Alcohol-related deaths	✓	31%	✓	20%	33%	✓
Alcohol-related driving deaths	✓	47%	✓	13%	54%	✓
Alzheimer's disease	✓	27%	✓	33%	40%	✓
Diabetes		16%	✓			✓
Drug overdose deaths	✓	78%	✓	100%	72%	✓
Fall deaths	✓	11%	✓	7%	23%	✓
Fast food restaurant density	✓	34%	✓	13%	40%	✓
Heart disease	✓	42%	✓	47%	49%	✓
High blood pressure	✓	45%	✓	47%	54%	✓
Limited access to healthy foods	✓	26%	✓	33%	28%	✓
Mental health			✓			✓
Obesity		41%	✓			✓
Preventable hospitalizations	✓	29%	✓	40%	33%	✓
Preventable teen deaths	✓	43%	✓	53%	47%	✓

Several Lake County-specific health concerns were consistent across (1) secondary data benchmarking, (2) qualitative and (3) quantitative components of the community resident survey, the (4) community leader and (5) focus group surveys, and (6) focus group dialogue (Table 40), including:

i.	Alcohol-related deaths	vii.	Heart disease
ii.	Alcohol-related driving deaths	viii.	High blood pressure
iii.	Alzheimer's disease	ix.	Limited access to healthy foods
iv.	Drug overdose deaths	x.	Preventable hospitalizations
v.	Fall deaths	xi.	Preventable teen deaths
vi.	Fast food restaurant density		

Additionally, five health concerns that did not meet the benchmarking criteria identified in Section 2.2.2 were uniquely identified by way of the qualitative portions of the Lake County community resident survey and community resident focus groups (Table 40).

i.	Access to healthcare	iv.	Mental health
ii.	Alcohol abuse	v.	Obesity
iii.	Diabetes		

Moving forward, the aforementioned Lake County-specific health concerns should be utilized to inform evidence-based strategy selection, as part of community health improvement planning activities and strategies.

4.2 Evidence, Best Practices, and Community Resources

4.2.1 Access to Care

 While passage of the Affordable Care Act in 2014 led to nationally-improved health insurance coverage rates in both Medicaid expansion and non-expansion states (Courtemanche et al. 2018), access to healthcare is complex in nature, not defined solely by health insurance coverage, and is affected by several factors, such as but not limited to education, neighborhood and/or political subdivision, current employment status, transportation, race, ethnicity, and interpersonal support (Artiga and Hinton 2018). For example, African American and Hispanic individuals are less likely to have health insurance coverage (Richardson and Norris 2010), a regular source of care (CMS 2007) or regular primary care provider (HHS 2009), as compared to their Caucasian peers, and generally report poor communication with their healthcare provider (Richardson and Norris 2010).

 Consistent with national trends, disparities in access to care were observed among racial and ethnic minority respondents of the 2019 community health assessment survey. Of the respondents of the 2019 community health assessment survey whom identified as African American, 45% had received a routine checkup with their doctor in the past 12 months, as compared to 54% of Hispanic and 80% of Caucasian respondents, and more than one-half were unable to afford medical care (53%), eyeglasses (61%), dental care (69%), and/or mental health care or counseling (58%) in the past 12 months (Table 41). African American respondents were also less likely to have had a dental visit in the past 12 months (32%), and more likely to access routine or preventative care from a clinic or health center (65%), while Hispanic respondents were less likely to have health insurance coverage (59%), and travel outside of Lake County for routine or preventative care (21%; Table 41). Contrary to previous findings (HHS 2009), nearly all African American respondents identified a personal doctor (99%), as well as a personal dentist (87%), while subsequently reporting the lowest proportion of routine doctor and dentist checkups in the past 12 months (Table 41).

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Table 41. *Racial and Ethnic Disparities in Access to Care Among 2019 Lake County Community Health Assessment Survey Respondents*

	African American	Hispanic	Caucasian
Currently has a personal doctor or health care provider	99%	38%	90%
Currently has a personal dentist or dental care provider	87%	40%	79%
Visited a doctor for a routine checkup in the past 12 months	45%	54%	80%
Visited a dentist for a routine checkup in the past 12 months	32%	42%	71%
Unable to afford prescription medicines in the past 12 months	5%	15%	10%
Unable to afford medical care in the past 12 months	53%	5%	9%
Unable to afford eyeglasses in the past 12 months	61%	23%	12%
Unable to afford dental care in the past 12 months	69%	15%	16%
Unable to afford mental health care or counseling in the past 12 months	58%	13%	6%
Obtained routine or preventative care from a clinic or health center	65%	51%	9%
Obtained routine or preventative care from a doctor's office or HMO	35%	29%	87%
Currently has health insurance coverage	92%	59%	96%
Traveling out of Lake County for routine or preventative care	17%	21%	4%

While access to care was not identified by way of the secondary data benchmarking methodology outlined in Section 2.2.2, respondents of the 2019 community health assessment survey, as well as participants of the 2019 community health assessment focus groups, identified access to care as a health concern in Lake County.

The efficacy of the following approaches to reduce access to care have been well documented.

i. Enhanced transportation opportunities for uninsured and low income populations (Syed et al. 2013)

ii. Expanded healthcare payment and safety net service options for undocumented immigrant populations (Hacker et al. 2015)

iii. Medicaid healthcare delivery and payment reform (Artiga and Hinton 2018)

    a. Coordinated care and regional collaborative organizations

    b. Delivery system reform incentive payments

iv. Community paramedicine (Choi et al. 2016)

v. Improved health literacy through community education (Levy and Janke 2016)

The following community assets are immediately applicable to access to care, and are available in Lake County.

i. Cleveland Clinic Family Health Center (physician offices and urgent care facility)

ii. Family Planning Association of Northeast Ohio

iii. Lake County Alcohol, Drug Addiction, and Mental Health Services Board (Compass Line)

iv. Lake County Council on Aging (benefit assistance)

v. Lake County General Health District (WIC, immunization clinics)

vi. Lake County Job and Family Services

vii. Lake County Free Clinic

viii. Lake Health (hospitals, physicians, urgent care facilities)

ix. Laketran

x. Lifeline

xi. Painesville Family Resource Center

xii.   Signature Health (Federally Qualified Health Center)

xiii.   United Way of Lake County

xiv.   University Hospitals (physician offices, urgent care facilities)

xv.   Pharmacy walk-in clinics (CVS, Rite Aid, Walgreens)

xvi.   Wickliffe Family Resource Center

4.2.2 Alcohol Abuse

Alcohol abuse is associated with a number of poor health outcomes, including but not limited to major depression (Fergusson et al. 2009), suicidal behavior (Pompili et al. 2010), anxiety (Smith and Book 2010), and illicit substance use among adolescents (Swendsen et al. 2012) and the general population (Schuckit 2009), as well as insomnia, heart disease, stroke, cancer, liver cirrhosis, amnesia and/or temporary cognitive deficits, peripheral neuropathy, decreased bone density, and low blood cell count (Schuckit 2009). Adverse childhood events prior to 18 years of age have also been linked to alcohol misuse in adults, especially among females (Crouch et al. 2018).

Moreover, recent evidence from the United Kingdom's Department of Health suggest that there is no safe level of alcohol consumption (DOH 2016), and these findings have been supported by further systematic review (Burton and Sheron 2018). Nationally, alcohol overdose hospitalizations increased 26% from 1998 to 2014, and alcohol/opioid combination overdose hospitalizations increased 197% during the same period (Hingson et al. 2017).

Nineteen percent of Ohioans and approximately 18% of Lake County residents 18 years of age or older reported binge or heavy drinking in the past 30 days (County Health Rankings 2019). While alcohol abuse was not identified by way of the secondary data benchmarking methodology outlined in Section 2.2.2, respondents of the 2019 community health assessment survey, as well as participants of the 2019 community health assessment focus groups, identified alcohol abuse as a health concern in Lake County.

Among those respondents of the 2019 community resident survey indicating they had participated in binge or heavy drinking in the past 30 days, the majority were Caucasian (93%), not Hispanic or Latino (96%), male (59%), 55 to 59 years of age (18%), married (67%), had a Bachelor's degree or higher (32%), reported a total annual household income of $20,000 to $39,999 (26%), and were currently employed (74%).

Characteristics of 2019 community resident survey respondents associated with increased reporting of binge or heavy drinking in the past 30 days included being male (Figure 76), less than 30 years of age (Figure 76), and/or having less than a high school education (Figure 77). More than one-third (40%) of Caucasian males and 20% of Hispanic males reported binge drinking at least once in the past 30 days, while African American male respondents did not report binge drinking in the past 30 days. Fourteen percent of respondents who participated in binge or heavy drinking reported a frequency of ten or more times in the past 30 days, while 11% of those who reported binge drinking one or more times in the past 30 days drove when they had too much to drink, 19% were current cigarette smokers, 11% currently used e-cigarettes, and 13% characterized their overall health as "Fair" or "Poor". In accordance with the aforementioned findings from Crouch and colleagues (2018), adverse childhood event experiences were higher in female respondents than male respondents whom reported binge drinking in the past 30 days (Table 42).

Table 42. *Adverse Childhood Events by Sex Among 2019 Lake County Community Health Assessment Survey Respondents Who Reported Binge Drinking in the Past 30 Days*

	Male	Female
"You lived with someone who was depressed, mentally ill, or suicidal"	8%	22%
"You lived with someone who was a problem drinker or alcoholic"	17%	29%
"You lived with someone who used illegal street drugs or who abused prescription medications"	3%	12%
"You lived with someone who served time or was sentenced to serve time in a prison, jail, or other correctional facility"	3%	8%
"Your parents were divorced or separated"	19%	26%
"Your parents or adults in your home slapped, hit, kicked, punched, or beat each other up"	2%	7%
"A parent or adult in your home hit, beat, kicked, or physically hurt you in any way (not including spanking)"	7%	13%
"A parent or adult in your home swore at you, insulted you, or put you down"	10%	27%
"Someone at least 5 years older than you or an adult touched you sexually"	1%	19%
"Someone at least 5 years older than you or an adult tried to make you touch sexually"	1%	9%
"Someone at least 5 years older than you or an adult forced you to have sex"	0%	7%

The efficacy of the following approaches to reduce alcohol abuse have been well documented.

 i. Increased alcohol taxes (Wagenaar et al. 2009)

 ii. Alcohol outlet density regulation (Campbell et al. 2009)

 iii. Electronic screening and brief intervention, or e-SBI (Kypri et al. 2008)

 iv. Screening, Brief Intervention, and Referral to Treatment, or SBIRT (Madras et al. 2009)

 v. Enhanced enforcement of alcohol sale laws to individuals under 21 years of age (McCartt et al. 2010)

 vi. Limits on alcohol sale hours and days (Popova et al. 2009)

 vii. Dram shop liability laws (Rammohan et al. 2011)

  The following community assets are immediately applicable to alcohol abuse, and are available in Lake County.

 i. Alcoholics Anonymous

 ii. Crossroads Health

 iii. Faith-based community

 iv. Lake County Alcohol, Drug Addiction, and Mental Health Services Board

 v. Lake County Business Community (Chamber of Commerce, networking groups)

 vi. Lake County Sheriff's Office (jail treatment program)

 vii. Lake-Geauga Recovery Centers

 viii. Mothers Against Drunk Driving

 ix. Physician offices

 x. Public and private school programming

 xi. Signature Health

 xii. Windsor-Laurelwood Center for Behavioral Health

4.2.3 Alcohol-related Deaths

In 2010 alone, 493,300 global deaths and a loss of nearly 15 million disability adjusted life years (DALYs) were attributed to alcohol, incurring substantial societal and economic costs (Richardson and Singal 2019). Net alcohol-related premature death in the United States has been attributed to nearly 19% of all deaths among adults 20 to 49 years of age, 27% of adults 35 to 49 years of age, and approximately 34% of adults 50 to 64 years of age, as incurred during transportation, or by way of violence, neurological, alcohol toxicity, injury, gastrointestinal, cardiovascular, and/or cancer-related causes, respectively (Naimi et al. 2019). Nationally, approximately 2.3 million years of life were lost to an alcohol-related death among individuals 20 years of age and older, between 2006 and 2010 (Naimi et al. 2019).

According to CDC WONDER, Lake County's rate of alcohol-related death (10.5 per 100,000) was higher than both the current national (9.5 per 100,000) and Ohio (8.6 per 100,000) rates, as well as both included comparison counties' rates, as identified in Section 3.1.6 (CDC 2019b). Twenty percent of Lake County community leaders identified alcohol-related deaths as a health concern in Lake County. According to those that responded to the 2019 community health assessment survey, 31% identified alcohol-related death as a health concern in Lake County, and these respondents were predominately Caucasian (94%), not Hispanic or Latino (97%), female (55%), had some college or an Associate's degree (35%), reported a total annual household income of $20,000 to $39,999 (26%), consumed an alcoholic beverage(s) one (15%) to two (13%) days per week during the past 30 days, and characterized their overall health as "Good" (47%). Approximately one-third (35%) of respondents reported binge drinking on one or more occasion in the past 30 days, and 25% had lived with a problem drinker or alcoholic prior to 18 years of age. The prevalence of having lived with a problem drinker or alcoholic prior to 18 years of age was

highest among Hispanic respondents (34%), followed by Caucasian (25%) and African American respondents (16%), and greater among females (29%) than males (21%).

As alcohol-related deaths are directly attributable to alcohol use and abuse, best practice approaches and community assets identified in the sections previous (4.2.3) and following (4.2.4) should be referenced.

4.2.4 Alcohol-related Driving Deaths

Alcohol-related driving is the leading cause of traffic deaths in the United States, and roughly 30% of traffic deaths involve drivers with blood alcohol concentrations above the respective state limit (Teutsch and Naimi 2018). With approximately 100 traffic deaths per day attributed to alcohol, the National Highway Traffic Safety Administration utilizes a three-prong approach consisting of robust alcohol laws, high visibility enforcement, and education, in order to decrease alcohol-related traffic deaths and increase traffic safety (Rosekind 2018). In Ohio, a total of 12,243 alcohol-related crashes occurred in 2016, and resulted in 346 alcohol-related driving deaths among residents 0 to 75 years of age (Counties 2017). In Lake County, 38% of driving deaths are alcohol-related (Network of Care 2016).

Less than one in five Lake County community leaders (13%) identified alcohol-related driving deaths as a health concern in Lake County. According to those that responded to the 2019 community health assessment survey, 47% of respondents identified alcohol-related driving deaths as a health concern in Lake County, and these respondents were predominately Caucasian (96%), not Hispanic or Latino (96%), female (53%), 55 to 59 years of age (11%), were a high school graduate, or had a GED equivalent (32%), reported a total annual household income of $20,000 to $39,999 (29%), did not drink alcohol in the past 30 days (52%), and characterized their overall health as "Good" (43%). Approximately one-third of survey respondents (28%) had lived with a problem

drinker or alcoholic prior to 18 years of age, and 5% of respondents indicated that they had driven when they had too much to drink in the past 30 days.

The efficacy of the following approaches to reduce alcohol-related driving deaths have been well documented.

   i.   School-based educational programming (Steinka-Fry et al. 2015)

  ii.   Community media and enforcement campaigns (Shults et al. 2009)

 iii.   Laws addressing blood alcohol concentration, or BAC (Anderson et al. 2009)

 iv.   Vehicle ignition interlock systems (Task Force on Community Preventative Services 2011)

  v.   Minimum legal drinking age laws (Fell et al. 2009)

 vi.   Sobriety checkpoint programs (Bergen et al. 2014)

 vii.   Dram shop liability laws (Rammohan et al. 2011)

viii.   Enhanced enforcement of alcohol sale laws to individuals under 21 years of age (McCartt et al. 2010)

 ix.   Increased alcohol taxes (Elder et al. 2010)

  x.   Limits on alcohol sale hours and days (Popova et al. 2009)

 xi.   Alcohol outlet density regulation (Campbell et al. 2009)

 xii.   Electronic screening and brief intervention, or e-SBI (Kypri et al. 2008)

xiii.   Primary and secondary seat belt laws (Chang et al. 2012)

xiv.   Child safety seat utilization (Rice and Anderson 2009) and legislation (Brubacher et al. 2016)

 xv.   Child safety seat distribution and educational programming (Keay et al. 2012)

xvi.   Motorcycle helmet laws (Dellinger and Sleet 2010)

The following community assets are immediately applicable to alcohol-related driving deaths, and are available in Lake County.

i. Alcoholics Anonymous

ii. Crossroads Health

iii. Faith-based community

iv. Lake County Alcohol, Drug Addiction, and Mental Health Services Board

v. Lake County Business Community (Chamber of Commerce, networking groups)

vi. Lake County Sheriff's Office (jail treatment program)

vii. Lake-Geauga Recovery Centers

viii. Mothers Against Drunk Driving

ix. Physician offices

x. Public and private school programming

xi. Signature Health

xii. Windsor-Laurelwood Center for Behavioral Health

4.2.5 Alzheimer's Disease

The global burden of Alzheimer's disease has more than doubled during the past 30 years, increasing from 20.2 million in 1990 to 43.8 million in 2016, accounting for a loss of nearly 29 million DALYs, and representing the fifth leading cause of death (Nichols et al. 2019). Nationally, there are 3.7 million clinically diagnosed cases of Alzheimer's disease, and approximately 42% are late stage, the latter of which require full-time care (Brookmeyer et al. 2018). Alzheimer's disease is most prevalent among African American and Hispanic females 85 years of age and older (Matthews et al. 2018), and deaths attributed to Alzheimer's disease increased 123% between 2000 and 2015 (Alzheimer's Association 2018).

Approximately 11% of Medicare beneficiaries in Lake County currently have Alzheimer's disease, the latter of which was higher than national (10%), state (10%), and comparison county values (9%; CMS 2015), and approximately one-third of Lake County community leaders (33%), and 27% of 2019 community health assessment survey respondents identified Alzheimer's disease as a health concern in Lake County. Community health assessment survey respondents who identified Alzheimer's disease as a health concern in Lake County were predominately Caucasian (92%), not Hispanic or Latino (99%), female (54%), 55 to 74 years of age (52%), had some college or an Associate's degree (33%), reported a total annual household income of $20,000 to $39,999 (27%), and characterized their overall health as "Good" (42%); less than 1% of respondents identifying Alzheimer's disease as a health concern in Lake County had been previously diagnosed with Alzheimer's disease.

While there is currently no cure or disease-modifying therapy for Alzheimer's disease (Rainer and Mucke 2019), the effectiveness of the following approaches to manage Alzheimer's disease have been well documented.

i. Behavioral intervention (Spears 2018)

ii. Medication management (Atri 2019)

    a. Cholinesterase and acetylcholinesterase inhibitors

    b. Memantime

    c. Vitamin E

The following community assets are immediately applicable to Alzheimer's disease, and are available in Lake County.

i. Alzheimer's Association, Cleveland Chapter

ii. Lake County Alcohol, Drug Addiction, and Mental Health Services Board

iii. Lake County Commissioner's Office (senior services program)

iv. Lake County Council on Aging

v. Lake County senior centers

vi. Lake Health (geriatric assessment program)

vii. Lake Health (geriatric psychiatry)

viii. Physician offices

ix. Specialized long-term care facilities

4.2.6 Diabetes

The global prevalence of diabetes is estimated to increase from 415 million (1 in 11 adults) in 2015 to approximately 642 million (1 in 10 adults) in 2040 (Bommer et al. 2018). Nationally, 23 million adults have been diagnosed with diabetes (Bullard et al. 2018), and in 2017 alone, diabetes accounted for $237 billion in direct healthcare costs, and approximately $90 billion in lost productivity (ADA 2018). Upwards of 75% of those with diabetes also have hypertension, and are at an increased risk for coronary artery disease, heart attack, heart failure, and vascular disease, as well as retinopathy, nephropathy, and neuropathy (Long and Dagogo-Jack 2011). Moreover, individuals with diabetes are at an increased risk for cancer (Giovannucci et al. 2010).

In Ohio, 10% of adults 20 years of age and older have been diagnosed with diabetes, while 9% of Lake County adults 20 years of age and older have been diagnosed with diabetes (Community Commons 2015a). While diabetes was not identified by way of the secondary data benchmarking methodology outlined in Section 2.2.2, respondents of the 2019 community health assessment survey, as well as participants of the 2019 community health assessment focus groups, identified diabetes as a health concern in Lake County. Of those that completed the 2019 community health assessment, 16% indicated that they had been previously diagnosed with diabetes. Diabetes prevalence was higher among male than female respondents, was highest among Caucasian respondents, and increased with advancing age (Table 43).

Table 43. *Demographic Characteristics of 2019 Lake County Community Health Assessment Survey Respondents Previously Diagnosed with Diabetes*

	(%)
Sex	
Male	23
Female	9
Race/Ethnicity	
African American	12
Caucasian	17
Hispanic or Latino	4
Age	
19 to 29	2
30 to 39	5
40 to 49	5
50 to 59	14
60 to 69	23
70 to 79	21
80 and older	37
Education	
12th grade or less, no diploma	___
High school graduate or GED equivalent	24
Some college or Associate's degree	___
Bachelor's degree or higher	12

The efficacy of the following approaches to reduce and/or manage diabetes (and gestational diabetes) have been well documented.

i. Combination of a healthy diet and physical activity (ADA 2010)

ii. Multidisciplinary team-based medical care (Tricco et al. 2012)

iii. Community health worker education, coaching, and/or social support (Kane et al. 2016)

iv. Lifestyle interventions delivered before the 15th gestational week of pregnancy (Song et al. 2016)

The following community assets are immediately applicable to diabetes and pre-diabetes, and are available in Lake County.

i. Community gardens

ii. Faith-based community (parish nurse programs)

iii. Fitness centers

iv. Food pantries (Food Force, Madison Food Center, St. Gabriel's)

v. Lake County Council on Aging (Meals on Wheels, The Lunch Place, farmers' market program)

vi. Lake County Free Clinic

vii. Lake County Farmers' Markets (Willoughby, Painesville)

viii. Lake County General Health District (chronic disease self-management program, WIC)

ix. Lake County Job and Family Services (food assistance programs)

x. Lake County senior centers

xi. Lake Health (diabetes education services)

xii. Lake Metroparks

xiii. Municipal parks

xiv. Physician offices

xv. Public and private school programming

xvi. Signature Health

xvii. YMCA of Lake County (Diabetes Prevention Program)

4.2.7 Drug Overdose Deaths

Drug-related overdose deaths have increased 137% in the United States since 2000 (Rudd et al. 2016). Concurrently, overdose deaths due to opioid pain relievers, such as hydrocodone and oxycodone, as well as heroin, increased nearly 200% (Rudd et al. 2016). As of 2016, the emergence of illicit fentanyl has outpaced both heroin and opioid pain reliever deaths (Hedegaard et al. 2018), largely due to the fentanyl's high potency (Armenian et al. 2018), and adulteration in drugs such as heroin and cocaine (Spencer et al. 2019). In Ohio, the 2017 age-adjusted drug overdose deaths rate of 44.1 per 100,000 (ODH 2019) remains the second highest drug overdose death rate in the nation (Scholl et al. 2019), while the 2017 Lake County age-adjusted drug overdose death rate of 44.4 per 100,000 was higher than 55 other Ohio counties (ODH 2019). Between 2013 and 2017, Lake County residents disproportionately at-risk for drug overdose included single or divorced males, between 25 and 54 years of age, who were currently employed in a labor, maintenance, or trade occupation; and 66% of drug-related overdose deaths among this group were driven by an illicit substance, 53% of which contained fentanyl, or a fentanyl analogue (Nichols et al. 2018).

Drug overdose death was identified as a health concern by all of the participating Lake County community leaders (100%). More than three-quarters (78%) of 2019 community health assessment survey respondents identified drug overdose death as a health concern in Lake County, and these respondents were primarily Caucasian (94%), not Hispanic or Latino (96%), female (55%), 55 to 64 years of age (24%), had some college or an Associate's degree (34%), reported a total annual household income of $20,000 to $99,999 (65%), were currently employed (57%), and had lived in their current neighborhood for more than 20 years (42%). One percent of these respondents had abused illicit and/or prescription drugs in the past 30 days, and 7% had lived with someone who abused illicit or prescription drugs prior to 18 years of age.

The efficacy of the following approaches to reduce drug overdose deaths have been well documented.

    i.   Prescription drug monitoring programs (Patrick et al. 2016)

    ii.   Safe injection facilities (Marshall et al. 2011)

    iii.   Naloxone distribution programs (McDonald and Strang 2016)

    iv.   Medication-assisted treatment (Ma et al. 2018)

The following community assets are immediately applicable to drug overdose deaths, and are available in Lake County.

    i.   Crossroads Health

    ii.   Emergency medical services

    iii.   Faith-based community

    iv.   Lake County Alcohol, Drug Addiction, and Mental Health Services Board (Operation Resolve, Opiate Taskforce, Quick Response Team)

    v.   Lake County business community (chambers of commerce, networking groups)

    vi.   Lake County General Health District (Project DAWN, Project Opiate)

    vii.   Lake County judicial system (drug court, municipal courts)

    viii. Lake County Sheriff's Office (jail-based treatment program)

    ix.   Lake-Geauga Recovery Centers

    x.   Local law enforcement

    xi.   OARRS integration

    xii.   Ohio State Highway Patrol

    xiii. Physician offices

    xiv. Public and private school programming

xv.   Signature Health

xvi.   Windsor-Laurelwood Center for Behavioral Health

4.2.8 Fall Deaths

In the United States, unintentional falls are the leading cause of death among adults 65 years of age and older (Deprey et al. 2017), and risk for sustaining a fall increases with advancing age and previous fall history (Lohman et al. 2018), fear of falling (Finlayson and Peterson 2010), and neurological or cardiovascular disorder (Moylan and Binder 2007), as well as gait, balance, and visual impairment, cognitive decline, polypharmacy, and gender (Ambrose et al. 2013). Ethnicity is also associated with fall related-death, as older Hispanic adults are at a decreased of fall-related death as compared to their non-Hispanic peers (Landy et al. 2011). The national fall-related death rate among adults 65 years of age and older has increased linearly since 2007, and accounted for nearly 30,000 deaths in 2016 (Burns and Kakara 2018). Ohio has the 24th highest fall-related death rate in the nation for adults 65 years of age and older (Burns and Kakara 2018), and is characterized by an age-adjusted fall death rate of 10 per 100,000, while the Lake County age-adjusted fall death rate is upwards of 16 per 100,000 (CDC 2017e).

Seven percent of Lake County community leaders, and 11% of those that responded to the 2019 community health assessment survey identified fall deaths as a health concern in Lake County, respectively. Community health assessment survey respondents who identified fall deaths as a health concern in Lake County were predominately Caucasian (94%), not Hispanic or Latino (97%), female (57%), 50 to 79 years of age (68%), married (51%), were a high school graduate or had a GED equivalent (34%), reported a total annual household income of $20,000 to $39,999 (32%), and did not require assistance or special equipment during day-to-day activities (68%); 9% of the aforesaid respondents currently had a health problem that required the use of special equipment, such as a cane or wheelchair.

The efficacy of the following approaches to reduce fall-related deaths have been well documented (Kenny et al. 2011, Nichols 2018).

i.   Medication management

ii. Individualized exercise programs

iii. Vision screening and correction

iv. Neurological and cardiovascular management

v.   Vitamin D supplementation

vi. Foot and footwear consultation

vii. Home environment modification

viii. Fall prevention education

The following community assets are immediately applicable to fall deaths, and are available in Lake County.

i.   Lake County Commissioner's Office (senior services program)

ii. Lake County Council on Aging (health equipment lending program)

iii. Lake County General Health District (Matter of Balance)

iv. Lake County senior centers

v.   Lake Health (geriatric assessment program)

vi. Physician offices (podiatry, optometry, and ophthalmology)

vii. YMCA of Lake County

4.2.9 Fast Food Restaurant Density

Nationally, less than 20% of American diets meet healthy diet guidelines, as outlined by the United States Department of Agriculture (Krebs-Smith et al. 2010). This phenomenon is, in part, is due to the proliferation of fast food opportunities, the latter of which is associated with increasing total caloric, fat, sodium, and sugar intake (Fleischhacker et al. 2011). Fast food restaurant density, increasingly prevalent in low-income and ethnic minority areas (Fleischhacker et al. 2011), has been linked to unhealthy lifestyles, poor psychological and social behavior, and an increased risk of obesity among older adults (Li et al. 2009), and places a disproportionately negative effect on the health of households with low socioeconomic status. Moreover, adolescents with fast food restaurants in proximity (one-half of a mile) to their respective school consume fewer fruits and vegetables, illustrate increased soda intake, and are more overweight or obese than students whose school was not in proximity to a fast food restaurant (Davis and Carpenter 2009).

In Ohio, there are approximately 81 fast food restaurants per 100,000 population, while Lake County retains 82 fast food restaurants per 100,000 population, and both of these values eclipse the national average of 77 per 100,000 population (Community Commons 2016). Thirteen percent of Lake County community leaders identified fast food restaurant density as a health concern in Lake County. Of those that responded to the 2019 community health assessment survey, 34% identified fast food restaurant density as a health concern in Lake County, and these respondents were predominately Caucasian (93%), Not Hispanic or Latino (92%), female (56%), 55 to 59 years of age (14%), were a high school graduate or had a GED equivalent (31%), reported a total annual household income of $20,000 to $39,999 (24%), were currently obese (40%), ate fruits and vegetables seven days per week (50%), obtained at least one meal away from home in the past seven days (86%), and characterized their overall diet and health as "Good" (50% and 41%, respectively).

A clear link between respondent BMI and total meals obtained away from home was observed, as overweight and obese respondents obtained more prepared meals from restaurants, fast food, food stand, grocery store, or vending machine locations, as compared to their underweight and normal weight peers (Table 44).

Table 44. *Percentage of Meals Prepared Away From Home During the Past Seven Days and BMI of 2019 Lake County Community Health Assessment Survey Respondents*

BMI	Meals Prepared Away From Home During the Past Seven Days					
	0	1 to 3	4 to 6	7 to 9	10 to 12	13 or more
Underweight	62%	33%	5%	0%	0%	0%
Normal*	15%	71%	9%	3%	3%	0%
Overweight	14%	64%	14%	3%	3%	2%
Obese	8%	60%	19%	7%	2%	4%

*Does not equal 100% due to rounding.

No peer-reviewed strategies to reduce fast food restaurant density were identified.

The following community assets are immediately applicable to fast food restaurant density, and are available in Lake County.

i. Local government (city council, trustees, community planners)

4.2.10 Heart Disease

According to Sidney and colleagues (2016), and with the exception of the influenza pandemic of 1918 and 1919, heart disease has been the leading cause of death in the United States since 1910 (CDC 2019c), and is responsible for approximately 6 million hospitalizations and 800,000 deaths annually (Roger et al. 2012). Major risk factors for heart disease include high cholesterol, high blood pressure, smoking, and diabetes (Chambless et al. 1997). By 2030, nearly 41% of United States citizens are projected to have heart disease, and the aforesaid disease burden is expected to incur a total direct medical cost of $818 billion in 2030 alone (Heidenreich et al. 2011). In Ohio, 27% of the Medicare fee-for-service population currently has heart disease, while 28% of Lake County's Medicare fee-for-service population currently has heart disease (Community Commons 2015b).

Less than one-half of Lake County community leaders (47%) identified heart disease as a health concern in Lake County. Forty-two percent of 2019 community health assessment survey respondents identified heart disease as a health concern in Lake County, and these respondents were primarily Caucasian (91%), not Hispanic or Latino (96%), male (57%), 55 to 59 years of age (13%), married (57%), were a high school graduate or had a GED equivalent (29%), indicated a total annual household income of $20,000 to $39,999 (28%), described their overall diet and health as "Good" (46% and 44%, respectively), and were currently obese (43%). Less than one-quarter of these respondents had been diagnosed with diabetes (23%) and/or heart disease (15%), and 15% were current smokers.

Among those community health assessment survey respondents who indicated they had been previously diagnosed with heart disease, the majority were Caucasian (95%), Not Hispanic or Latino (99%), male (69%), 70 to 74 years of age (21%), were high school graduates or had a GED equivalent (41%), reported a total annual household income of $20,000 to $39,999 (39%), were

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married (66%), did not currently smoke cigarettes (84%) or use electronic cigarettes (85%), had at least one alcoholic beverage per week during the past 30 days (51%), were currently obese (34%), obtained one to three meals away from home in the past seven days (65%), and were physically active for at least 60 minutes on at least one day in the past seven days (62%). More than three-quarters of those previously diagnosed with heart disease had been to the doctor for a routine check-up in the past 12 months (97%), and had also been previously diagnosed with high blood pressure (79%), high cholesterol (61%), and/or diabetes (40%). When accounting for all respondents with respect to race and ethnicity, 10% of Caucasian respondents had been previously diagnosed with heart disease, as compared to 3% of African American respondents, and 2% of Hispanic or Latino respondents (Table 45). Moreover, the percentage of male respondents previously diagnosed with heart disease (12%) was twice that of female respondents (6%).

Table 45. *Demographic Characteristics of 2019 Lake County Community Health Assessment Survey Respondents Previously Diagnosed with Heart Disease*

	(%)
Sex	
Male	12
Female	6
Race/Ethnicity	
African American	3
Caucasian	10
Hispanic or Latino	2
Age	
19 to 29	1
30 to 39	0
40 to 49	1
50 to 59	6
60 to 69	14
70 to 79	25
80 and older	14
Education	
12th grade or less, no diploma	5
High school graduate or GED equivalent	13
Some college or Associate's degree	10
Bachelor's degree or higher	6

The efficacy of the following approaches to reduce heart disease have been well documented.

i. Team-based clinical, pharmacology, paramedic, community health, and nutritional care, in order to improve high blood pressure control (Dehmer et al. 2016)

ii. Collaborative practice agreements between healthcare providers and pharmacies (Chisholm-Burns et al. 2010)

iii. Self-measured blood pressure monitoring, in conjunction with clinical support (Shimbo et al. 2015)

iv. Self-management support and education (Taylor et al. 2014)

v. Out-of-pocket medication cost reduction (Nije et al. 2015)

vi. Medication therapy management (Ramalho de Oliveira et al. 2010)

The following community assets are immediately applicable to heart disease, and are available in Lake County.

i. Community gardens

ii. Faith-based community (parish nurse programs)

iii. Farmers' markets (Mentor, Painesville, Willoughby)

iv. Fitness centers

v. Food pantries (Food Force, Madison Food Center, St. Gabriel's)

vi. Lake County Council on Aging (Meals on Wheels, The Lunch Place, farmers' market program)

vii. Lake County Free Clinic (smoking cessation services)

viii. Lake County farmers' markets (Willoughby, Painesville)

ix. Lake County General Health District (chronic disease self-management program, smoking cessation services, WIC)

x. Lake County Job and Family Services (food assistance programs)

xi. Lake County senior centers

xii. Lake Metroparks

xiii. Local municipal parks

xiv. Physician offices

xv. Public and private school programming

xvi. Signature Health (Federally Qualified Health Center)

xvii. YMCA of Lake County

4.2.11 High Blood Pressure

Upwards of 100 million Americans currently have high blood pressure, or hypertension, and high blood pressure is a considerable risk factor for heart disease, stroke, heart failure, kidney disease, and all-cause mortality (Shah and Stafford 2018). The most common condition addressed by primary care (James et al. 2014), the following ranges (Table 46) outline systolic and diastolic blood pressure in adults, as defined by the American Heart Association (2019).

Table 46. *Adult Blood Pressure Ranges*

Blood pressure category	Systolic (mm/hg)		Diastolic (mm/hg)
Normal	< 120	And	< 80
Elevated	120 to 129	And	< 80
Hypertension (stage I)	130 to 139	Or	80 to 89
Hypertension (stage II)	≥ 140	Or	≥ 90
Hypertensive crisis	> 180	And/or	> 120

Previously documented evidence suggests that racial disparities in blood pressure exist nationally, as African Americans are 40% more likely to have high blood pressure, as compared to their Caucasian and Asian peers, and subsequently have an increased risk for heart attack, heart failure, and stroke (Graham 2015). In Ohio, more than one-half (57%) of the Medicare population currently have high blood pressure, while 56% of Lake County's Medicare population currently have high blood pressure (Community Commons 2015c).

Nearly one-half of Lake County community leaders (47%) identified high blood pressure as a health concern in Lake County. Among those that responded to the 2019 community health assessment survey, 45% of respondents identified high blood pressure as a health concern in Lake County, and these respondents were predominately Caucasian (84%), not Hispanic or Latino (96%), male (59%), 55 to 59 years of age (20%), reported a total annual household income of $20,000 to $59,999 (43%), were a high school graduate or had a GED equivalent (26%), had been previously

diagnosed with high blood pressure (55%), were currently obese (43%), and characterized their overall diet and health as "Good" (42% and 45%, respectively). Less than one-quarter of the aforesaid respondents had been previously diagnosed with diabetes (21%), heart disease (14%), and stroke (2%), and more than one-third had been previously diagnosed with high cholesterol (35%).

More than half of male survey respondents (52%) had been previously diagnosed with high blood pressure, and the percentage of African American respondents with high blood pressure (64%) was considerably higher than both their Caucasian (39%) and Hispanic peers (42%; Table 47).

Table 47. *Demographic Characteristics of 2019 Lake County Community Health Assessment Survey Respondents Previously Diagnosed with High Blood Pressure*

	(%)
Sex	
Male	52
Female	28
Race/Ethnicity	
African American	64
Caucasian	39
Hispanic or Latino	42
Age	
19 to 29	6
30 to 39	16
40 to 49	35
50 to 59	42
60 to 69	53
70 to 79	62
80 and older	71
Education	
12th grade or less, no diploma	62
High school graduate or GED equivalent	41
Some college or Associate's degree	37
Bachelor's degree or higher	33

The percentage of respondents with high blood pressure increased with advancing age, and was highest among those with a 12th grade education or less, as compared to those with greater educational attainment (Table 47). The majority of respondents with high blood pressure were 55 to 74 years of age (54%), were a high school graduate or had a GED equivalent (28%), reported a total annual household income of $20,000 to $39,999 (26%), were married (57%), did not currently smoke cigarettes (86%) or electronic cigarettes (72%), had at least one alcoholic beverage per week during the past 30 days (50%), were obese (49%) and physically active for 60 minutes at least two days per week (57%), currently had a healthcare provider (96%) and had received a routine checkup within the past 12 months (85%), and characterized their overall diet and health as "Good" (48% and 43%, respectively). One-half (50%) of the aforementioned respondents had been previously diagnosed with high cholesterol, as well as diabetes (31%), and/or heart disease (17%).

The efficacy of the following approaches to reduce and/or manage high blood pressure have been well documented.

i. Team-based clinical, pharmacology, paramedic, community health, and nutritional care, in order to improve high blood pressure control (Dehmer et al. 2016)

ii. Self-measured blood pressure monitoring, in conjunction with clinical support (Shimbo et al. 2015)

iii. Pharmacological treatment (Whelton et al. 2018)

    a. Once daily antihypertensive dosing, as opposed to multiple daily doses, in order to promote regimen adherence.

    b. Use of combination antihypertensive pills, as opposed to multiple, individual pills, in order to promote regimen adherence.

iv.   Behavioral and motivational strategies to promote tobacco cessation, weight loss, moderated alcohol use, increased physical activity, reduced sodium consumption, and a healthy diet (Whelton et al. 2018)

v.   Electronic health record and patient registry utilization to identify patients with undiagnosed or untreated hypertension, and guide hypertension quality improvement efforts (Whelton et al. 2018)

vi.   Supplemental telehealth interaction and/or intervention (Whelton et al. 2018)

vii.   Construction of an individual-specific plan of care (Whelton et al. 2018)

The following community assets are immediately applicable to high blood pressure, and are available in Lake County.

i.   Community gardens

ii.   Faith-based community (parish nurse programs)

iii.   Farmers' markets (Mentor, Painesville, Willoughby)

iv.   Fitness centers

v.   Food pantries (Food Force, Madison Food Center, St. Gabriel's)

vi.   Lake County Council on Aging (Meals on Wheels, The Lunch Place, farmers' market program)

vii.   Lake County Free Clinic (smoking cessation services)

viii.   Lake County farmers' markets (Willoughby, Painesville)

ix.   Lake County General Health District (chronic disease self-management program, smoking cessation services, WIC)

x.   Lake County Job and Family Services (food assistance programs)

xi.   Lake County senior centers

xii. Lake Metroparks

xiii. Local municipal parks

xiv. Physician offices

xv. Public and private school programming

xvi. Signature Health (Federally Qualified Health Center)

xvii. YMCA of Lake County

Access to healthy and affordable food options is a public health priority, given the link between ample access to supermarkets, limited convenience store access, and a subsequently healthier diet and lower resulting obesity prevalence (Larson et al. 2009). Food deserts, or communities with limited access to healthy, affordable foods via supermarkets and grocery stores disproportionately affect low-income, racial and ethnic minority, and rural communities (Larson et al. 2009), and lend to increased convenience store, gas station, and fast food utilization (Ferdinand and Mahata 2017). Nationally, approximately 13% of census tracts are characterized by low income communities with limited access to healthy food (Rhone et al. 2019). In total, 22% of the United States has limited access to healthy foods, while 25% and 40% of Ohio and Lake County residents, respectively, have limited access to healthy foods (Community Commons 2015d).

Approximately one-third (33%) of Lake County community leaders identified limited access to healthy foods as a health concern in Lake County. Among those residents that completed the 2019 community health assessment survey, 26% identified limited access to healthy foods as a health concern in Lake County, and these respondents were primarily Caucasian (91%), not Hispanic or Latino (95%), female (67%), 45 to 59 years of age (33%), were a high school graduate or had a GED equivalent (30%), indicated a total annual household income of $20,000 to $79,999 (54%), did not identify an inability to afford food in the past 12 months (77%), currently had access to two vehicles at their respective household (51%) and traveled to the grocery store in their car (95%), ate fruits and vegetables every day in the past seven days (39%), consumed one to four meals prepared away from home in the past seven days (71%), were currently obese (43%), and reported overall diet and health as "Good" (41% and 48%, respectively). Nearly one-third (30%) of the aforementioned respondents had been previously diagnosed with high blood pressure, while 26% and 15% had been previously diagnosed with high cholesterol and diabetes, respectively. Respondents with a total

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annual household income of less than $20,000 identified limited access to healthy foods as a health concern in Lake County more than any other income range (42%).

The efficacy of the following approaches to increase access to healthy foods have been well documented.

i. Multisector recruitment of grocery store chains and/or independents to impoverished communities (Pothukuchi 2005)

ii. Creation of a community-based cooperative grocery store (Lotoski et al. 2015)

iii. Coordination of a public food market and/or neighborhood farmers markets (Levy 2007)

iv. Establishment of community gardens (Draper and Freedman 2010)

v. Linking convenient stores with local growers (Pelletier 2014)

The following community assets are immediately applicable to increasing access to healthy foods, and are available in Lake County.

i. Community gardens

ii. Farmers' markets (Mentor, Painesville, Willoughby)

iii. Food pantries (Food Force, Madison Food Center, St. Gabriel's)

iv. Lake County Council on Aging (Meals on Wheels, The Lunch Place, farmers' market program)

v. Lake County General Health District (WIC)

vi. Lake County Job and Family Services (food assistance programs)

vii. United Way of Lake County

Mental health, as defined by the World Health Organization, refers to "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO 2004). Mental health is largely affected by the physical (Lee and Maheswaran 2011) and social (Lorenc et al. 2012) environment, personal interaction (Brailean et al. 2019), and socioeconomic status (Meyer et al. 2014), and poor mental health status has been linked to food insecurity (Martinez et al. 2018), unemployment (Artazcoz et al. 2004), heavy alcohol use (Mäkelä et al. 2014), tobacco smoking (Szatkowski and McNeill 2013), physical disability (Andelic et al. 2010), and violence (Lund et al. 2011), among others.

While mental health was not identified by way of the secondary data benchmarking methodology outlined in Section 2.2.2, respondents of the 2019 community health assessment survey, as well as participants of the 2019 community health assessment focus groups, identified mental health as a health concern in Lake County.

Among those that responded to the 2019 community health assessment survey, 52% indicated having one or more poor mental health days in the past 30 days, and these respondents were predominately Caucasian (91%), not Hispanic or Latino (94%), female (58%), 55 to 59 years of age (12%), were a high school graduate or had a GED equivalent (32%), reported a total annual household income of $20,000 to $39,999 (24%), were currently employed (56%), had at least one alcoholic beverage per week during the past 30 days (49%), were physically active for 60 minutes on one or more days in the past seven days (65%), and had not abused prescription drugs (98%), illicit drugs (99%), or marijuana (91%) in the past 30 days. Approximately one-third currently smoked cigarettes (28%) or used electronic cigarettes (25%), and 39% reported binge drinking on one or more occasions in the past 30 days. Nearly two-thirds (59%) had experienced an adverse childhood

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event prior to 18 years of age; 7% had considered suicide in the past 12 months, and 8% had attempted suicide one time (4%), two times (3%), and four times (1%) in the past 12 months.

Mean poor mental health days in the past 30 days was higher among females (6 days) than males (5 days), and highest among survey respondents 30 to 39 years of age (9 days), and those with total annual household incomes less than $20,000 (9 days), respectively. African American respondents experienced eight poor mental health days in the past 30 days, the latter of which eclipsed both their Caucasian (7 days) and Hispanic or Latino (5 days) peers.

The efficacy of the following approaches to improve mental health have been well documented.

i.   Mental health benefits legislation, such as comprehensive parity (Mulvaney-Day 2019) and/or mandate laws (Lang 2013), in order to increase access to services by way of mental health coverage

ii. Utilization of a collaborative care team to improve depression management (Thota et al. 2012)

iii. Integration of depression care with Medicare Home Health (Bruce et al. 2015)

iv. Mental health education in school-aged curriculum (Mcluckie et al. 2014)

v.   Adoption of regular physical activity (Hamer et al. 2009)

vi. Community-based mental health education (Jorm 2012)

The following community assets are immediately applicable to mental health, and are available in Lake County.

i.   Cleveland Rape Crisis Center

ii. Crossroads Health

iii. Faith-based community

iv. Fitness centers

v. Forbes House

vi. Lake County Alcohol, Drug Addiction, and Mental Health Services Board

(Suicide Prevention Coalition, Trauma Response Team)

vii. Lake Health (emergency-based crisis services)

viii. NAMI of Lake County

ix. Physician offices

x. Private mental health providers

xi. Public and private school programming

xii. Signature Health (Federally Qualified Health Center)

xiii. Torchlight Youth Mentoring Alliance

xiv. Windsor-Laurelwood Center for Behavioral Health

xv. WomenSafe, Inc.

xvi. YMCA of Lake County

4.2.14 Obesity

In the United States, nearly one-third (28%) of adults 20 years of age and older (Community Commons 2015e), and 17% of youth two to 19 years of age (Ogden et al. 2015) have a BMI of 30 or greater, and are currently obese. Approximately 81% of Americans identify obesity as the most critical health problem in the United States (Rosenthal et al. 2017), and annual direct medical costs associated with obesity amount to upwards of $149 billion annually (Kim and Basu 2016). Comorbidities associated with obesity include cardiovascular disease, diabetes, cancer, osteoarthritis, liver disease, kidney disease, and sleep apnea (Pi-Sunyer 2009), as well as a diminished well-being and poor personal perception (Sutin et al. 2011). Disparities among obesity rates have been linked to race (Yu et al. 2017), ethnicity (Kirby et al. 2012), income (Pickett et al. 2005), education (Burgoine et al. 2016), and neighborhood characteristics (Zick et al. 2009), and these risk factors are dynamically intertwined (Wang and Beydoun 2007).

In Ohio, 31% of adults 20 years of age and older are currently obese, while nearly one-quarter (27%) of Lake County adults are obese (Community Commons 2015e). While obesity was not identified by way of the secondary data benchmarking methodology outlined in Section 2.2.2, respondents of the 2019 community health assessment survey, as well as participants of the 2019 community health assessment focus groups, identified obesity as a health concern in Lake County. Of those Lake County residents who responded to the 2019 community health assessment survey, 41% were currently obese, did not indicate an inability to afford food in the past 12 months (79%), consumed fruits and vegetables every day in the past seven days (32%), obtained one to four meals prepared away from home in the past seven days (71%), were physically active for 60 minutes at least one day per week (70%), had been diagnosed with chronic pain (16%), diabetes (21%), and high cholesterol (40%) by a healthcare professional, and characterized their health and overall diet as "Good" (48% and 50%, respectively).

Among all survey respondents, the prevalence of obesity was higher among men (43%) than women (40%), greater among African Americans (52%) when compared to their Caucasian (41%) and Hispanic or Latino peers (46%), and the highest among those with a 12th grade education or less (60%; Table 48). The greatest prevalence of obesity by age was among those respondents 40 to 49 years of age (Table 48).

Table 48. *Prevalence of Obesity Among 2019 Lake County Community Health Assessment Survey Respondents*

	(%)
Sex	
Male	43
Female	40
Race/Ethnicity	
African American	52
Caucasian	41
Hispanic or Latino	46
Age	
19 to 29	45
30 to 39	46
40 to 49	50
50 to 59	39
60 to 69	42
70 to 79	40
80 and older	35
Education	
12th grade or less, no diploma	60
High school graduate or GED equivalent	45
Some college or Associate's degree	39
Bachelor's degree or higher	33

The efficacy of the following approaches to prevent and/or reduce obesity have been well documented.

i. Reduction in sedentary screen time among children (Mitchell et al. 2009) and adolescents (Mitchell et al. 2013)

ii. Increasing the availability of healthy foods (Sanchez-Vaznaugh et al. 2010) and beverages (Mâsse et al. 2014) in schools

iii. School-based physical activity interventions (Wang et al. 2013)

iv. Technology-assisted weight loss interventions (Spring et al. 2013)

The following community assets are immediately applicable to obesity, and are available in Lake County.

i. Community gardens

ii. Faith-based community (parish nurse programs)

iii. Farmers' markets (Mentor, Painesville, Willoughby)

iv. Fitness centers

v. Food pantries (Food Force, Madison Food Center, St. Gabriel's)

vi. Lake County Council on Aging (Meals on Wheels, The Lunch Place, farmers' market program)

vii. Lake County farmers' markets (Willoughby, Painesville)

viii. Lake County General Health District (WIC)

ix. Lake County Job and Family Services (food assistance programs)

x. Lake County senior centers

xi. Lake Metroparks

xii. Local municipal parks

xiii.   Physician offices

xiv.   Public and private school programming

 xv.   Signature Health (Federally Qualified Health Center)

xvi.   YMCA of Lake County

4.2.15 Preventable Hospitalizations

Preventable hospitalizations consist of hospital admissions that could have been prevented with timely outpatient utilization (Rosano et al. 2012), conditions often referred to as ambulatory care sensitive conditions (ACSCs). In the United States, preventable hospitalizations due to ACSCs among are common, and account for nearly $30 billion in annual healthcare costs (Doshi et al. 2017). Preventable hospitalizations occur among 80% of older adults who have at least one chronic condition (Anderson and Horvath 2004), and said hospitalizations are driven largely by both an individual's sociodemographic characteristics and current health status (Falster et al. 2015), health behaviors (Muenchberger and Kendall 2010), and primary care availability and quality (Rosano et al. 2012). Racial disparities are apparent in preventable hospitalization events, and African Americans have significantly higher preventable hospitalizations due to congestive heart failure, urinary tract infection, dehydration, diabetes, adult asthma, and high blood pressure, as compared to their Caucasian peers (O'Neil et al. 2010).

While the national preventable hospitalization rate among Medicare patients is 49 per 1,000 Medicare enrollees, this rate is eclipsed by Ohio's rate of 57 per 1,000, and Lake County's rate of 59 per 1,000, respectively (Community Commons 2015f). Less than one-half of Lake County community leaders (40%) identified preventable hospitalizations as a health concern in Lake County. Among those who responded to the 2019 community health assessment survey, 29% of respondents identified preventable hospitalizations as a health concern in Lake County, and these respondents were predominately Caucasian (92%), not Hispanic or Latino (94%), male (53%), 55 to 59 years of

age (12%), were a high school graduate or had a GED equivalent (31%), reported a total annual household income of $20,000 to $39,999 (24%), did not have a health problem that required the use of special equipment (92%), were physically active for 60 minutes one to three days in the past seven days (40%), had been to a routine primary care appointment in the past 12 months (80%), did not utilize a hospital emergency room in the past 12 months (75%), and currently had health insurance coverage (90%).

The efficacy of the following approaches to prevent and/or reduce preventable hospitalizations have been well documented.

   i.   Adoption of coordinated clinical discharge processes (Greenwald and Jack 2009)

  ii.   Enhanced ambulatory care utilization (Nyweide et al. 2013)

 iii.   Chronic disease management (Muenchberger and Kendall 2010)

        a.   Telehealth support (Jia et al. 2009)

        b.   Chronic disease self-management education (McGowan 2012)

        c.   Community-based health worker intervention (Kim et al. 2016)

 iv.   Vaccination (Ozawa et al. 2016)

The following community assets are immediately applicable to preventable hospitalizations, and are available in Lake County.

   i.   Cleveland Clinic Family Health Center (physician offices, urgent care facility)

  ii.   Lake County Council on Aging

 iii.   Lake County General Health District (chronic disease self-management program, smoking cessation services, immunization services)

 iv.   Lake Health (hospitals, physicians, urgent care facilities)

  v.   Signature Health (Federally Qualified Health Center)

vi.   University Hospitals (physician office, urgent care facilities)

4.2.16 Preventable Teen Deaths

Preventable teen deaths, as defined for the purpose of this assessment, pertain to accidents, homicides, and/or suicides among teenagers 15 to 19 years of age. In the United States, nearly one-half (43%) of fatal car accidents involving teenage and adolescent drivers 16 to 20 years of age involved alcohol and/or speeding (Keeney and Palley 2013), and teenage males are more likely to be involved in a fatal car accident than teenage females (Swedler et al. 2012). With respect to homicide, teenagers and adolescents 18 to 24 years of age retain the highest homicide victimization rate of any age group (Cooper and Smith 2012), and the majority of these homicides involved a firearm (Lee and Mannix 2018). Increased homicide victimization is associated with being (1) male, (2) African American, (3) 15 to 24 years of age, (4) having inadequate social support, and (5) having a mental illness and/or current substance use, and African Americans 15 to 24 years of age are more likely to be homicide victims than their Caucasian peers (Lo et al. 2013).

Between 1975 and 2016, approximately 85,051 suicides occurred in the United States among youth and teenagers 10 to 19 years of age (Ruch et al. 2019), and suicide among teenagers 15 to 19 years of age amounted to 2,488 deaths in 2017 alone (CDC 2017e). Suicide is the second leading cause of death among youth, teenagers, and adolescents 10 to 24 years of age (Smith-Millman and Flashpohler 2019), continues to increase among both teenage males and females, and is universally higher among males (Roh et al. 2018). Method of suicide is predominately attributed to the use of a firearm (55%) among males, and poisoning (34%) among females (Curtin et al. 2016).

When reported collectively, 128 per 100,000 of 15 to 19 year-olds die annually in the United States due to an accident, homicide, and/or suicide (CDC 2017e). In Ohio, the rate of preventable teen death among those 15 to 19 years of age is 136 per 100,000, the latter of which is eclipsed by the Lake County rate of 173 per 100,000 (CDC 2017e).

Among those individuals that responded to the 2019 community health assessment survey, 43% identified preventable teen deaths as a health concern in Lake County, and these respondents were predominately Caucasian (93%), not Hispanic or Latino (94%), male (51%), 55 to 64 years of age (22%), married (61%), were a high school graduate or obtained a GED equivalent (30%), reported a total annual household income of $20,000 to $39,999 (26%), and did not have an individual under the age of 18 living in their household (72%).

The efficacy of the following approaches to prevent and/or reduce teen accidents, homicides, and suicides have been well documented.

i. Teen accidents

    a. Community prevention education (Overton et al. 2015)

    b. Graduated driver licensing (Curry et al. 2017)

    c. Driving restriction enforcement (Rajaratnam et al. 2015)

ii. Teen homicide

    a. Universal firearm background checks (Lee et al. 2017)

    b. Early violence prevention and conflict resolution education (Shore and Shore 2009)

iii. Teen suicide (Zalsman et al. 2016)

    a. School-based suicide programming

    b. Gatekeeper training

    c. Suicide screening

    d. Mobile phone- and/or internet-based suicide intervention

The following community assets are immediately applicable to preventable hospitalizations, and are available in Lake County.

    i.   Crossroads Health

    ii.   Lake County juvenile court

    iii.   Lake County Safe Communities Coalition

    iv.   Lake County Suicide Prevention Coalition

    v.   Lake Health (emergency-based crisis services)

    vi.   Local law enforcement

    vii.   NAMI of Lake County

    viii.   Ohio State Highway Patrol

    ix.   Physician offices

    x.   Private mental health providers

    xi.   Public and private school programming

5. References

Alzheimer's Association. (2018). 2018 Alzheimer's disease facts and figures. *Alzheimer's & Dementia*, *14*(3), 367-429.

Ambrose, A. F., Paul, G., & Hausdorff, J. M. (2013). Risk factors for falls among older adults: a review of the literature. *Maturitas*, *75*(1), 51-61.

American Diabetes Association. (2010). Diagnosis and classification of diabetes mellitus. *Diabetes care*, *33*(Supplement 1), S62-S69.

American Diabetes Association. (2018). Economic costs of diabetes in the US in 2017. *Diabetes care*, *41*(5), 917-928.

American Heart Association. (2019). Healthy and unhealthy blood pressure ranges. Retrieved on February 17, 2019, from https://www.heart.org/en/health-topics/high-blood-pressure/understanding-blood-pressure-readings.

Andelic, N., Sigurdardottir, S., Schanke, A. K., Sandvik, L., Sveen, U., & Roe, C. (2010). Disability, physical health and mental health 1 year after traumatic brain injury. *Disability and rehabilitation*, *32*(13), 1122-1131.

Anderson, G., & Horvath, J. (2004). The growing burden of chronic disease in America. *Public health reports*, *119*(3), 263-270.

Anderson, P., Chisholm, D., & Fuhr, D. C. (2009). Effectiveness and cost-effectiveness of policies and programmes to reduce the harm caused by alcohol. *The lancet*, *373*(9682), 2234-2246.Anderson, C. (2010). Presenting and evaluating qualitative research. *American journal of pharmaceutical education*, *74*(8), 141.

Armenian, P., Vo, K. T., Barr-Walker, J., & Lynch, K. L. (2018). Fentanyl, fentanyl analogs and novel synthetic opioids: a comprehensive review. *Neuropharmacology*, *134*, 121-132.

Artazcoz, L., Benach, J., Borrell, C., & Cortes, I. (2004). Unemployment and mental health: understanding the interactions among gender, family roles, and social class. *American Journal of public health*, *94*(1), 82-88.

Artiga, S., & Hinton, E. (2018). Beyond health care: the role of social determinants in promoting health and health equity. *Health*, *20*, 1-10.

Atri, A. (2019). The alzheimer's disease clinical spectrum: diagnosis and management. *Medical Clinics*, *103*(2), 263-293.

Bergen, G., Pitan, A., Qu, S., Shults, R. A., Chattopadhyay, S. K., Elder, R. W., & Clymer, J. M. (2014). Publicized sobriety checkpoint programs: a community guide systematic review. *American Journal of Preventive Medicine*, *46*(5), 529-539.

Bommer, C., Sagalova, V., Heesemann, E., Manne-Goehler, J., Atun, R., Bärnighausen, T., & Vollmer, S. (2018). Global economic burden of diabetes in adults: projections from 2015 to 2030. *Diabetes care*, *41*(5), 963-970.

Brailean, A., Curtis, J., Davis, K., Dregan, A., & Hotopf, M. (2019). Characteristics, comorbidities, and correlates of atypical depression: evidence from the UK Biobank Mental Health Survey. *Psychological medicine*, 1-10.

Brookmeyer, R., Abdalla, N., Kawas, C. H., & Corrada, M. M. (2018). Forecasting the prevalence of preclinical and clinical Alzheimer's disease in the United States. *Alzheimer's & Dementia*, *14*(2), 121-129.

Brubacher, J. R., Desapriya, E., Erdelyi, S., & Chan, H. (2016). The impact of child safety restraint legislation on child injuries in police-reported motor vehicle collisions in British Columbia: An interrupted time series analysis. *Paediatrics & child health*, *21*(4), e27-e31.

Bruce, M. L., Raue, P. J., Reilly, C. F., Greenberg, R. L., Meyers, B. S., Banerjee, S., & Rosas, V. H. (2015). Clinical effectiveness of integrating depression care management into medicare home health: the Depression CAREPATH Randomized trial. *JAMA internal medicine*, *175*(1), 55-64.

Bullard, K. M., Cowie, C. C., Lessem, S. E., Saydah, S. H., Menke, A., Geiss, L. S., & Imperatore, G. (2018). Prevalence of diagnosed diabetes in adults by diabetes type—United States, 2016. *Morbidity and Mortality Weekly Report*, *67*(12), 359.

Burgoine, T., Forouhi, N. G., Griffin, S. J., Brage, S., Wareham, N. J., & Monsivais, P. (2016). Does neighborhood fast-food outlet exposure amplify inequalities in diet and obesity? A cross-sectional study. *The American journal of clinical nutrition*, *103*(6), 1540-1547.

Burns, E., & Kakara, R. (2018). Deaths from falls among persons aged≥ 65 years—United States, 2007–2016. *Morbidity and Mortality Weekly Report*, *67*(18), 509.

Burton, R., & Sheron, N. (2018). No level of alcohol consumption improves health. *The Lancet*, *392*(10152), 987-988.

Campbell, C. A., Hahn, R. A., Elder, R., Brewer, R., Chattopadhyay, S., Fielding, J., & Task Force on Community Preventive Services. (2009). The effectiveness of limiting alcohol outlet density as a means of reducing excessive alcohol consumption and alcohol-related harms. *American journal of preventive medicine*, *37*(6), 556-569.

Centers for Disease Control and Prevention (CDC). (2017a). Acculturation - ACQ. Retrieved on June 12, 2019 from https://wwwn.cdc.gov/nchs/data/nhanes/2017-2018/questionnaires/ACQ_J.pdf.

Centers for Disease Control and Prevention (CDC). (2017b). Diet Behavior and Nutrition - DBQ. Retrieved on June 12, 2019, from https://wwwn.cdc.gov/nchs/data/nhanes/2017-2018/questionnaires/DBQ_J.pdf.

Centers for Disease Control and Prevention (CDC). (2017c). Physical Activity and Physical Fitness - PAQ. Retrieved on June 12, 2019, from https://wwwn.cdc.gov/nchs/data/nhanes/2017-2018/questionnaires/PAQ_J.pdf.

Centers for Disease Control and Prevention (CDC). (2017d). Sexual Behavior – SXQ. Retrieved on June 12, 2019 from https://wwwn.cdc.gov/nchs/data/nhanes/2017-2018/questionnaires/SXQ_ACASI_J.pdf.

Centers for Disease Control and Prevention (CDC). (2017e). CDC Wonder: Underlying cause of death, 1999-2017 results. Retrieved on February 14, 2019, from https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=8F4FCC626B23B859F2C9EF26AB35E2DB.

Centers for Disease Control and Prevention (CDC). (2018a). 2018 Behavioral Risk Factor Surveillance Survey Questionnaire. Retrieved on June 12, 2019 from https://www.cdc.gov/brfss/questionnaires/pdf-ques/2018_BRFSS_English_Questionnaire.pdf.

Centers for Disease Control and Prevention (CDC). (2018b). Draft 2018 NHIS Questionnaire – Sample Adult. Adult Identification. Retrieved on June 12, 2019 from ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2018/english/.

Centers for Disease Control and Prevention (CDC). (2018c). Draft 2018 NHIS Questionnaire – Sample Child. Child Identification. Retrieved on June 12, 2019 from ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2018/english/.

Centers for Disease Control and Prevention (CDC). (2018d). Draft 2018 NHIS Questionnaire – Family Coverage. Retrieved on June 12, 2019 from ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2018/english/.

Centers for Disease Control and Prevention (CDC). (2018e). Draft 2018 NHIS Questionnaire – Family. Family Identification. Retrieved on June 12, 2019 from ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2018/english/.

Centers for Disease Control and Prevention (CDC). (2018f). Draft 2018 NHIS Questionnaire – Household Composition. Retrieved on June 12, 2019 from ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2018/english/.

Centers for Disease Control and Prevention (CDC). (2019a). 2019 State and Local Youth Risk Behavior Survey. Retrieved on June 12, 2019 from https://www.cdc.gov/healthyyouth/data/yrbs/pdf/2019/2019_YRBS-Standard-HS-Questionnaire.pdf.

Centers for Disease Control and Prevention (CDC). (2019b). CDC WONDER. Underlying Cause of Death, 1999-2017 Request. Retrieved on February 8, 2019, from https://wonder.cdc.gov/controller/datarequest/D76.

Centers for Disease Control and Prevention (CDC). (2019c). Leading causes of death, 1900-1998. Retrieved on February 15, 2019, from http://www.cdc.gov/nchs/data/dvs/lead1900_98.pdf.

Centers for Medicare and Medicaid Services (CMS). (2007). An Overview of the US Health Care System Chart Book. *Baltimore, MD: CMS*.

Centers for Medicare and Medicaid Services (CMS). (2015). Chronic Conditions. Retrieved on February 9, 2019, from https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC_Main.html.

Chambless, L. E., Heiss, G., Folsom, A. R., Rosamond, W., Szklo, M., Sharrett, A. R., & Clegg, L. X. (1997). Association of coronary heart disease incidence with carotid arterial wall thickness and major risk factors: the Atherosclerosis Risk in Communities (ARIC) Study, 1987–1993. *American journal of epidemiology*, *146*(6), 483-494.

Chang, K., Wu, C. C., & Ying, Y. H. (2012). The effectiveness of alcohol control policies on alcohol-related traffic fatalities in the United States. *Accident Analysis & Prevention*, *45*, 406-415.

Chisholm-Burns, M. A., Lee, J. K., Spivey, C. A., Slack, M., Herrier, R. N., Hall-Lipsy, E., & Kramer, S. S. (2010). US pharmacists' effect as team members on patient care: systematic review and meta-analyses. *Medical care*, 923-933.

Choi, B. Y., Blumberg, C., & Williams, K. (2016). Mobile integrated health care and community paramedicine: an emerging emergency medical services concept. *Annals of emergency medicine*, *67*(3), 361-366.

Community Commons. (2015a). Diabetes. Retrieved on February 6, 2019, from https://www.communitycommons.org.

Community Commons. (2015b). Percentage of Medicare population with heart disease. Retrieved on February 6, 2019, from https://www.communitycommons.org.

Community Commons. (2015c). Percentage of Medicare population with high blood pressure. Retrieved on February 6, 2019, from https://www.communitycommons.org.

Community Commons. (2015d). Percentage of population with limited access to healthy foods. Retrieved on February 6, 2019, from https://www.communitycommons.org.

Community Commons. (2015e). Obesity. Retrieved on February 6, 2019, from https://www.communitycommons.org.

Community Commons. (2015f). Preventable hospitalization rate of Medicare patients. Retrieved on February 6, 2019, from https://www.communitycommons.org.

Community Commons (2016). Fast food restaurant density. Retrieved on February 6, 2019, from https://www.communitycommons.org.

Cooper, A., & Smith, E. L. (2012). *Homicide trends in the United States, 1980-2008* (pp. 536-543). BiblioGov.

Counties, A. (2017). Ohio. *The American Association of Petroleum Geologist Bulletin*.

County Health Rankings. (2019). Excessive drinking: Percentage of adults reporting binge or heavy drinking. Retrieved on February 6, 2019, from https://www.countyhealthrankings.org/app/ohio/2019/measure/factors/49/datasource.

Courtemanche, C., Marton, J., Ukert, B., Yelowitz, A., & Zapata, D. (2018). Early effects of the Affordable Care Act on health care access, risky health behaviors, and self-assessed health. *Southern Economic Journal*, *84*(3), 660-691.

Crouch, E., Radcliff, E., Strompolis, M., & Wilson, A. (2018). Adverse childhood experiences (ACEs) and alcohol abuse among South Carolina adults. *Substance use & misuse*, *53*(7), 1212-1220.

Curry, A. E., Pfeiffer, M. R., & Elliott, M. R. (2017). Compliance with and enforcement of graduated

driver licensing restrictions. *American journal of preventive medicine*, *52*(1), 47-54.

Curtin, S. C., Warner, M., & Hedegaard, H. (2016). Increase in suicide in the United States, 1999–

2014.

Davis, B., & Carpenter, C. (2009). Proximity of fast-food restaurants to schools and adolescent

obesity. *American Journal of Public Health*, *99*(3), 505-510.

Dehmer, S. P., Baker-Goering, M. M., Maciosek, M. V., Hong, Y., Kottke, T. E., Margolis, K. L., &

Thomas, A. J. (2016). Modeled health and economic impact of team-based care for

hypertension. *American journal of preventive medicine*, *50*(5), S34-S44.

Dellinger, A. M., & Sleet, D. A. (2010). Preventing traffic injuries: Strategies that work. *American

Journal of Lifestyle Medicine*, *4*(1), 82-89.

Department of Health. (2016). UK Chief Medical Officers' low risk drinking guidelines.

Deprey, S. M., Biedrzycki, L., & Klenz, K. (2017). Identifying characteristics and outcomes that are

associated with fall-related fatalities: multi-year retrospective summary of fall deaths in older adults

from 2005–2012. *Injury epidemiology*, *4*(1), 21.

Doshi, R. P., Aseltine, R. H., Sabina, A. B., & Graham, G. N. (2017). Racial and ethnic disparities in

preventable hospitalizations for chronic disease: prevalence and risk factors. *Journal of racial and ethnic

health disparities*, *4*(6), 1100-1106.

Draper, C., & Freedman, D. (2010). Review and analysis of the benefits, purposes, and motivations

associated with community gardening in the United States. *Journal of Community Practice*, *18*(4), 458-

492.

Elder, R. W., Lawrence, B., Ferguson, A., Naimi, T. S., Brewer, R. D., Chattopadhyay, S. K., & Task Force on Community Preventive Services. (2010). The effectiveness of tax policy interventions for reducing excessive alcohol consumption and related harms. *American journal of preventive medicine*, *38*(2), 217-229.

Falster, M. O., Jorm, L. R., Douglas, K. A., Blyth, F. M., Elliott, R. F., & Leyland, A. H. (2015). Sociodemographic and health characteristics, rather than primary care supply, are major drivers of geographic variation in preventable hospitalizations in Australia. *Medical care*, *53*(5), 436.

Ferdinand, K. C., & Mahata, I. (2017). Food Deserts: Limited Healthy Foods in the Land of Plenty.

Fergusson, D. M., Boden, J. M., & Horwood, L. J. (2009). Tests of causal links between alcohol abuse or dependence and major depression. *Archives of general psychiatry*, *66*(3), 260-266.

Finlayson, M. L., & Peterson, E. W. (2010). Falls, aging, and disability. *Physical Medicine and Rehabilitation Clinics*, *21*(2), 357-373.

Fleischhacker, S. E., Evenson, K. R., Rodriguez, D. A., & Ammerman, A. S. (2011). A systematic review of fast food access studies. *Obesity reviews*, *12*(5), e460-e471.

Giovannucci, E., Harlan, D. M., Archer, M. C., Bergenstal, R. M., Gapstur, S. M., Habel, L. A., & Yee, D. (2010). Diabetes and cancer: a consensus report. *CA: a cancer journal for clinicians*, *60*(4), 207-221.

Graham, G. (2015). Disparities in cardiovascular disease risk in the United States. *Current cardiology reviews*, *11*(3), 238-245.

Greenwald, J. L., & Jack, B. W. (2009). Preventing the preventable: reducing rehospitalizations through coordinated, patient-centered discharge processes. *Professional case management*, *14*(3), 135.

Hacker, K., Anies, M., Folb, B. L., & Zallman, L. (2015). Barriers to health care for undocumented immigrants: a literature review. *Risk management and healthcare policy*, *8*, 175.

Hamer, M., Stamatakis, E., & Steptoe, A. (2009). Dose-response relationship between physical activity and mental health: the Scottish Health Survey. *British journal of sports medicine*, *43*(14), 1111-1114.

Heidenreich, P. A., Trogdon, J. G., Khavjou, O. A., Butler, J., Dracup, K., Ezekowitz, M. D., & Lloyd-Jones, D. M. (2011). Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. *Circulation*, *123*(8), 933-944.

Hingson, R., Zha, W., & Smyth, D. (2017). Magnitude and trends in heavy episodic drinking, alcohol-impaired driving, and alcohol-related mortality and overdose hospitalizations among emerging adults of college ages 18–24 in the United States, 1998–2014. *Journal of studies on alcohol and drugs*, *78*(4), 540-548.

IRS Notice 2011-52. (2011). Internal Revenue Bulletin: 2011-30. Retrieved on August 16, 2018, from http://www.irs.gov/irb/2011-30_IRB/ar08.html.

James, P. A., Oparil, S., Carter, B. L., Cushman, W. C., Dennison-Himmelfarb, C., Handler, J., & Smith, S. C. (2014). 2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). *Jama*, *311*(5), 507-520.

Jia, H., Chuang, H. C., Wu, S. S., Wang, X., & Chumbler, N. R. (2009). Long-term effect of home telehealth services on preventable hospitalization use. *Journal of Rehabilitation Research & Development*, *46*(5).

Jorm, A. F. (2012). Mental health literacy: Empowering the community to take action for better mental health. *American Psychologist*, *67*(3), 231.

Kane, E. P., Collinsworth, A. W., Schmidt, K. L., Brown, R. M., Snead, C. A., Barnes, S. A., & Walton, J. W. (2016). Improving diabetes care and outcomes with community health workers. *Family practice*, *33*(5), 523-528.

Kennedy, A., Basket, M., & Sheedy, K. (2011). Vaccine attitudes, concerns, and information sources reported by parents of young children: results from the 2009 HealthStyles survey. *Pediatrics*, *127*(Supplement 1), S92-S99.

Kenny, R. A. M., Rubenstein, L. Z., Tinetti, M. E., Brewer, K., Cameron, K. A., Capezuti, E. A., & Suther, M. (2011). Summary of the Updated American Geriatrics Society/British Geriatrics Society Clinical Practice Guideline for Prevention of Falls in Older Persons. *JOURNAL OF THE AMERICAN GERIATRICS SOCIETY*, *59*(1).

Kim, D. D., & Basu, A. (2016). Estimating the medical care costs of obesity in the United States: systematic review, meta-analysis, and empirical analysis. *Value in Health*, *19*(5), 602-613.

Kim, K., Choi, J. S., Choi, E., Nieman, C. L., Joo, J. H., Lin, F. R., & Han, H. R. (2016). Effects of community-based health worker interventions to improve chronic disease management and care among vulnerable populations: a systematic review. *American journal of public health*, *106*(4), e3-e28.

Kirby, J. B., Liang, L., Chen, H. J., & Wang, Y. (2012). Race, place, and obesity: the complex relationships among community racial/ethnic composition, individual race/ethnicity, and obesity in the United States. *American journal of public health*, *102*(8), 1572-1578.

Krebs-Smith, S. M., Guenther, P. M., Subar, A. F., Kirkpatrick, S. I., & Dodd, K. W. (2010). Americans do not meet federal dietary recommendations. *The Journal of nutrition*, *140*(10), 1832-1838.

Kypri, K., Langley, J. D., Saunders, J. B., Cashell-Smith, M. L., & Herbison, P. (2008). Randomized controlled trial of web-based alcohol screening and brief intervention in primary care. *Archives of internal medicine*, *168*(5), 530-536.

Laguilles, J. S., Williams, E. A., & Saunders, D. B. (2011). Can lottery incentives boost web survey response rates? Findings from four experiments. *Research in Higher Education*, *52*(5), 537-553.

Landy, D. C., Mintzer, M. J., Silva, A. K., & Schulman, C. I. (2011). Hispanic ethnicity and unintentional injury mortality in the elderly. *Journal of surgical research*, *166*(1), 28-31.

Larson, N. I., Story, M. T., & Nelson, M. C. (2009). Neighborhood environments: disparities in access to healthy foods in the US. *American journal of preventive medicine*, *36*(1), 74-81.

Lang, M. (2013). The impact of mental health insurance laws on state suicide rates. *Health economics*, *22*(1), 73-88.

Laymon, B., Shah, G., Leep, C. J., Elligers, J. J., & Kumar, V. (2015). The proof's in the partnerships: Are affordable care act and local health department accreditation practices influencing collaborative partnerships in community health assessment and improvement planning? *Journal of Public Health Management and Practice*, *21*(1), 12-17.

Lee, A. C., & Maheswaran, R. (2011). The health benefits of urban green spaces: A review of the evidence. Journal of Public Health, 33(2), 212–222.

Lee, L. K., Fleegler, E. W., Farrell, C., Avakame, E., Srinivasan, S., Hemenway, D., & Monuteaux, M. C. (2017). Firearm laws and firearm homicides: a systematic review. *JAMA internal medicine*, *177*(1), 106-119.

Lee, L. K., & Mannix, R. (2018). Increasing fatality rates from preventable deaths in teenagers and young adults. *Jama*, *320*(6), 543-544.

Levy, J. (2007). 10 ways to get healthy, local foods into low-income neighborhoods: A Minneapolis resource guide. Retrieved on February 14, 2019, from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.180.6774&rep=rep1&type=pdf.

Levy, H., & Janke, A. (2016). Health literacy and access to care. *Journal of health communication*, *21*(sup1), 43-50.

Li, F., Harmer, P., Cardinal, B. J., Bosworth, M., & Johnson-Shelton, D. (2009). Obesity and the built environment: does the density of neighborhood fast-food outlets matter? *American Journal of Health Promotion*, *23*(3), 203-209.

Lo, C. C., Howell, R. J., & Cheng, T. C. (2013). Explaining Black–White differences in homicide victimization. *Aggression and Violent Behavior*, *18*(1), 125-134.

Lohman, M. C., Sonnega, A. J., Nicklett, E. J., Estenson, L., & Leggett, A. N. (2018). Comparing estimates of fall-related mortality incidence among older adults in the United States. *The Journals of Gerontology: Series A.*

Lorenc, T., Clayton, S., Neary, D., Whitehead, M., Petticrew, M., Thomson, H., et al. (2012). Crime, fear of crime, environment, and mental health and wellbeing: Mapping review of theories and causal pathways. Health & Place, 18(4), 757–765.

Lotoski, L. C., Engler-Stringer, R., & Muhajarine, N. (2015). Cross-sectional analysis of a community-based cooperative grocery store intervention in Saskatoon, Canada. *Canadian Journal of Public Health*, *106*(3), e147-e153.

Long, A. N., & Dagogo-Jack, S. (2011). Comorbidities of diabetes and hypertension: mechanisms and approach to target organ protection. *The journal of clinical hypertension*, *13*(4), 244-251.

Lund, C., De Silva, M., Plagerson, S., Cooper, S., Chisholm, D., Das, J., & Patel, V. (2011). Poverty and mental disorders: breaking the cycle in low-income and middle-income countries. *The lancet*, *378*(9801), 1502-1514.

Ma, J., Bao, Y. P., Wang, R. J., Su, M. F., Liu, M. X., Li, J. Q., & Shi, J. (2018). Effects of medication-assisted treatment on mortality among opioids users: a systematic review and meta-analysis. *Molecular psychiatry*, 1.

Madras, B. K., Compton, W. M., Avula, D., Stegbauer, T., Stein, J. B., & Clark, H. W. (2009). Screening, brief interventions, referral to treatment (SBIRT) for illicit drug and alcohol use at multiple healthcare sites: comparison at intake and 6 months later. *Drug and alcohol dependence*, *99*(1-3), 280-295.

Mäkelä, P., Raitasalo, K., & Wahlbeck, K. (2014). Mental health and alcohol use: a cross-sectional study of the Finnish general population. *The European Journal of Public Health*, *25*(2), 225-231.

Marshall, B. D., Milloy, M. J., Wood, E., Montaner, J. S., & Kerr, T. (2011). Reduction in overdose mortality after the opening of North America's first medically supervised safer injecting facility: a retrospective population-based study. *The Lancet*, *377*(9775), 1429-1437.

Martinez, S. M., Frongillo, E. A., Leung, C., & Ritchie, L. (2018). No food for thought: Food insecurity is related to poor mental health and lower academic performance among students in California's public university system. *Journal of health psychology*, 1359105318783028.

Mâsse, L. C., de Niet-Fitzgerald, J. E., Watts, A. W., Naylor, P. J., & Saewyc, E. M. (2014). Associations between the school food environment, student consumption and body mass index of Canadian adolescents. *International Journal of Behavioral Nutrition and Physical Activity*, *11*(1), 29.

Matthews, K. A., Xu, W., Gaglioti, A. H., Holt, J. B., Croft, J. B., Mack, D., & McGuire, L. C. (2018). Racial and ethnic estimates of Alzheimer's disease and related dementias in the United States (2015–2060) in adults aged 65 years. *Alzheimer's & Dementia*, *1*, 8.

McCartt, A. T., Hellinga, L. A., & Kirley, B. B. (2010). The effects of minimum legal drinking age 21 laws on alcohol-related driving in the United States. *Journal of Safety Research*, *41*(2), 173-181.

McDonald, R., & Strang, J. (2016). Are take-home naloxone programmes effective? Systematic review utilizing application of the Bradford Hill criteria. *Addiction*, *111*(7), 1177-1187.

McGowan, P. T. (2012). Self-management education and support in chronic disease management. *Primary Care: Clinics in Office Practice*, *39*(2), 307-325.

Mcluckie, A., Kutcher, S., Wei, Y., & Weaver, C. (2014). Sustained improvements in students' mental health literacy with use of a mental health curriculum in Canadian schools. *BMC psychiatry*, *14*(1), 379.

Meyer, O. L., Castro-Schilo, L., & Aguilar-Gaxiola, S. (2014). Determinants of mental health and self-rated health: a model of socioeconomic status, neighborhood safety, and physical activity. *American journal of public health*, *104*(9), 1734-1741.

Mitchell, J. A., Mattocks, C., Ness, A. R., Leary, S. D., Pate, R. R., Dowda, M., & Riddoch, C. (2009). Sedentary behavior and obesity in a large cohort of children. *Obesity*, *17*(8), 1596-1602.

Mitchell, J. A., Rodriguez, D., Schmitz, K. H., & Audrain-McGovern, J. (2013). Greater screen time is associated with adolescent obesity: a longitudinal study of the BMI distribution from ages 14 to 18. *Obesity*, *21*(3), 572-575.

Moylan, K. C., & Binder, E. F. (2007). Falls in older adults: risk assessment, management and prevention. *The American journal of medicine*, *120*(6), 493-e1.

Muenchberger, H., & Kendall, E. (2010). Predictors of preventable hospitalization in chronic disease: priorities for change. *Journal of public health policy*, *31*(2), 150-163.

Mulvaney-Day, N., Gibbons, B. J., Alikhan, S., & Karakus, M. (2019). Mental Health Parity and Addiction Equity Act and the Use of Outpatient Behavioral Health Services in the United States, 2005–2016. *American journal of public health*, *109*(S3), S190-S196.

Naimi, T. S., Stadtmueller, L. A., Chikritzhs, T., Stockwell, T., Zhao, J., Britton, A., & Sherk, A. (2019). Alcohol, age, and mortality: estimating selection bias due to premature death. *Journal of studies on alcohol and drugs*, *80*(1), 63-68.

Network of Care. (2016). Alcohol-impaired driving deaths. Retrieved on February 7, 2019, from http://lake.oh.networkofcare.org/ph/HealthIndicatorsDetails.aspx?hid=60161.

Nichols, M. D. (2018). *Informing the Construction of a Fall Prevention Clinical Practice Guideline for Podiatry Patients 65 Years of Age and Older* (Doctoral dissertation, Kent State University).

Nichols, M., Graham, R., Margalis, C., & Wakelee, J. (2018). Lake County drug-related overdose deaths: 2013 to 2017. Retrieved on February 13, 2019, from https://www.lcghd.org/wp-

content/uploads/Reports/LCGHD_2013-to-2017-Lake-County-Community-Overdose-Report_October-11_2018.pdf.

Nichols, E., Szoeke, C. E., Vollset, S. E., Abbasi, N., Abd-Allah, F., Abdela, J., & Awasthi, A. (2019). Global, regional, and national burden of Alzheimer's disease and other dementias, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet Neurology*, *18*(1), 88-106.

Njie, G. J., Finnie, R. K., Acharya, S. D., Jacob, V., Proia, K. K., Hopkins, D. P., & Lackland, D. T. (2015). Peer Reviewed: Reducing Medication Costs to Prevent Cardiovascular Disease: A Community Guide Systematic Review. *Preventing chronic disease*, *12*.

Nyweide, D. J., Anthony, D. L., Bynum, J. P., Strawderman, R. L., Weeks, W. B., Casalino, L. P., & Fisher, E. S. (2013). Continuity of care and the risk of preventable hospitalization in older adults. *JAMA internal medicine*, *173*(20), 1879-1885.

Ogden, C. L., Carroll, M. D., Fryar, C. D., & Flegal, K. M. (2015). Prevalence of obesity among adults and youth: United States, 2011–2014.

Oglesby, W. H., & Slenkovich, K. (2014). A mixed-methods approach to conducting Internal Revenue Service-compliant community health needs assessments: a case example for nonprofit hospital leaders. *Journal of Healthcare Leadership*, *2014*(1), 67-74.

Ohio Department of Health (ODH). (2019). Unintentional drug overdose deaths of Ohio residents and average crude and age-adjusted death rates per 100,000 population by county. Retrieved on February 10, 2019, from http://publicapps.odh.ohio.gov/EDW/DataBrowser/Browse/Mortality.

O'Neil, S. S., Lake, T., Merrill, A., Wilson, A., Mann, D. A., & Bartnyska, L. M. (2010). Racial disparities in hospitalizations for ambulatory care–sensitive conditions. *American journal of preventive medicine*, *38*(4), 381-388.

Overton, T. L., Rives, T. E., Hecht, C., Shafi, S., & Gandhi, R. R. (2015). Distracted driving: prevalence, problems, and prevention. *International journal of injury control and safety promotion*, *22*(3), 187-192.

Ozawa, S., Portnoy, A., Getaneh, H., Clark, S., Knoll, M., Bishai, D., & Patwardhan, P. D. (2016). Modeling the economic burden of adult vaccine-preventable diseases in the United States. *Health Affairs*, *35*(11), 2124-2132.

Patrick, S. W., Fry, C. E., Jones, T. F., & Buntin, M. B. (2016). Implementation of prescription drug monitoring programs associated with reductions in opioid-related death rates. *Health Affairs*, *35*(7), 1324-1332.

Pelletier, J. E. (2014). Local Connections: Linking Urban Farmers with Food Vendors in North Minneapolis.

Pickett, K. E., Kelly, S., Brunner, E., Lobstein, T., & Wilkinson, R. G. (2005). Wider income gaps, wider waistbands? An ecological study of obesity and income inequality. *Journal of Epidemiology & Community Health*, *59*(8), 670-674.

Pi-Sunyer, X. (2009). The medical risks of obesity. *Postgraduate medicine*, *121*(6), 21-33.

Pompili, M., Serafini, G., Innamorati, M., Dominici, G., Ferracuti, S., Kotzalidis, G. D., & Sher, L. (2010). Suicidal behavior and alcohol abuse. *International journal of environmental research and public health*, *7*(4), 1392-1431.

Popova, S., Giesbrecht, N., Bekmuradov, D., & Patra, J. (2009). Hours and days of sale and density of alcohol outlets: impacts on alcohol consumption and damage: a systematic review. *Alcohol & Alcoholism*, *44*(5), 500-516.

Pothukuchi, K. (2005). Attracting supermarkets to inner-city neighborhoods: economic development outside the box. *Economic Development Quarterly*, *19*(3), 232-244.

Public Law 111-148 (2010). The Patient Protection and Affordable Care Act. United 14 States Government Printing Office.

Rainer, M., & Mucke, H. A. M. (2019). Management of Alzheimer's disease. *Hamdan Medical Journal*, *12*(2), 37.

Rajaratnam, S. M., Landrigan, C. P., Wang, W., Kaprielian, R., Moore, R. T., & Czeisler, C. A. (2015). Teen crashes declined after Massachusetts raised penalties for graduated licensing law restricting night driving. *Health Affairs*, *34*(6), 963-970.

Ramalho de Oliveira, D., Brummel, A. R., & Miller, D. B. (2010). Medication therapy management: 10 years of experience in a large integrated health care system. *Journal of Managed Care Pharmacy*, *16*(3), 185-195.

Rammohan, V., Hahn, R. A., Elder, R., Brewer, R., Fielding, J., Naimi, T. S., & Task Force on Community Preventive Services. (2011). Effects of dram shop liability and enhanced overservice law enforcement initiatives on excessive alcohol consumption and related harms: two Community Guide systematic reviews. *American journal of preventive medicine*, *41*(3), 334-343.

Rhone, A., Ver Ploeg, M., Williams, R., & Breneman, V. (2019). Understanding Low-Income and Low-Access Census Tracts Across the Nation: Subnational and Subpopulation Estimates of Access to Healthy Food (No. 1476-2019-1856).

Rice, T. M., & Anderson, C. L. (2009). The effectiveness of child restraint systems for children aged 3 years or younger during motor vehicle collisions: 1996 to 2005. *American Journal of Public Health*, *99*(2), 252-257.

Richardson, C. T., & Singal, A. K. (2019). Epidemiology of Alcoholic Liver Disease. In *Clinical Epidemiology of Chronic Liver Diseases* (pp. 75-98). Springer, Cham.

Roger, V. L., Go, A.S., Lloyd-Jones, D.M., Benjamin, E.J., Berry, J.D., Borden, W.B., Bravata, D.M., Dai, S., Ford, E.S., Fox, C.S., Fullerton, H.J., Gillespie, C., Hailpern, S.M., Heit, J.A., Howard, V.J., Kissela, B.M., Kittner, S.J., Lackland, D.T., Lichtman, J.H., Lisabeth, L.D., Makuc, D.M., Marcus, G.M., Marelli, A., Matchar, D.B., Moy, C.S., Mozaffarian, D., Mussolino, M.E., Nichol, G., Paynter, N.P., Soliman, E.Z., Sorlie, P.D., Sotoodehnia, N., Turan, T.N., Virani, S.S., Wong, N.D., Woo, D., Turner, M.B.,. (2012). *Heart disease and stroke statistics—2012 update: a report from the American Heart Association Circulation*, *125*, e2.

Roh, B. R., Jung, E. H., & Hong, H. J. (2018). A comparative study of suicide rates among 10–19-year-olds in 29 OECD countries. *Psychiatry investigation*, *15*(4), 376.

Rosano, A., Loha, C. A., Falvo, R., Van der Zee, J., Ricciardi, W., Guasticchi, G., & De Belvis, A. G. (2012). The relationship between avoidable hospitalization and accessibility to primary care: a systematic review. *The European Journal of Public Health*, *23*(3), 356-360.

Rosekind, M. R. (2018). Effective Alcohol Policies—Saving Lives on US Roadways. *JAMA internal medicine*, *178*(7), 901-902.

Rosenthal, R. J., Morton, J., Brethauer, S., Mattar, S., De Maria, E., Benz, J. K., & Sterrett, D. (2017). Obesity in America. *Surgery for Obesity and Related Diseases*, *13*(10), 1643-1650.

Ruch, D. A., Sheftall, A. H., Schlagbaum, P., Rausch, J., Campo, J. V., & Bridge, J. A. (2019). Trends in suicide among youth aged 10 to 19 years in the United States, 1975 to 2016. *JAMA network open*, *2*(5), e193886-e193886.

Rudd, R. A., Aleshire, N., Zibbell, J. E., & Matthew Gladden, R. (2016). Increases in drug and opioid overdose deaths—United States, 2000–2014. *American Journal of Transplantation*, *16*(4), 1323-1327.

Sanchez-Vaznaugh, E. V., Sánchez, B. N., Baek, J., & Crawford, P. B. (2010). 'Competitive'food and beverage policies: are they influencing childhood overweight trends? *Health Affairs*, *29*(3), 436-446.

Schmitt, A., Gahr, A., Hermanns, N., Kulzer, B., Huber, J., & Haak, T. (2013). The Diabetes Self-Management Questionnaire (DSMQ): development and evaluation of an instrument to assess diabetes self-care activities associated with glycaemic control. *Health and quality of life outcomes*, *11*(1), 138.

Scholl, L., Seth, P., Kariisa, M., Wilson, N., & Baldwin, G. (2019). Drug and opioid-involved overdose deaths—United States, 2013–2017. *Morbidity and Mortality Weekly Report*, *67*(5152), 1419.

Schuckit, M. A. (2009). Alcohol-use disorders. *The Lancet*, *373*(9662), 492-501.

Shah, S. J., & Stafford, R. S. (2018). Patterns of systolic blood pressure control in the United States, 2016. *Journal of general internal medicine*, *33*(8), 1224-1226.

Shimbo, D., Abdalla, M., Falzon, L., Townsend, R. R., & Muntner, P. (2015). Role of ambulatory and home blood pressure monitoring in clinical practice: a narrative review. *Annals of internal medicine*, *163*(9), 691.

Shults, R. A., Elder, R. W., Nichols, J. L., Sleet, D. A., Compton, R., Chattopadhyay, S. K., & Task Force on Community Preventive Services. (2009). Effectiveness of multicomponent programs with community mobilization for reducing alcohol-impaired driving. *American journal of preventive medicine*, *37*(4), 360-371.

Shore, B., & Shore, R. (2009). Kids count indicator brief: Reducing the teen death rate.

Sidney, S., Quesenberry, C. P., Jaffe, M. G., Sorel, M., Nguyen-Huynh, M. N., Kushi, L. H., & Rana, J. S. (2016). Recent trends in cardiovascular mortality in the United States and public health goals. *JAMA cardiology*, *1*(5), 594-599.

Smith, J. P., & Book, S. W. (2010). Comorbidity of generalized anxiety disorder and alcohol use disorders among individuals seeking outpatient substance abuse treatment. *Addictive Behaviors*, *35*(1), 42-45.

Smith-Millman, M. K., & Flaspohler, P. D. (2019). School-Based Suicide Prevention Laws in Action: A Nationwide Investigation of Principals' Knowledge of and Adherence to State School-Based Suicide Prevention Laws. *School Mental Health*, *11*(2), 321-334.

Song, C., Li, J., Leng, J., Ma, R. C., & Yang, X. (2016). Lifestyle intervention can reduce the risk of gestational diabetes: a meta-analysis of randomized controlled trials. *Obesity reviews*, *17*(10), 960-969.

Spears, M. M. (2018). Nonpharmacological Behavioral Interventions for Patients with Dementia: An Integrative Literature Review.

Spencer, M. R., Warner, M., Bastian, B. A., Trinidad, J. P., & Hedegaard, H. (2019). Drug Overdose Deaths Involving Fentanyl, 2011-2016. *National vital statistics reports: from the Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System*, *68*(3), 1-19.

Spring, B., Duncan, J. M., Janke, E. A., Kozak, A. T., McFadden, H. G., DeMott, A., & Buscemi, J. (2013). Integrating technology into standard weight loss treatment: a randomized controlled trial. *JAMA internal medicine*, *173*(2), 105-111.

Steinka-Fry, K. T., Tanner-Smith, E. E., & Hennessy, E. A. (2015). Effects of brief alcohol interventions on drinking and driving among youth: a systematic review and meta-analysis. *Journal of addiction & prevention*, *3*(1).

Sutin, A. R., Ferrucci, L., Zonderman, A. B., & Terracciano, A. (2011). Personality and obesity across the adult life span. *Journal of personality and social psychology*, *101*(3), 579.

Swedler, D. I., Bowman, S. M., & Baker, S. P. (2012). Gender and age differences among teen drivers in fatal crashes. In *Annals of Advances in Automotive Medicine/Annual Scientific Conference* (Vol. 56, p. 97). Association for the Advancement of Automotive Medicine.

Swendsen, J., Burstein, M., Case, B., Conway, K. P., Dierker, L., He, J., & Merikangas, K. R. (2012). Use and abuse of alcohol and illicit drugs in US adolescents: Results of the National Comorbidity Survey–Adolescent Supplement. *Archives of general psychiatry*, *69*(4), 390-398.

Syed, S. T., Gerber, B. S., & Sharp, L. K. (2013). Traveling towards disease: transportation barriers to health care access. *Journal of community health*, *38*(5), 976-993.

Szatkowski, L., & McNeill, A. (2013). The delivery of smoking cessation interventions to primary care patients with mental health problems. *Addiction*, *108*(8), 1487-1494.

Task Force on Community Preventive Services. (2011). Recommendations on the effectiveness of ignition interlocks for preventing alcohol-impaired driving and alcohol-related crashes. *American journal of preventive medicine*, *40*(3), 377-377.

Taylor, S. J., Pinnock, H., Epiphaniou, E., Pearce, G., Parke, H. L., Schwappach, A., & Sheikh, A. (2014). A rapid synthesis of the evidence on interventions supporting self-management for people with long-term conditions: PRISMS–Practical systematic Review of Self-Management Support for long-term conditions.

Teutsch, S. M., & Naimi, T. S. (2018). Eliminating Alcohol-Impaired Driving Fatalities: What Can Be Done? *Annals of internal medicine*, *168*(8), 587-589.

Thota, A. B., Sipe, T. A., Byard, G. J., Zometa, C. S., Hahn, R. A., McKnight-Eily, L. R., & Gelenberg, A. J. (2012). Collaborative care to improve the management of depressive disorders: a community guide systematic review and meta-analysis. *American journal of preventive medicine*, *42*(5), 525-538.

Tricco, A. C., Ivers, N. M., Grimshaw, J. M., Moher, D., Turner, L., Galipeau, J., & Tonelli, M. (2012). Effectiveness of quality improvement strategies on the management of diabetes: a systematic review and meta-analysis. *The Lancet*, *379*(9833), 2252-2261.

United States Census Bureau (USCB). (2017). 2017 American Housing Survey. Retrieved on June 12, 2019 from https://www.census.gov/programs-surveys/ahs/tech-documentation/def-errors-changes.html.

United States Department of Agriculture (USDA). (2012). U.S. Household Food Security Survey Module: Six-item Short Form. Retrieved on June 12, 2019 from https://www.ers.usda.gov/media/8282/short2012.pdf.

United States Department of Health and Human Services (HHS). (2009). National healthcare disparities report. *Rockville, MD: Agency for Healthcare Research and Quality*.

United States Department of Justice (USDOJ). (2017). National Crime Victimization Survey. Retrieved on June 12, 2019 from https://www.bjs.gov/content/pub/pdf/ncvs17_bsq.pdf.

Wagenaar, A. C., Salois, M. J., & Komro, K. A. (2009). Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies. *Addiction*, *104*(2), 179-190.

Wang, Y., & Beydoun, M. A. (2007). The obesity epidemic in the United States—gender, age, socioeconomic, racial/ethnic, and geographic characteristics: a systematic review and meta-regression analysis. *Epidemiologic reviews*, *29*(1), 6-28.

Wang, Y., Wu, Y., Wilson, R. F., Bleich, S., Cheskin, L., Weston, C., & Segal, J. (2013). Childhood obesity prevention programs: comparative effectiveness review and meta-analysis. In *Database of Abstracts of Reviews of Effects (DARE): Quality-assessed Reviews [Internet]*. Centre for Reviews and Dissemination (UK).

Whelton, P. K., Carey, R. M., Aronow, W. S., Casey, D. E., Collins, K. J., Himmelfarb, C. D., & MacLaughlin, E. J. (2018). 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Journal of the American College of Cardiology*, *71*(19), e127-e248.

World Health Organization. (2004). Promoting mental health: Concepts, emerging evidence, practice: Summary report.

Yang, J., Kingsbury, D., Nichols, M., Grimm, K., Ding, K., & Hallam, J. (2015). Using a qualitative approach for understanding hospital-affiliated integrated clinical and fitness facilities: characteristics and members' experiences. *BMC public health*, *15*(1), 567.

Yu, Q., Scribner, R. A., Leonardi, C., Zhang, L., Park, C., Chen, L., & Simonsen, N. R. (2017). Exploring racial disparity in obesity: a mediation analysis considering geo-coded environmental factors. *Spatial and spatio-temporal epidemiology*, *21*, 13-23.

Zalsman, G., Hawton, K., Wasserman, D., van Heeringen, K., Arensman, E., Sarchiapone, M., & Purebl, G. (2016). Suicide prevention strategies revisited: 10-year systematic review. *The Lancet Psychiatry*, *3*(7), 646-659.

Zick, C. D., Smith, K. R., Fan, J. X., Brown, B. B., Yamada, I., & Kowaleski-Jones, L. (2009). Running to the store? The relationship between neighborhood environments and the risk of obesity. *Social science & medicine*, *69*(10), 1493-1500.

6. Appendix

6.1 Secondary Data Sources and Definitions

Measure	Data Year	Category	Source	Data Definition
Table 1. *Unranked Secondary Data*				
Total Population	2017	Population	American Fact Finder	Total population, based on the 2017 American Community Survey 1-year estimate.
Male Residents	2017	Population	American Fact Finder	Total male population, based on the 2017 American Community Survey 1-year estimate.
Female Residents	2017	Population	American Fact Finder	Total female population, based on the 2017 American Community Survey 1-year estimate.
Households with Children under 18 Years of Age	2017	Population	American Fact Finder	All occupied households in the report area are family households with one or more children under the age of 18, based on the 2017 American Community Survey 1-year estimate. As defined by the US Census Bureau, a family household is any housing unit in which the householder is living with one or more individuals related to him or her by birth, marriage, or adoption. A non-family household is any household occupied by the householder alone, or by the householder and one or more unrelated individuals.
Population 0 to 4 Years of Age	2017	Population	American Fact Finder	Total population percentage by age group, as identified by the 2017 American Community Survey 1-year estimate.
Population 5 to 17 Years of Age	2017	Population	American Fact Finder	Total population percentage by age group, as identified by the 2017 American Community Survey 1-year estimate.
Population 65 Years of Age and Older	2017	Population	American Fact Finder	Total population percentage by age group, as identified by the 2017 American Community Survey 1-year estimate.

Measure	Data Year	Category	Source	Data Definition
Table 2. *Unranked Secondary Data (continued)*				
Non-Hispanic White Population	2017	Population	American Fact Finder	Total percentage of the population that is non-Hispanic white, as identified by the 2017 American Community Survey 1-year estimate.
African American Population	2017	Population	American Fact Finder	Total percentage of the population that is non-Hispanic African American, as identified by the 2017 American Community Survey 1-year estimate.
Hispanic Population	2013-2017	Population	American Fact Finder	Total percentage of the population that is Hispanic or Latino, as identified by the 2013-2017 American Community Survey 5-year estimate.
Asian Population	2017	Population	American Fact Finder	Total percentage of the population that is Asian, as identified by the 2017 American Community Survey 1-year estimate.
Native Hawaiian or Pacific Islander Population	2017	Population	American Fact Finder	Total percentage of the population that is Native Hawaiian or Pacific Islander, as identified by the 2017 American Community Survey 1-year estimate.
American Indian or Alaskan Native Population	2017	Population	American Fact Finder	Total percentage of the population that is American Indian or Alaska Native, as identified by the 2017 American Community Survey 1-year estimate.
Foreign-born Population	2013-2017	Population	American Fact Finder	Percentage of the population that is foreign-born, as identified by the 2013-2017 American Community Survey 5-year estimate. The foreign-born population includes anyone who was not a U.S. citizen or a U.S. national at birth. This includes any non-citizens, as well as persons born outside of the U.S. who have become naturalized citizens. The native U.S. population includes any person born in the United States, Puerto Rico, a U.S. Island Area (such as Guam), or abroad of American (U.S. citizen) parent or parents.

Measure	Data Year	Category	Source	Data Definition
Table 3. *Unranked Secondary Data (continued)*				
Children with Elevated Blood Lead Levels	2016	Pollution	Ohio Department of Health, Centers for Disease Control	Children under the age of six years of age who tested positive for elevated blood lead levels (>5ug/dl).
Active National Priority List	2019	Pollution	Homefacts.com	Number of active National Priority List (NPL) Superfund Sites.
Active Non-national Priority List	2019	Pollution	Homefacts.com	Number of active Non-NPL Superfund Sites.
Resolved Superfund Sites	2019	Pollution	Homefacts.com	Number of resolved (archived) Superfund Sites.
Adults with Private Health Insurance	2016	Insurance and Healthcare Cost	Network of Care	Percentage of adults 18 to 64 years of age who either receive health insurance through their employer, or purchase it privately.
Mean Daily Air Pollution Density (in pounds)	2017	Pollution	Toxic Release Inventory	Mean daily on-site disposal and/or release of toxic chemicals, including copper, ammonia, arsenic, barium, manganese, nitrate compounds, lead, zinc, and others, into the air, in pounds.

Table 4. *Unfavorable to Zero Benchmarks*

Measure	Data Year	Category	Source	Data Definition
Population Over 25 Years of Age with A BA or Higher	2016	Population	Network of Care, American Fact Finder	Percentage of people 25 years of age and older who have earned a Bachelor's degree or higher.
Math Proficient 8th Graders	2017-2018	Population	Network of Care, National Assessment of Educational Progress	Percentage of eighth grade students scoring proficient or advanced for their grade level in mathematics.
Households Receiving SNAP	2015	Economic Status	Community Commons	Estimated percentage of households receiving Supplemental Nutrition Assistance Program (SNAP) benefits.
Households Receiving Public Assistance	2017	Economic Status	American Fact Finder	Percentage of households that have received public assistance in the past 12 months.
Families Below Poverty Level	2017	Economic Status	American Fact Finder	Percentage of families with income 150% below the federal poverty level, as identified by the 2017 American Community Survey 1-year estimate.
Renting Households	2017	Housing	American Fact Finder	Percentage of renter-occupied housing units, as identified by the 2017 American Community Survey 1-year estimate.
Mean Radon Test Results (in picocuries)	2019	Pollution	Radon.com	Mean indoor radon level in picocuries.
Population Commuting to Work Over 60 Minutes	2013-2017	Built Environment	Community Commons	The percentage of the population that commutes to work for over 60 minutes in each direction.
Residents with Internet Access	2016	Built Environment	Community Commons	Percentage of population with access to high-speed internet, as characterized by wireline and/or wireless with DL speeds greater than 25 mbps.

Measure	Data Year	Category	Source	Data Definition
Table 5. *Unfavorable to Zero Benchmarks (continued)*				
Adults with Fair or Poor Health	2016	Diet and Exercise	Network of Care	Adults 18 years of age and older who self-report having poor or fair health in response to the question "Would you say that in general your health is excellent, very good, good, fair, or poor"?
Obese Adults	2015	Diet and Exercise	Community Commons	Percentage of adults 20 years of age and older who self-report that they have a Body Mass Index (BMI) greater than 30.
Adults Not Physically Active	2015	Diet and Exercise	Community Commons	Adults 20 years of age and older who self-report no leisure time for activity, based on the question: "During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise"?
Motor Vehicle Accident-related Death Rate (per 100,000)	2016-2017	Injury and Accidents	CDC WONDER	Age-adjusted rate of death due to motor vehicle crashes population, which include collisions with another motor vehicle, a non-motorist, a fixed object, and a non-fixed object, an overturn, and any other non-collision, per 100,000 population.
Mean Poor Mental Health Days	2016	Mental Health	County Health Rankings	Age-adjusted mean number of mentally unhealthy days reported in past 30 days.
Teen Birth Rate (per 1,000)	2010-2016	Obstetrics	County Health Rankings, Health and Human Services	Age-adjusted birth rate per 1,000 female population, 15 to 19 years of age.
Infant Mortality Rate (per 1,000 live births)	2017	Obstetrics	Ohio Department of Health, Centers for Disease Control and Prevention	Age-adjusted infant mortality rate per 1,000 live births.

Measure	Data Year	Category	Source	Data Definition
Table 6. *Unfavorable to Zero Benchmarks (continued)*				
Pertussis Rate (per 100,000)	2016	Infectious Disease	Network of Care, Centers for Disease Control and Prevention	Pertussis incidence rate per 100,000 population (including probable and confirmed cases).
Mumps Rate (per 100,000)	2016	Infectious Disease	Network of Care, Centers for Disease Control and Prevention	Mumps incidence rate per 100,000 population.
Breast Cancer Death Rate (per 100,000)	2016	Cancer	Ohio Department of Health, National Vital Statistics System	Age-adjusted breast cancer death rate per 100,000 population. Figures are age-adjusted to year 2000 standard, and are summarized for report areas from county level data where data is available.
Colorectal Cancer Rate (per 100,000)	2016	Cancer	Ohio Department of Health, Siegel et al. 2016	Age adjusted colorectal cancer incidence rate per 100,000 population. The national value represents a crude rate.
Lung and Bronchus Cancer Rate (per 100,000)	2016	Cancer	Ohio Department of Health, Siegel et al. 2016	Age-adjusted invasive lung and bronchus cancer incidence rate per 100,000 population. The national value represents a crude rate.
Adults with Diabetes	2015	Chronic Disease	Community Commons	Percentage of adults 20 years of age and older who have ever been told by a doctor that they have diabetes.
Medicare Population with Diabetes	2015	Chronic Disease	Community Commons	Percentage of the Medicare fee-for-service population with diabetes.
Diabetes Death Rate (per 100,000)	2017	Chronic Disease	CDC WONDER	Age-adjusted diabetes mellitus death rate per 100,000 population.
Alzheimer's Disease Death Rate (per 100,000)	2017	Chronic Disease	CDC WONDER	Age-adjusted Alzheimer's disease death rate per 100,000 population.

Measure	Data Year	Category	Source	Data Definition
Single Parent Households	2013-2017	Population	American Fact Finder	Percentage of households by composition, as identified by the American Community Survey 2013-2017 5-year estimate.
Reading Proficient 4th Graders	2017-2018	Education	Network of Care	Percentage of fourth grade students scoring proficient or advanced for their grade level in reading.
Children Living Below the Poverty Level	2016	Economic Status	Network of Care	The percentage of people who are below poverty, and are under 18 years of age. People and families are classified as being in poverty if their income is less than their poverty threshold. If their income is less than half their poverty threshold, they are below 50% of poverty; less than the threshold itself, they are in poverty (below 100% of poverty); less than 1.25 times the threshold, below 125% of poverty, and so on. The greater the ratio of income to poverty, the more people fall under the category, because higher ratios include more people with higher incomes.
Mean Daily Ambient Particulate Matter	2012	Pollution	Community Commons	Mean daily ambient particulate matter 2.5.

Note: The title row above reads — **Table 7.** *Unfavorable to Zero Benchmarks (continued)*

Table 8. *Unfavorable to One Benchmark*

Measure	Data Year	Category	Source	Data Definition
Grocery Store Rate (per 100,000)	2016	Built Environment	Community Commons	The number of grocery stores per 100,000 population.
Dentist Rate (per 100,000)	2015	Healthcare Access and Utilization	Community Commons	The rate of dentists per 100,000 population.
Women Receiving Mammography Screenings	2015	Healthcare Access and Utilization	Community Commons	Percentage of female Medicare enrollees, 67 to 69 years of age, who received one or more mammograms in the past two years.
Adults without Health Insurance	2016	Insurance and Healthcare Cost	Network of Care	Percentage of adults 18 to 64 years of age that have no health insurance coverage.
Children without Health Insurance	2016	Insurance and Healthcare Cost	Network of Care	Percentage of children 0 to 17 years of age with no health insurance coverage.
Access to Exercise Opportunities	2016	Diet and Exercise	Community Commons	The rate of recreation and fitness facilities, as defined by the North American Industry Classification System (NAICS) Code 713940, per 100,000 population.
Firearm-related Death Rate (per 100,000)	1999-2017	Injury and Accidents	CDC WONDER	Age-adjusted rate of age-adjusted death due to firearm related injuries, accidental and intentional, per 100,000 population.
Violent Crime Rate (per 100,000)	2012-2014	Crime and Violence	Community Commons	The crude rate of violent crime incidents, including homicide, rape, robbery, and aggravated assault, per 100,000 population.
Homicide Death Rate (per 100,000)	2006-2017	Crime and Violence	CDC WONDER	Age-adjusted homicide death rate per 100,000 population. Figures are age-adjusted to year 2000 standard, and are resummarized for report areas from county level data where data is available.

Measure	Data Year	Category	Source	Data Definition
Table 9. *Unfavorable to One Benchmark (continued)*				
Adults Excessively Using Alcohol	2016	Substance Use and Abuse	County Health Rankings	Percentage of adults 18 years of age or older who binge or heavy drinking in the past 30 days.
Population with a Disability	2013-2017	Mental Health	Community Commons	The percentage of the total civilian non-institutionalized population with a disability.
Medicare Population with Depression	2015	Mental Health	Community Commons	Percentage of the Medicare fee-for-service population with depression.
Suicide Death Rate, 25 to 64 Years of Age	2016-2017	Mental Health	CDC WONDER	Age-adjusted suicide death rate for those 25 to 64 years of age per 100,000 population.
Suicide Death Rate, 65 Years of Age and Older (per 100,000)	2013-2017	Mental Health	CDC WONDER	Age-adjusted suicide death rate for those 65 years of age and older per 100,000 population.
Infants with Low Birth Weight	2017	Obstetrics	KidsCount, Centers for Disease Control and Prevention	Percentage of infants born below 5 pounds, 8 ounces.
Chlamydia Rate (per 100,000)	2017	Sexual Behavior and STIs	Network of Care, Centers for Disease Control and Prevention	Chlamydia incidence rate per 100,000 population.
Gonorrhea Rate (per 100,000)	2017	Sexual Behavior and STIs	Network of Care, Centers for Disease Control and Prevention	Gonorrhea incidence rate per 100,000 population.
Syphilis Rate (per 100,000)	2017	Sexual Behavior and STIs	Network of Care, Centers for Disease Control and Prevention	Syphilis incidence rate per 100,000 population.

Measure	Data Year	Category	Source	Data Definition
Table 10. *Unfavorable to One Benchmark (continued)*				
HIV Rate (per 100,000)	2017	Sexual Behavior and STIs	Network of Care, Centers for Disease Control and Prevention	HIV prevalence rate per 100,000 population.
Hepatitis A, B, and C Rate (per 100,000)	2016	Infectious Disease	Network of Care	Hepatitis A, B and C incidence rate per 100,000 population.
Tuberculosis Rate (per 100,000)	2017	Infectious Disease	Network of Care, Centers for Disease Control and Prevention	Tuberculosis incidence rate per 100,000 population.
Salmonella Rate (per 100,000)	2016	Infectious Disease	Network of Care, Centers for Disease Control and Prevention	Salmonella incidence rate per 100,000 population.
Cancer Rate (per 100,000)	2016	Cancer	Ohio Department of Health, American Cancer Society	Age-adjusted invasive cancer incidence rate per 100,000 population.
Cervical Cancer Rate (per 100,000 females)	2016	Cancer	Ohio Department of Health, Siegel et al. 2016	Age-adjusted invasive cervix cancer incidence rate per 100,000 female population. The national value represents a crude rate.
Ovarian Cancer Rate (per 100,000 females)	2016	Cancer	Ohio Department of Health, Siegel et al. 2016	Age-adjusted invasive ovarian cancer incidence rate per 100,000 female population. The national value represents a crude rate.
Women Over 50 Getting a Mammogram	2014	Cancer	Network of Care	Percentage of women 50 years of age and older who received a mammogram in the past 2 years.
Breast Cancer Rate (per 100,000)	2016	Cancer	Ohio Department of Health, Siegel et al. 2016	Age-adjusted invasive breast cancer incidence rate per 100,000 population. The national value represents a crude rate.
High Blood Pressure Death Rate	2015-2017	Chronic Disease	CDC WONDER	Age-adjusted high blood pressure death rate per 100,000 population.
Stroke Death Rate (per 100,000)	2017	Chronic Disease	CDC WONDER	Age-adjusted stroke death rate per 100,000 population.

Table 11. *Unfavorable to Two Benchmarks*

Measure	Data Year	Category	Source	Data Definition
Disabled Population	2017	Population	American Fact Finder	Percentage of the total civilian non-institutionalized population with a disability, as identified by the 2017 American Community Survey 1-year estimate.
Population Not Graduating High School	2015-2016	Education	Community Commons	Percentage of high school students that do not receive their high school diploma within four years.
Reading Proficient 8th Graders	2017-2018	Education	Network of Care, National Assessment of Educational Progress	The percentage of eighth grade students scoring proficient or advanced for their grade level in reading.
Math Proficient 4th Graders	2017-2018	Education	Network of Care, National Assessment of Educational Progress	Percentage of fourth grade students scoring proficient or advanced for their grade level in mathematics.
Unemployed Adults	2017	Economic Status	American Fact Finder	Civilian non-institutionalized population age 16 and older that are currently unemployed, as identified by the 2017 American Community Survey 1-year estimate.
Median Monthly Owner-occupied Housing Costs	2017	Housing	American Fact Finder	Median monthly housing costs per owner-occupied housing, as identified by the 2017 American Community Survey 1-year estimate.
Median Monthly Renter-occupied Housing Costs	2017	Housing	American Fact Finder	Median monthly housing costs per renter-occupied housing, as identified by the 2017 American Community Survey 1-year estimate.
Rate of Mental Health Provider Access (per 100,000)	2018	Healthcare Access and Utilization	Community Commons	Rate of mental health providers, including psychiatrists, psychologists, clinical social workers, and counsellors that specialize in mental health care, per 100,000 population.

Table 12. *Unfavorable to Two Benchmarks (continued)*

Measure	Data Year	Category	Source	Data Definition
Diabetics 65 Years of Age and Older Receiving a Screening	2015	Healthcare Access and Utilization	Network of Care	The percentage of diabetic Medicare patients who have had a hemoglobin A1c (hA1c) test, administered by a health care professional in the past year.
Percentage of Adult Smokers	2016	Substance Use and Abuse	County Health Rankings, Centers for Disease Control and Prevention	Percentage of adults 18 years of age and older who are current smokers.
Viral Meningitis Rate (per 100,000)	2016	Infectious Disease	Network of Care, Centers for Disease Control and Prevention	Viral Meningitis incidence rate per 100,000 population.
Cancer Death Rate (per 100,000)	2017	Cancer	Ohio Department of Health, Henry J. Kaiser Foundation	Age-adjusted cancer death rate per 100,000 population. Figures are age-adjusted to year 2000 standard, and are resummarized for report areas from county level data where data is available.
Women Over 18 Years of Age Getting a Pap Smear	2006-2012	Cancer	Network of Care, National Health Interview Survey	Percentage of women 18 years of age and older who received a pap smear in the last 3 years.
Residents 50 Years of Age and Older Getting a Colonoscopy	2006-2012	Cancer	Network of Care, Centers for Disease Control and Prevention	Percentage of adults 50 years of age and older who had a colonoscopy or sigmoidoscopy in their lifetime.
Prostate Cancer Rate	2016	Cancer	Ohio Department of Health	Age-adjusted invasive prostate cancer incidence rate per 100,000 male population.
Heart Failure Death Rate (per 100,000)	2017	Chronic Disease	CDC WONDER	Age-adjusted heart failure death rate per 100,000 population.
Medicare Population with Heart Failure	2015	Chronic Disease	Centers for Medicare and Medicaid Services	Percentage of Medicare beneficiaries with heart failure.

Table 13. *Unfavorable to Two Benchmarks (continued)*				
Measure	Data Year	Category	Source	Data Definition
Medicare Population with Asthma	2015	Chronic Disease	Centers for Medicare and Medicaid Services	Percentage of Medicare beneficiaries who have asthma.

Table 14. *Unfavorable to Three Benchmarks*

Measure	Data Year	Category	Source	Data Definition
Non-fluent English Speakers	2017	Population	American Fact Finder	Percentage of the population, 5 years of age and older, who speak a language other than English at home, and speak English less than "very well", as identified by the 2017 American Community Survey 1 -year estimate.
Median Household Income	2017	Economic Status	American Fact Finder	Median household income in the past 12 months (in 2017 inflation-adjusted dollars), as identified by the 2017 American Community Survey 1-year estimate.
Renters Spending 30% of Income or More on Monthly Rent	2017	Housing	American Fact Finder	Percentage of renters who are paying 30% or more of household income on rent, as identified by the 2017 American Community Survey 1-year estimate.
Primary Care Physician Rate (per 100,000)	2014	Healthcare Access and Utilization	Community Commons	The rate of primary care physicians per 100,000 population. Doctors classified as "primary care physicians" by the American Medical Association include: General Family Medicine MDs and DOs, General Practice MDs and DOs, General Internal Medicine MDs and General Pediatrics MDs. Physicians 75 years of age and older, and physicians practicing sub-specialties within the listed specialties, are excluded.
Federally Qualified Health Center Rate	2018	Healthcare Access and	Community Commons	The rate of FQHCs per 100,000 population.
Suicide Death Rate, 0 to 24 Years of Age	2010-2017	Mental Health	CDC WONDER	Age-adjusted suicide death rate for those 0 to 24 years of age per 100,000 population.
Suicide Death Rate (per 100,000)	2017	Mental Health	CDC WONDER	Age-adjusted suicide death rate per 100,000 population. Figures are age-adjusted to year 2000 standard, and are resummarized for report areas from county level data where data is available.

Table 15. *Unfavorable to Three Benchmarks (continued)*

Measure	Data Year	Category	Source	Data Definition
Uterine Cancer Rate (per 100,000 females)	2016	Cancer	Ohio Department of Health, Siegel et al. 2016	Age-adjusted invasive uterine cancer incidence rate per 100,000 female population. The national value represents a crude rate.
Colorectal Cancer Death Rate (per 100,000)	2016	Cancer	Ohio Department of Health, National Vital Statistics System	Age-adjusted colorectal cancer death rate per 100,000 population. Figures are age-adjusted to year 2000 standard, and are resummarized for report areas from county level data where data is available.
Lung and Bronchus Cancer Death Rate (per 100,000)	2016	Cancer	Ohio Department of Health, Siegel et al. 2016	Age-adjusted lung and bronchus cancer death rate per 100,000 population. The national value represents a crude rate.
Heart Disease Death Rate (per 100,000)	2017	Chronic Disease	CDC WONDER	Age-adjusted heart disease death rate per 100,000 population.
Parkinson's Disease Death Rate	2017	Chronic Disease	CDC WONDER	Age-adjusted Parkinson's disease death rate per 100,000 population.

Measure	Data Year	Category	Source	Data Definition
Table 16. *Unfavorable to Four Benchmarks*				
Rate of Fast Food Restaurants (per 100,000)	2016	Built Environment	Community Commons	Rate of fast food restaurants per 100,000 population. Fast food restaurants are defined as limited-service establishments primarily engaged in providing food services (except snack and nonalcoholic beverage bars) where patrons generally order or select items and pay before eating.
Medicare Patient Preventable Hospitalization Rate	2015	Healthcare Access and Utilization	Community Commons	Discharge rate per 1,000 Medicare enrollees for conditions that are ambulatory care sensitive (ACS). ACS conditions include pneumonia, dehydration, asthma, diabetes, and other conditions which could have been prevented if adequate primary care resources were available and accessed by those patients.
Population with Limited Access to Healthy Foods	2015	Diet and Exercise	Community Commons	The percentage of the population with low food access. Low food access is defined as living more than a half mile from the nearest supermarket, supercenter, or large grocery store, and highlights populations and geographies facing food insecurity.
Teen Death Rate from Accidents, Homicides, and Suicides (per 100,000)	2016-2017	Injury and Accidents	CDC WONDER	Crude rate of teen deaths resulting from accidents, homicides, and suicides, among individuals 15 to 19 years of age, per 100,000 population.
Fall Death Rate (per 100,000)	2015	Injury and Accidents	CDC WONDER	Age-adjusted death rate due to falls per 100,000 population.
Driving Deaths Associated with Alcohol	2012-2016	Substance Use and Abuse	Network of Care, County Health Rankings, National Highway Traffic Safety Administration	Percentage of driving deaths with alcohol involvement.

Measure	Data Year	Category	Source	Data Definition
Table 17. *Unfavorable to Four Benchmarks (continued)*				
Alcohol-related Death Rate (per 100,000)	2016-2017	Substance Use and Abuse	CDC WONDER	Age-adjusted alcohol-related death rate per 100,000 population.
Drug Overdose Death Rate (per 100,000)	2017	Substance Use and Abuse	Ohio Department of Health, Centers for Disease Control and Prevention	Age-adjusted unintentional drug overdose death rate per 100,000 population.
Medicare Population with High Blood Pressure	2015	Chronic Disease	Community Commons	Percentage of Medicare fee-for-service population with high blood pressure.
Medicare Population with Heart Disease	2015	Chronic Disease	Community Commons	Percentage of the Medicare fee-for-service population with heart disease.
Medicare Population with Alzheimer's	2015	Chronic Disease	Centers for Medicare and Medicaid Services	Percentage of Medicare beneficiaries with Alzheimer's disease, or related disorders.