

**SHAPE
2022**

HENNEPIN COUNTY
PUBLIC HEALTH

SHAPE 2022 Public Use Data File User Guide



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This report was prepared by

Christine Ashley-Norberg, M.P.H, M.A.
Hennepin County Public Health

Mei Ding, M.D., M.S.
Hennepin County Public Health

Kelly Hughes, Ph.D.
Hennepin County Public Health

Urban Landreman, M.S., M.B.A.
Hennepin County Public Health

Komal Mehrotra, M.H.S., M.S.
Hennepin County Public Health

SHAPE 2022 Project Staff

Amy Leite Bennett, Project Manager,
Hennepin County Public Health

Omer Ali, Christine Ashley-Norberg, Fati Craighead,
Mei Ding, Nick Fortmeyer, Urban Landreman, Komal
Mehrotra, Natalia Nice, Eidan Silver,
Hennepin County Public Health

The SHAPE 2022 project staff would like to thank the individuals who contributed significantly to this report by proving administrative leadership, expert advice, and technical assistance. These individuals include the following:

Project Leadership Team

Susan Palchick, Amy Caron, Alisa Johnson
Hennepin County Public Health

Suggested Citation

Hennepin County Public Health, SHAPE 2022 Public Use File User Guide, Survey of the Health of All the Population and the Environment, Minneapolis, Minnesota, Draft version: July 23, 2024

Table of Contents

Introduction	3
About SHAPE 2022	
Innovations for SHAPE 2022	
Survey methodology	5
Target population	
Primary data reporting areas	
The sampling strata	
Sampling frame and strategy	
Data collection and mail plus sample	8
Mail survey	
In-person survey	
The mail plus sample	
Survey response and data reporting	11
Survey response rate	
Who responded to the survey	
Data preparation	
Data scanning and quality control	
Open-ended text data coding	
Data cleaning and data quality	
Weighting of sample data	
Data analysis	
Public use data file	19
Variables in the Public Use Data File	
Data dictionary	
Limitations and potential source of bias	
How to access and use the Public Use Data File	22
Access the data file	
How to contact the SHAPE project team	
Appendices	
A. Data dictionary	24
B. Survey questionnaire (mail version)	55
C. Technical notes	68
References	98

Acknowledgements

SHAPE 2022 was a collaborative project led by Hennepin County Public Health. The SHAPE 2022 project staff would like to thank the many individuals, community organizations, and subject matter experts who provided advice and support for the development of the project, especially the more than 10,000 residents of Hennepin County who generously took time to complete the SHAPE 2022 survey.

Project consultants

Kathleen Call, Ph.D., School of Public Health,
University of Minnesota
Michael Davern, Ph.D., NORC Research Center,
University of Chicago
Jay Desai, Ph.D., M.P.H.,
Minnesota Department of Health
Don Dillman, Ph.D.,
Social and Economic Sciences Research Center (SESRC)
at Washington State University
Jason Fields, Ph.D., United States Census Bureau
Todd Hughes, CA Health Interview Survey, UCLA
Ann Kinney, Ph.D.,
former Minnesota Department of Health
Tess Konen, M.P.H., Minnesota Department of Health
Nicole MartinRogers, Ph.D., M.P.P.,
Amherst H. Wilder Foundation
Grace Medley, M.S., National Health Interview Survey
National Center for Health Statistics,
Centers for Disease Control
Kate Murray, M.P.H., Minnesota Department of Health
Todd Rockwood, Ph.D., School of Public Health,
University of Minnesota

Community Partners

CAPI USA
East Lake Clinic, Hennepin Healthcare
Glendale Townhomes,
Minneapolis Public Housing Authority (MPHA)
Hennepin County Mental Health Center
Minneapolis High-rises Representative Council
Native American Community Clinic
Neighborhood HealthSource
NorthPoint Health and Wellness Center
Pillsbury United Communities
Southside Community Health Services

Community endorsements

Stella Whitney-West,
NorthPoint Health and Wellness Center

Subject matter experts

American Public Media
Hennepin County Community Health Improvement Plan
Steering Committee
Hennepin County Emergency Mental Health
Hennepin County Health Care for the Homeless
Hennepin County Mental Health Center
Hennepin County Mental Health Local Advisory Council
Hennepin County Public Health Promotion
Hennepin County Red Door Clinic
Hennepin Health
Hennepin Healthcare Research Institute
Minnesota Department of Health
Rainbow Health
Ryan White Program

Hennepin County collaborators

Hennepin County Communications
Hennepin County GIS Office
Hennepin-University Partnership

Other contributors who shared their time and talent including:

Abdurahman Ali
Aaron Hartung
Fadila A Ibrahim
Jessica Jimenez
Daryl Knighton
Nicolle Mechelke
Cody Raasch
Katlyn Rohrer
Aurin Roy

Contracted partners

Adapt, Inc.
KNOCK, Inc.
VISIONS, Inc.

Financial contributors

The SHAPE 2022 Survey was made possible with Federal and State Grant contributions.

Introduction

The 2022 Adult Survey of the Health of All the Population and the Environment, or SHAPE 2022, is the latest implementation in a series of surveys collecting information on the health of Hennepin County residents and the factors that affect their health across a broad range of topics. SHAPE results help us understand how healthy residents are, examine differences in health among communities, and understand how social factors such as income, education, and housing stability affect health. SHAPE was initiated in 1998, and has been repeated every four years since, including data collection iterations in 2002, 2006, 2010, 2014, and 2018. Each administration of SHAPE has been implemented by Hennepin County Public Health¹.

About SHAPE 2022

The SHAPE 2022 survey collected information on the following health topics: overall health and health conditions, health care access and utilization, lifestyle and risk behaviors, social-environmental factors, and the COVID-19 pandemic. One of the primary goals of SHAPE 2022 was to reach a representative cross-section of residents to gather generalizable data for health status and other measures at a county and sub-county level. This was done in collaboration ten community partners, including CAPI USA, Glendale Townhomes - Minneapolis Public Housing Authority, Hennepin County Mental Health Center, Hennepin Healthcare East Lake Clinic, Minneapolis High-rises Representative Council, Native American Community Clinic, Neighborhood HealthSource, NorthPoint Health and Wellness Center, Pillsbury United Communities, and Southside Community Health Services, for in-person data collection.

The SHAPE 2022 Adult Data Book², showing the results of 8,591 survey respondents, was released in August, 2023. This data book represents data collected from Hennepin County adults aged 18 and older, both via the traditional mailed survey and in-person data collection. The project reports health indicators by different geographic areas in Hennepin County, and by a number of demographic and social factors, including age, gender, sexual orientation, race/ethnicity, educational attainment, household income, speaking a language other than English at home, frequent mental distress, and economic distress.

The SHAPE 2022 Adult Data Dashboard³, reporting major health indicators by many social and demographic factors for 8,591 survey respondents, was also released. Both the data book and the dashboard are accessible at www.hennepin.us/shape.

The SHAPE 2022 Adult Survey Public Use Data File, the dataset used for the SHAPE 2022 Adult Data Book and the SHAPE 2022 Adult Data Dashboard, is accessible for public health researchers at www.hennepin.us/shape.

The SHAPE 2022 Adult Survey Public Use Data File User Guide accompanies the Public Use Data File and aims to provide needed information for data users.

Introduction

Innovations for SHAPE 2022

- Use of in-person data collection to reach under-represented populations in addition to traditional mailed methodology. This was done in partnership with community organizations including Federally Qualified Health Care Centers (FQHCs), food shelves, multi-unit housing, and the Hennepin County Mental Health Center.
- Use of a sampling design for the mail survey, which identified census tracts with high concentrations of people of color, low-income households, and young adults aged 18-24. Those tracts were sampled at higher rates, giving households in those tracts a greater chance of being selected for survey participation.
- Use of incentives for in-person data collection. Community partners received a stipend and added their own questions to the survey. Incentives for in-person survey completion increased to \$10 to encourage participation.
- An expansion of topics covering sexual orientation and gender identity (SOGI), asthma, mental health care barriers, telehealth and technology access, impact of substance use and gambling, violence, access to greenspace, food insecurity, discrimination experience, impacts of the COVID-19 pandemic, parent born in another country, and speaking a language other than English at home.
- Expanded targeted outreach to low-response areas. Mail survey returns were monitored from each of the 10 sampling areas. Census tracts with a low response were identified and efforts were made to engage residents and encourage them to respond to the survey through targeted marketing.
- Postcards featuring photos and testimonials from trusted health care professionals were mailed to sampled households in the census tracts served by NorthPoint Health and Wellness Center. Postcards with images of local landmarks were sent to census tracts in the communities of Phillips and Powderhorn, Minneapolis.

Additionally, strategies were used to encourage respondents with limited English proficiency.

- A FAQ sheet was included in the materials for the mail survey to provide translation assistance from the Hennepin County Navigation Line.
- The survey instrument was translated into Spanish, Hmong, and Somali and offered at in-person data collection sites. Spanish surveys were also included in a mailing to census tracts with a high percentage of Hispanic residents.
- Language support was provided in Amharic, Hmong, Lao, Oromo, Somali, Spanish, and Vietnamese.

Survey methodology

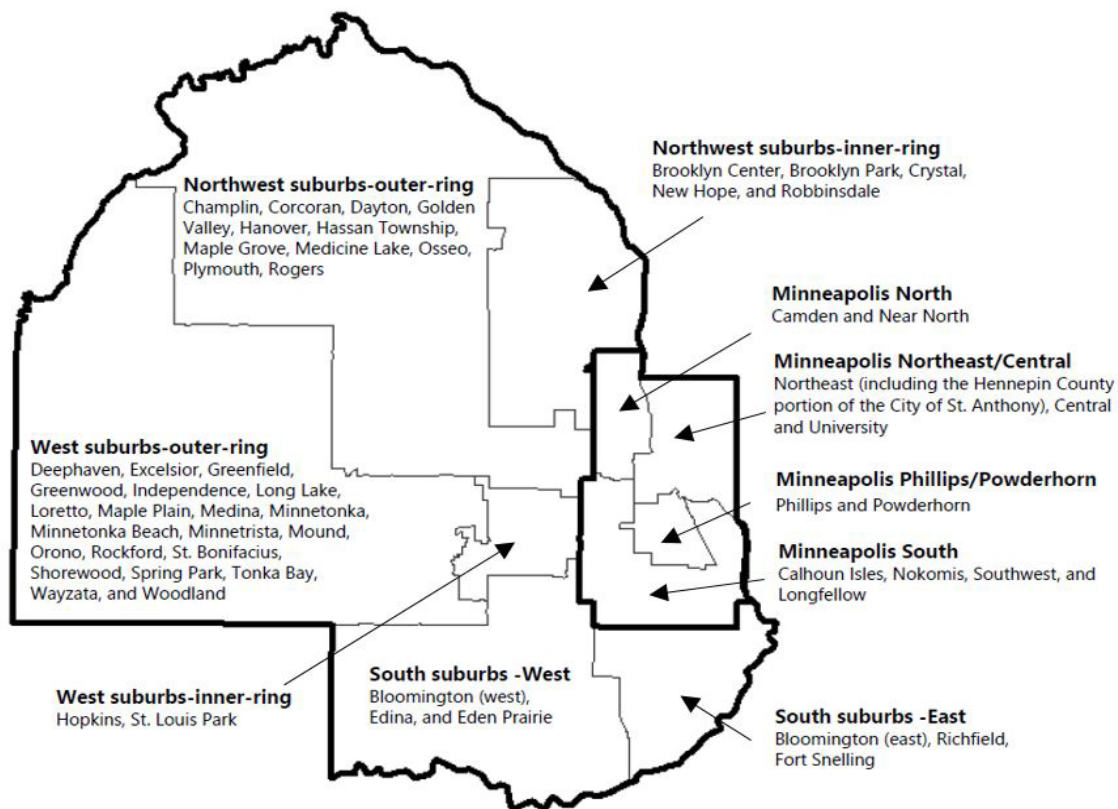
Target population

The target survey population for the SHAPE 2022 was non-institutionalized adults aged 18 and older living in Hennepin County.

Primary data reporting areas

The goal of SHAPE 2022 was to gather data for health status and other measures at a county and as well as for 10 primary data reporting areas at sub-county level. Changes were made to the primary data reporting areas for SHAPE 2018 to better align geographic based reporting areas with demographic characteristics of communities within those areas. The SHAPE 2022 reporting areas are detailed in Figure 1. Due to these changes, comparing 2022 data to previous SHAPE data that is earlier than 2018 by geographies is not advised.

Figure 1. SHAPE 2022 geographic reporting areas



Survey Methodology

The sampling strata

The 10 reporting areas for SHAPE 2022 were used as primary sampling areas. Most of these primary sampling areas were divided into three different sampling strata (the regular, over sampled, super sampled) for a total of 24 sampling strata. The regular, oversampled, and super-sampled areas were developed to increase sampling efficiency to meet the goal of the total number of completed surveys per reporting area, and to increase the chance for those populations that are usually under-represented in sampling to be selected. Counts from the Decennial Census 2020 and estimates from the American Community Survey 5-year from 2016-2020 were used to examine various demographic and social characteristics of census tracts in Hennepin County to base sampling decisions.

- **Regular sampling strata**

A census tract is assumed to be sampled as a regular sampling area if they do not fall into the other two sampling strata described below.

- **Over sampling strata**

A census tract is designated as an over-sampling area if it meets one or more of the following criteria:

- o 20% or higher of tract where the householders were from populations of color (Decennial Census 2020)
- o 25% or higher of tract where the population is living under 200% of the Federal poverty level (2016-2020 ACS estimates)

Of 329 census tracts in Hennepin County, 160 fit the criteria and were classified as over-sampled tracts. Within each of the 10 primary sampling areas, the over-sampled tracts become the over-sampling stratum which was assigned a higher sampling fraction than the regular sampling stratum within the same primary sampling area.

- **Super sampling strata**

A census tract will be designated as a super-sampling area if it meets the following two criteria:

- o 15% or higher of tract where the adult population were young adults aged 18-24-year old
- o 20% or higher of tract where the householders were from populations of color or 25% or higher of tract where the population is living under 200% of the Federal poverty level.

A total of 19 census tracts met the two criteria listed above and were classified as super-sampled tracts. Five reporting areas contains super-sampled tracts, or super-sampling stratum. These tracts were considered likely the hardest to reach and thus likely would have the lowest response rate. Therefore, they are sampled at a higher fraction than a over-sampling stratum within the same reporting area.

Sampling frame and strategy

SHAPE 2022 used a geographic based stratified disproportionate sampling method. The residential addresses of Hennepin County in the U.S. Postal Services' full Delivery Sequence File (DSF) was procured from a vendor and served as the sampling frame for this project. The DSF was current as of January 21, 2022. All addresses were geocoded using ArcGIS Pro⁴, and assigned to one of the 24 SHAPE geographic sampling strata. The sampling proportion for each of the 24 sampling strata was determined using the following factors:

- The goal set of anticipated completed surveys for each of the 10 reporting areas
- The anticipated vacancy rate for each reporting area
- The anticipated response rates for the regular, oversampled, and super sampled census tracts within each of the 10 reporting areas – higher for regular census tracts, lower for oversampled tracts

Survey Methodology

Table A describes expected survey completes, and sampling strata for each of 10 primary sampling areas.

Table A. SHAPE 2022 data reporting areas, expected survey completes and sampling strata

Primary sampling areas (reporting areas)	Expected survey completes	Sampling stratum			Total
		Regular sampling stratum	Over-sampling stratum	Super-sampling stratum	
Minneapolis North	720	0	1	1	2
Minneapolis Northeast/Central	720	1	1	1	3
Minneapolis Phillips/Powderhorn	720	1	1	1	3
Minneapolis South	715	1	1	1	3
Northwest suburbs-inner-ring	720	1	1	1	3
Northwest suburbs-outer-ring	715	1	1	0	2
West suburbs-inner-ring	715	1	1	0	2
West suburbs-outer-ring	715	1	1	0	2
South suburbs-East	715	1	1	0	2
South suburbs-West	715	1	1	0	2
Total	7,170	9	10	5	24

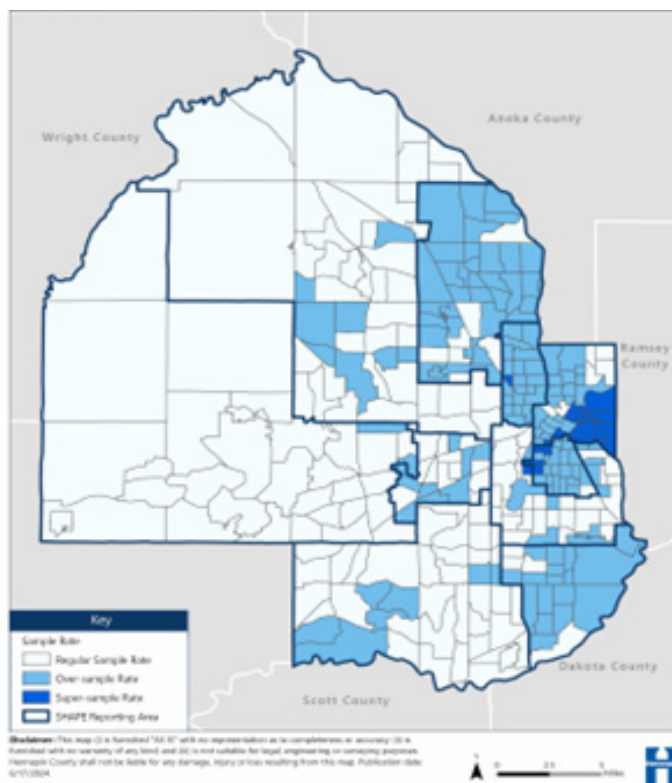
Applying the criteria described above, one reporting area - Minneapolis North - did not have a regular-sampling stratum. This is due to the fact that all census tracts of this reporting area all fell into over-sampling or super-sampling criteria. All reporting areas contain over-sampling strata, where super-sampling strata occur only in five reporting areas.

Figure 2 illustrates the distribution of sampling strata by each of the primary sampling areas.

The sample selection included two stages of random sampling. First was to randomly select households from each of the 24 sampling strata according to the sampling fractions described above. A total of 39,983 households (excluding group quarters) were randomly selected. A second sample of 2,000 households from the Philips-Powderhorn reporting area was selected after the initial sample was chosen.

The second stage of random sampling was to randomly select one adult within the household. This was accomplished by asking the adult with the next birthday to complete the survey.

Figure 2. SHAPE 2022 primary sampling areas



Data collection and the mail plus sample

Data collection was done via two survey modes: mail and in-person. Responses from the mail mode used a random sampling strategy and serve as the base sample for SHAPE 2022 general adult population data reporting. The final data used for SHAPE 2022 general adult population data reporting used a mail plus sample described below.

Mail Survey

The 39,983 households were randomly selected and were invited to participate in the SHAPE 2022 survey. The primary contact procedure involved five mailings to all eligible households. Some households in lower-response geographies received two additional mailings. Those who responded before the next mailing was prepared were removed from subsequent mailings. A small number of households were also removed from subsequent mailings upon their request or if the post office marked surveys as vacant or undeliverable.

- Mailing 1 (approximately May 20, 2022) – A colorful pre-notification postcard notifying the household that they were selected to participate. Only 75% of households (29,964) in each of the 24 sampling strata were sent this first mailing.
 - Mailing 2 (approximately May 24, 2022) – The household survey, a language card, and pre-paid return envelope sent to all sampled households (39,983).
 - Mailing 3 (approximately June 8, 2022) – A black and white postcard thanking the households who completed the survey and asking those who had not completed the survey to do so, sent to all households (39,983).
 - Mailing 4 (approximately June 22, 2022) – The household survey, a language card, and pre-paid return envelope sent to all remaining households that had not returned a survey, or for whom earlier mailings were returned marked as vacant, undeliverable, or refusals (38,072).
 - Mailing 5 (approximately July 27, 2022) – A small postcard was mailed to 7,475 households in selected geographic areas within Hennepin County that had low survey response. The postcard included a photo and testimonial of health care professionals of community clinics (NorthPoint) or images from that community (Minneapolis Philips and Powderhorn) in those areas urging people to complete and return the survey.
 - Mailing 6 (approximately July 27, 2022) – The household survey, a language card, pre-paid return envelope sent to all remaining households that had not returned a survey, or for whom earlier mailings were returned marked as vacant, undeliverable or refusals. In addition, households within census tracts that had a response rate of no more than 15% and a percentage of households with a Hispanic householder of at least 20% were sent a Spanish-language version of the survey. In Mailing 6, 2,379 households received both an English- and a Spanish-language survey and 29,411 received just the English-language survey.
 - Mailing 7a (approximately October 4, 2022) – A final survey was mailed to 2,592 households from the Northwest Outer ring suburban reporting area which had not responded yet.
- Mailing 7b (approximately October 4, 2022) – A new cohort of 2,000 households in the Minneapolis Philips-Powderhorn reporting area was selected and mailed a survey.

Mail data collection began in May 2022 and ended in December 2022. More than 8,000 surveys were received by December. After data cleaning and removal of duplicates and incomplete surveys, the final sample from mail mode was 7,151

Data collection and mail plus sample

In-person survey

The in-person data collection gathered data from Hennepin County adults using a convenience non-random approach at sites of ten community partners, including eight SHAPE 2022 community-based organizations and two Hennepin County operated community clinics. In-person data collection aimed to:

- Provide health data for each of the community partners, not only with SHAPE 2022 general data, as well as data gathered specific to their own need;
- Locate and connect with persons from households that are in the address-based random sample; and
- Complement the mail survey by matching in-person survey responders who live in households that are physically close to addresses in the address-based sample who did not respond to the mail survey.

Community partners

The in-person data collection was accomplished with ten community partners. These community partners represent Federal-Qualified Health Centers, food shelves, community clinics, and community organizations. The community partner sites serve under-represented populations, had visitor flows that could secure at least 200 survey completes in a short time-period, had a space to provide privacy for completing the survey, and were able to assist with planning and implementation logistics.

Community partner organizations were offered a \$3,000 stipend for their participation with SHAPE 2022. A monetary incentive of \$10 in the form of a Target gift card following the completion of a survey was distributed to respondents at in-person data collection sites.

The ten community partners and respective data collection sites are:

- CAPI USA;
- Pillsbury United Communities (Waite House, Brian Coyle, North Market);
- Glendale Townhomes - Minneapolis Public Housing Authority;
- Minneapolis High-rises Representative Council (5th Ave Hi-rise, Park Center, Lowry Towers);
- Native American Community Clinic;
- Neighborhood HealthSource;
- NorthPoint Health and Wellness Center;
- Southside Community Health Services (Fremont, Sheridan, and Central clinic);
- Hennepin County Mental Health Center; and
- Hennepin Healthcare East Lake Clinic.

The SHAPE 2022 survey instrument used for the in-person data collection was nearly identical to that of the mail survey. However, partner organizations were able to add up to five questions to the in-person survey instrument that were specific to their organization.

Data collection

With the collaboration of 10 community partners, a total of 2,133 surveys were completed at 19 different sites throughout Hennepin County at 50 different in-person data collection events between May and September of 2022. Among them, 339 were completed in Spanish, 70 in Somali, and 13 in Hmong. Additional language support was provided for Amharic, Lao, Oromo, and Vietnamese.

After data cleaning and removal of duplicate and incomplete surveys, the final sample from the in-person survey was 2,072.

Data collection and mail plus sample

The mail plus sample

The 7,151 survey respondents from the mail mode is the base sample from general adult data reporting. With over-sampling, super-sampling, and many other outreach efforts to reach the hard-to-reach, residents of racial and ethnic minorities and young adults were still under-represented.

To address this under-representation, some of the surveys from the in-person sites were used to complement the survey participants who responded by mail. At the in-person survey sites, respondents were asked to provide their address voluntarily. Of the 2,133 surveys collected, 2,071 provided an address in some form. Addresses that were complete and were within Hennepin County were geocoded using ArcGIS Pro⁴ and then matched back to the sampled mail-survey households in one of two processes:

Non-response (or refusal) conversion

If an in-person survey respondent has an address that was exactly matched with a household address in mail-sample, and no completed survey from that household has received, this in-person survey became the perfect match with a mail-survey non-response. After duplicates were removed, a total of 132 completed in-person surveys had an address that was a perfect match for one of the address-based sample mail surveys. These were taken as a 'converted' response and included in the dataset used for analysis of the general adult population data reporting.

Sample replacement

All of the addresses from in-person surveys that listed a complete Hennepin County address that were not a homeless shelter or group quarters and were not a perfect match as described above, were geocoded using ArcGIS Pro.³ For all the addresses in this group, the geocoded location was then used to calculate the distance between that household and each of the remaining addresses of households in the mail sample that had not been flagged as vacant, rejected, or otherwise undeliverable by the US Postal Services. For each of the ten reporting areas, the result was a set of address pairs and the distance between them within that reporting area.

After these ten tables were created, a Python-based program was used to run a set of 500 iterations of possible assignments of each of the in-person respondents to the closest address from the original household mail sample that was still available for pairing. The final pairing was chosen based on which of the 500 iterations produced the lowest sum of the distances.

Completed in-person surveys that were within 200 meters of its paired household from the address-based sample household would then 'replace' household in the dataset used for analysis of the general adult population data reporting .

A total of 1,308 surveys met the 200-meter requirement and were eligible for sample replacement. These surveys were subsequently added to the final dataset.

This resulted in a total of 1,440 surveys (132 + 1,308) from the in-person survey process to be added to the dataset used for analysis of the general adult population data reporting.

The final dataset, sometimes called the "mail plus" dataset, has 8,591 cases (7,151 from mail, 1,440 from in-person) for general data reporting. The demographic characteristics of the respondents in the mail plus dataset, as shown in Table C, was much closer to the population profile of all adults living in Hennepin County.

Survey response and data reporting

Survey response rate

Of the 41,983 sampled households [39,983 from the original sample plus the 2,000 from the second cohort], 7,151 completed usable mail surveys in the final data set. This classic mail sample was added with 1,440 cases from in-person surveys for a total of 8,591 surveys in the final mail plus dataset.

The standard outcome formula from the American Association of Public Opinion Researchers (AAPOR)⁵ for computing response rates (formula RR4) was used to determine the survey response rate for SHAPE 2022. Overall, the response rate for the mailed survey (n=7,151) was 20.0%. The response rate for the mail plus sample was 23.2%.

The response rate by primary sampling areas is exhibited in Table B.

Table B. SHAPE 2022 survey completes and response rate (AAPOR RR4) by reporting areas

Primary sampling areas (reporting areas)	Sampled households	Vacant	Completed surveys in mail-plus sample	Response rate
Minneapolis North	4,622	731	1,036	27.1%
Minneapolis Northeast/Central	5,403	828	957	21.2%
Minneapolis Phillips/Powderhorn	6,194	822	1,093	20.6%
Minneapolis South	3,032	239	846	30.9%
Northwest suburbs-inner-ring	4,574	256	910	21.8%
Northwest suburbs-outer-ring	3,373	171	748	23.9%
West suburbs-inner-ring	3,757	325	722	21.6%
West suburbs-outer-ring	3,566	193	778	23.4%
South suburbs-East	4,024	252	746	20.7%
South suburbs-West	3,438	215	755	24.0%
Total	41,983	4,032	8,591	23.2%

Who responded to the survey

The responses given by 8,591 adults in Hennepin County was used for county adult general population reporting. The distribution of the respondents from Hennepin County by selected socio-demographic factors is illustrated in Table C. These socio-demographic characteristics are the reporting categories for each data table published in the SHAPE 2022 Adult Data Book.

Survey response and data reporting

Table C: SHAPE 2022 mail plus sample: respondent characteristics

Data book reporting categories	Mail mode responses N	In-person responses N	Combined total N
Hennepin County total	7,151	1,440	8,591
Minneapolis	2,787	1,146	3,933
Camden, Near North	601	435	1,036
Central, Northeast, University, St. Anthony	737	220	957
Phillips, Powderhorn	675	418	1,093
Calhoun-Isles, Longfellow, Nokomis, South-west	774	73	847
Suburban Hennepin County	4,364	294	4,658
Northwest Suburbs	1,443	214	1,657
Northwest - inner	717	192	909
Northwest - outer	726	22	748
West suburbs	1,468	32	1,500
West - inner	695	27	722
West - outer	773	5	778
South suburbs	1,453	48	1,501
South - east	714	32	746
South - west	739	16	755
Age			
18-24 years	207	102	309
25-44 years	1,871	584	2,455
45-64 years	2,170	492	2,662
65-74 years	1,627	188	1,815
75 and older	1,240	67	1,307
Gender			
Male	4,507	895	5,402
Female	2,520	498	3,018
Nonbinary	79	19	98
Transgender			
Yes	60	24	84
No	7,019	1,366	8,385
Sexual orientation			
Straight/Heterosexual	6,098	1,453	7,151
LGBQ+	813	167	980
Lesbian or gay	339	41	380
Bisexual or pansexual	335	75	410
Queer	205	26	231

Survey response and data reporting

Data book reporting categories	Mail mode responses N	In-person responses N	Combined total N
Selected race/ethnicity			
American Indian or Alaska Native	88	226	314
Hispanic	172	328	500
Non-Hispanic			
Asian or Asian American	252	75	327
Southeast Asian	70	46	116
Black or African American	425	554	979
US-born Black	316	320	636
Foreign-born Black	107	230	337
White	5,827	198	6,025
Household income			
< 200% of Federal Poverty Level	1,284	1,147	2,431
≥ 200% of Federal Poverty Level	5,500	265	5,765
Educational attainment			
Less than high school	104	331	435
High school or GED	613	479	1,092
Some college	1,597	355	1,952
College degree or higher	4,550	225	4,775
Speak a language other than English most of the time at home			
Yes	479	599	1,078
No	6,617	794	7,411
Economic distress			
Yes	979	890	1,869
No	6,136	540	6,676
Frequent mental distress			
Yes	882	258	1,140
No	5,951	870	6,821

Data processing for SHAPE 2022 data including data scan, data cleaning and quality assurance, text data coding, and generating variables for key health indicators that required recoding and calculation using two or more survey items. IBM SPSS Statistics 26.⁶ is the software that was used for data processing and management.

Survey response and data reporting

Data preparation

Data scanning and quality control

Data scan

SHAPE 2022 is a paper survey, either via mailing or in-person. The paper survey scanning was processed by a contacted vendor, ADAPT Inc. The vendor employed a scanning quality control process that assures an accuracy rate of 99.9%⁷. The process includes, but may not be limited to:

- The paper survey was scanned in digital images, referenced by a survey ID;
- The data from the survey digital images were then captured via a licensed scanning software system;
- The software attempted to recognize mark sense boxes as well as text. Any data that the software could not recognize with a 99.9% confidence level was displayed to a human operator working at an oversized computer screen. The software also rejected all respondent errors or confusing marks.
- A human operator captured these unrecognized items and rejected items. A standard protocol to handle various scenarios set by SHAPE project team and the vendor was used to address that item.
- All data captured by a human operator was then verified 100% by a second human operator.
- Hard copy surveys remained in the production area until production was completed. Verifiers would refer to the hard copy documents if information was not available from the image.

The captured survey data in .CSV data format, along with scanned survey image files were delivered to the SHAPE project team for data processing.

Scan quality- spill-over check

SHAPE 2022 has nine "CHECK ALL THAT APPLY" questions. They are questions B1, B10, B12, C10, C17, F1, F2, G3 and G8. The scanner would automatically accept as many marked response boxes or bubbles as were checked. A potential data scanning issue is the "spill-over" effect. i.e. the scanner could pick up some survey response bubbles that were not intentionally marked. This is due to some respondents marking their response choices on the bubbles that were a little over or under the bubbles, or there were some stray marks close to the bubbles. Due to the narrow space between response bubbles on the printed survey, the scanner would read the adjacent bubbles as checked.

This "spill-over" was systematically checked for all these applicable survey questions by pulling out the surveys with narrow spaced adjacent bubbles that were all checked. A correction was made for any "spill-over" instances that were caught. Details are described in Technical Notes for the respective survey question,

Open-ended text data coding

Among nine "CHECK ALL THAT APPLY" questions, eight have one or more "Other" options. Each of the "Other" options is followed by an open-ended text line that allow respondents to enter text. These eight questions are B1, B10, B12, C10, F1, F2, G3 and G8.

Survey response and data reporting

These text data were coded via a standard protocol for consistency, including:

- Identify themes/categories and codes;
- Assign code (codes) for every answer entered; and
- Generate a new set of variables that utilize the coded text to do back coding

Refer to the Technical Notes for each of these questions for details.

Data cleaning and data quality

Data logic error check

Logic error checks were performed for all variables that contain a continuous numeric value via an open-end text box. Questions included are unhealthy mental health days (A3), height and weight (A6, A7), servings of fruits and vegetables (C1, C2), physical activity, biking to work or for errands (C5, C6), alcohol use (C7, C8, C9), respondent's age (G4), and the number of adults and number of children living in the household (G7).

The Technical Notes provide details on the logic error checks for each of these questions.

Duplicated surveys

For mail survey, there were 791 sets of mail surveys that were identified as duplicates (790) or triplets (1). That is multiple surveys came from the same household. A set of hierarchical criteria was developed to keep one survey from each set. This includes the item completeness in the survey, especially the most critical survey items such as age, gender, race, ethnicity and sampling strata, the survey completion date, and population priority in terms of demographic characteristics. This led to a drop of 792 cases.

For the in-person surveys, there were 17 sets of duplicates:

- 6 duplicates with the same person completed a survey two times at different data collection events hosted by the same community partners;
- 7 duplicates with different persons from the same household completing a survey; and
- 4 duplicates with a person from same household completing both a mail survey as well as an in-person survey.

Among each pair of duplicates, the survey with more complete information was kept and the other one was dropped. This led to a drop of 17 cases.

Note that the 7 and 4 duplicates described above were kept for the relevant community partner-specific report.

Missing response and survey incompletes

A total of 205 surveys were dropped since they either were missing some of the most critical data items (age, gender, race and ethnicity, sampling strata), or had more than one-third of the survey items missing. Of them, 150 were from the mail survey and 55 were from in-person surveys.

In summary, of the 10,226 surveys received from both mail or in-person surveys, 1,014 were dropped due to either being a duplicate, missing critical data, or not being complete enough. This results in a dataset of 9,212 survey respondents, 7,151 from mail and 2,072 from in-person.

Survey response and data reporting

Weighting of sample data

The SHAPE 2022 survey weighting and raking methodology was developed in consultation with local and national statistical survey research experts following practices and techniques similar to those used by other large population surveys such as the CDC BRFSS⁸.

The SHAPE 2022 survey data was weighted in two steps. The steps accounted for:

- Differences in the probability that a particular person was selected; and
- Differences in the proportion of persons who completed the survey compared to the population in Hennepin County as a whole as measured by the 2020 Census.

For SHAPE 2022, as described earlier, there are two stages of random sampling that was: random selection of households based on geographic based disproportionate sampling using 24 sampling strata. Second is the random selection of an adult within that household. A person in a household with two adults in it had a higher probability of being that designated person than a person with five adults in it. To account for these differences, each respondent was given an initial equal probability weight connected with his or her sampling area, or strata, based on the ratio of the number of occupied households in that strata divided by the number of completed surveys from that stratum (thus accounting for differences in response rates) multiplied by the number of adults in that person's household. The number of adults living in any given household was capped at seven for weighting purposes. This is the disproportionate sampling weight.

The disproportionate sampling weights were then normalized so that the sum of them would add up to the number of respondents in the SHAPE 2022 survey (i.e., 8,591). This now becomes the normalized disproportionate sampling weight. Once the normalized disproportionate sampling adjustment was done, an analysis was completed to see if any post-stratification adjustments were needed. In almost all population-based surveys, the profile of the respondents is different from that of the underlying population. Historically, women are more likely to complete surveys than men and older people are more likely to complete surveys than younger people.

For each of the implementations of SHAPE since 1998 a post-stratification adjustment was done based on the age and gender distribution within geographic areas. Since the profile of the SHAPE 2022 respondents again was older and more female than the population of the county as a whole and, most importantly, since health status and behaviors are known to differ substantially across these groups, there was a need to adjust for age and gender for each of the ten geographic areas for which results were planned to be reported.

To accomplish the post-stratification adjustment with the SHAPE 2022 respondents, a statistical step known as "raking" was done. The raking step took the age, gender, race/ethnicity, and educational attainment percentages from the 2020 Decennial Census for Hennepin County as that standard against which the distribution of respondents of the SHAPE 2022 survey was compared.

There were six age groupings (18-29, 30-44, 45-54, 55-64, 65-79, and 80 and older), two groups for gender (i.e., Male and Female), four race/ethnicity groupings (Hispanic, non-Hispanic Asian/Asian American, non-Hispanic Black/African American, and Other), and three educational-attainment groupings (less than high school, high school graduate or GED, and some college or higher).

The raking adjustment takes the percent of persons from the SHAPE 2022 respondent pool (after weighting for the equal probability of being selected) and mathematically computes the best way to adjust the cases to best match the marginal percentages of the standard population (i.e., the 2020 Decennial Census for Hennepin County). This cycle of adjustments stops when the total differences in the marginal percentages is within a predetermined tolerance of the standard population. The final values needed to reach that "close enough" fit become the weights assigned to each case.

Survey response and data reporting

To avoid any one person having an unduly large influence in any of the health measures for the population, the weights were capped at six. The “extra” weight (i.e., the amount greater than six that was removed) was then redistributed to the other respondents whose value after raking was less than six. This is now a capped raked weight.

All weighting factors were multiplied together to produce the final analysis weight for each completed survey. This set of geographic-centric weights are used for most analyses.

A second set of weights were created for analyses involving one of the select racial or ethnic group who live in Hennepin County. The main difference between these weights and the geographic-based weights is that the post-stratification adjustments were based on the age, gender, and educational attainment distribution for that particular racial or ethnic group rather than the adult population in the county in general. For this set, weights were calculated for analyses involving Hispanics and non-Hispanic American Indians or Alaska Natives, Asian or Asian Americans, Black or African Americans, and Whites.

For the above two set of statistical weights, the observation unit is the individual.

A companion 3rd and 4th sets of weights were created for analysis involving the household as the observation unit. The 3rd set of weights is for countywide analysis where the household is the main observational unit – as in Does someone regularly smoke inside the home?

The 4th set of weights is used when the analysis is based on household, but the analysis is for a particular racial/ethnic subpopulation.

Data Analysis

SHAPE 2022 was designed to use sample data to provide population inferences on health estimates for Hennepin County adults and the ten primary data reporting areas. In order to make statistically valid population inferences from the sample data, standard errors must be computed using procedures that take into account the complex nature of the SHAPE 2022 survey design.

The health estimates and their corresponding confidence intervals (based on standard errors) published in the SHAPE 2022 Adult Data Book were produced using STATA⁹. Table D identifies the SHAPE 2022 variables needed for defining the sampling design parameters using STATA, which include four statistical sampling weights.

Survey response and data reporting

Table D. SHAPE 2022 key survey design, sampling weight variables

Variable name	Variable label	STATA parameter	Description and appropriate use
ID	Admin: SHAPE 2022 survey barcode	PSU	Primary sampling unit variable
SvyMode	Admin: Survey administration mode	Na	1 Mail mode (n=7,151) 2 In person (n=1,440, in-person surveys with an address that were matched with address-based sample non-response within 200 meter)
Strata17	Admin: Sampling strata 17	Strata	Sampling strata identifier variable, contains 17 strata. (note: original sampling strata was 24. Several small strata were small (fewer than 100). These strata were merged with next sampling strata within the same SHAPE 2022 reporting areas, resulted a total 17 sampling strata for data analysis.
<i>wgt_geog</i>	Weight to be used for analyses based on individual , general / geography	pweight	This is a statistical sampling weight variable for estimates and standard errors of health indicators. Specifics include : <ul style="list-style-type: none"> ▪ SHAPE 2022 mail plus sample (n=8,591) ▪ When observation unit is individual ▪ Data analysis for county total, any data reporting area, and any geographic combinations such as city total or suburban Hennepin County ▪ Data analysis that are not defined by the uses of the other statistical sampling weights described below that use SHAPE 2022 mail+ sample
<i>wgt_re</i>	Weight to be used for analyses based on individual , race/ ethnicity	pweight	This is a statistical sampling weight variable for estimates and standard errors of health indicators. Specifics include : <ul style="list-style-type: none"> ▪ SHAPE 2022 mail plus sample (n=8,591) ▪ When observation unit is individual. ▪ Data analysis for race and ethnicity groups. Refer the SHAPE 2022 Adult Data Book Appendix A for the definitions and descriptions
<i>wgt_hh_geog</i>	Weight to be used for analyses based on individual , general / geography	pweight	This is a statistical sampling weight variable for estimates and standard errors of health indicators. Specifics include : <ul style="list-style-type: none"> ▪ SHAPE 2022 mail plus sample (n=8,591) ▪ When observation unit is household ▪ Data analysis for county total, any data reporting area, and any geographic combinations such as city total or suburban Hennepin County ▪ Data analysis that are not defined by the uses of the other statistical sampling weights described below that use SHAPE 2022 mail+ sample
<i>wgt_hh_re</i>	Weight to be used for analyses based on household , race/ ethnicity	pweight	This is a statistical sampling weight variable for estimates and standard errors of health indicators. Specifics include : <ul style="list-style-type: none"> ▪ SHAPE 2022 mail plus sample (n=8,591) ▪ When observation unit is household. ▪ Data analysis for race and ethnicity groups. Refer the SHAPE 2022 Adult Data Book Appendix A for the definitions and descriptions

Public use data file

The *SHAPE 2022 Adult Survey Public Use Data File* includes the survey responses from 8,591 respondents and contains a total of 371 variables. The data file is available for public to access via request. The Public Use Data File request form is downloadable from the project website: www.hennepin.us/shape. SHAPE 2022 Adult Survey Public Use Data File Data Dictionary is attached as Appendix A.

Variables in the public use data file

The public use data file includes variables that are listed in the following order:

- **Survey design and administration (variables 1-9)**
This section includes key variables pertaining to survey design, data administration, data processing and statistical analysis, such as primary sampling unit, sampling strata, sampling weights and survey mode, and reporting areas.
- **Original survey questions (variables 10 to 178)**
This section includes variables for the actual responses to the survey questions. It is listed in the order how they appeared in the SHAPE 2022 adult mail survey questionnaire (see Appendix B).
- **New variables- for data reporting (variables 179 to 371)**
This section includes the new variables that were generated to meet the data-reporting needs, mostly for the SHAPE 2022 Adult Data Book¹, the SHAPE 2022 Adult Data dashboard³, and the two data reports made available at the SHAPE project website www.hennepin.us/shape. These generated new variables are either a recode of the original variable or a computed variable involving two or more survey items.

Data dictionary

The data dictionary (see Appendix A) provides the following information for each variable:

- **Variable name**
 - For a question that actually appeared on the survey, the variable name starts with the section letter, followed by the question number as these appeared in the mail version of the survey.
 - For a variable that was newly created (either a recoded original variable or a computed variable), the name reflects the subject or the abbreviation of the subject that the new variable depicts.
- **Variable label**
 - For a question that actually appeared on the survey, the value label starts with the variable name, followed by the actual survey question as it appeared in the mail survey, or a shortened version of that survey question if it is relatively long.
 - For a variable that was newly created, the variable label will note the sources on which this new variable is based. The variables used for recoding or computation are listed at the end of the variable label in parentheses.
- **Value label and default missing values**
 - The value labels provide content for numeric codes.
 - The values that are defined as missing are also noted.
- **Order of the variable in dataset**
The order of the variable in the dataset is printed in the column.
- **Variable type**
Each variable listed in the data dictionary is classified into one of the following five variable types:
 - **Original**
A variable that represents an actual survey question.

Public use data file

- **Original C/P**
A variable that was the cleaned (C) or processed (P) version of the original variable. Using question B1 for current health insurance question as example. B1 is a “MARK ALL THAT APPLY” question and data are captured via six original variables: B1_1, B1_2, B1_3, B1_4, B1_4text, and B1_5. These six variables were gone through data cleaning and recoding process, including data scan spill-over error check, illogical response check, text data coding and consolidation (refer to tech notes for data book Table 11-12 for details). The cleaned and processed variables for question B1 are Insure1, Insure2, Insure3, Insure4, Insure5.
- **Recoded**
A variable that was recoded from the responses of an original variable, or original C/P variable.
- **Computed**
A variable that was computed or calculated from the responses of a combination of two or more survey items.
- **Design**
A variable that presents a key survey design or data process feature, not a survey question asked of respondents.
- **Data book table or data reporting**
This column provides notations on variables that have been used for the SHAPE 2022 Adult Survey Data Book.
 - **Data book table (number)**
This variable is used to report health indicator(s) for a specific data table in the SHAPE 2022 Adult Survey Data Book.
 - **Data run**
The variable is not a measure of a health indicator but is either a key survey design variable (like primary sampling unit, sampling strata or statistical weight) needed for data run or a geographic area/region, demographic variable that is used as data book reporting category.
 - **NU**
Variable is not used to report data that have been published.
- **Survey Section**
It lists the name of survey section that this variable is from.
- **Keyword**
It lists the keywords for data user to find the respective variables.

The technical notes that provide explanations necessary for the user to understand the variables are also provided in this part of data dictionary.

Public use data file

Limitations and potential sources of bias

SHAPE 2022 results are subject to several limitations.

- Selection bias - SHAPE 2022 results are subject to respondent self-selection bias in both the mail and in-person data collection methods. This bias occurs when the adults in selected households who chose to not respond are noticeably different from those who participated. With the mail survey, a person may simply choose not to complete the survey. During in-person data collection, volunteers approached clients to ask them to complete a survey. If there were multiple people from the same household, the survey was given to the person who expressed a willingness to complete the survey. As such, the random selection of adults in a given household was not assured for the in-person data collection strategy. Additionally, clients could decline to take the survey and therefore were non-responders.
- Response rate - the response rate – including the responses from the sample replacement surveys from the in-person component (AAPOR RR4) - for the survey was 23.2%. Representativeness of survey respondents may be a concern. However, the response rate is similar to other general population surveys and other county-level surveys recently conducted in Minnesota.
- Respondents with limited English proficiency - non-English language was under-represented. The survey was mailed to households only in English. For the respondents need to complete survey in different language, a helpline was provided for them to call. For the in-person strategy, English, Somali, and Spanish surveys were available. However, if there was a need for a language outside of these three languages, it was only possible if a translator was available. The SHAPE team was able to provide language assistance for Amharic, Lao, Oromo, and Vietnamese, No one took advantage of the language support line for the mail survey. Additionally, despite having surveys available in Somali and Spanish, not all persons who spoke those languages were able to read and complete a survey in these languages.
- Small sample sizes - because of small sample size and/ or unreliable estimates, the prevalence of certain variables could not be reported for some reporting areas or groups. These instances are noted throughout the data tables in the data book.
- Self-report bias - SHAPE 2022 data are self-reported; therefore, information is subject to recall bias and potential for bias exists given the wording of and the order in which questions are presented.
- Generalizability - SHAPE 2022 results are generalizable to county adults who live in households with a residential address. Community members living in institutions, nursing homes, long-term care facilities, military installations, correctional institutions, and those experiencing homelessness were not represented.

Overall, SHAPE 2022 provides estimates of health status, health risk behaviors, chronic conditions, disabilities, access to health care, and social-environmental conditions at a local level. Given current research, the use of the Delivery Sequence File address-based sampling frame is the best available survey sampling frame with the fewest non-coverage issues. Most of the questions used for the survey were taken or adopted from national health surveys to facilitate comparisons between local, state, and national data. Despite its limitations, SHAPE 2022 is one of the only local sources of data available to track broad public health indicators and health conditions in the population as a whole as well as for sub-geographies and sub-populations within the county.

How to access the public use data file

Access the data file

The SHAPE 2022 Adult Survey Public Use Data File is available for public health researchers to conduct research and analyses which go beyond the data provided in the published reports.

To obtain access to any of the SHAPE public use data files, please complete a SHAPE Data Request Form downloadable from www.hennepin.us/shape, and email the completed form to shape@hennepin.us. SHAPE project team will send you data files and accompanying this public data file in SPSS data format or the file format which the data requestor prefers.

How to contact the SHAPE project team

The SHAPE project team welcomes questions and suggestions. The contact information to reach the SHAPE project team is:

Email: shape@hennepin.us

Tel: **612-348-7416**

Mail or visit us at:

Hennepin County Public Health

Public Health Health Evaluation and Assessment Team (HEAT)

525 Portland Ave. S. MC963

Minneapolis, MN 55415

The logo for SHAPE 2022 features the text "SHAPE" stacked above "2022" in a bold, white, sans-serif font. The text is centered within a dark purple, irregularly shaped graphic that resembles two overlapping rectangular blocks. This central graphic is set against a white background that is framed by two large, dark purple triangles pointing towards each other from the top corners of the page.

**SHAPE
2022**

Appendices

Appendix A

Data dictionary

Appendix B

SHAPE 2022 survey questionnaire

SHAPE 2022 survey questionnaire



Have a say in how healthy
Hennepin can be.



SHAPE 2022 survey questionnaire



Have a say in how healthy Hennepin can be!

Your household was randomly selected to participate in SHAPE 2022, a project that helps improve the health of local residents. The results of this survey will help us understand the most vital health needs in our community. This is especially helpful as we work to understand how the COVID-19 pandemic affected us all. Because you may be the only household on your block selected, your participation in the survey and responses are very important.

The SHAPE 2022 survey asks about your health, diet, exercise, neighborhood, and ability to get health care. The survey will also ask how you have been impacted by the COVID-19 pandemic. The survey is voluntary and anonymous (we don't ask for names). In all the reports, your responses are combined with those of hundreds of other residents taking the survey .

To complete this 20-minute survey, please follow these steps:

1. Ask the adult (age 18 and older) with the next birthday in your household to take the survey.
2. Complete the paper survey and return by mail in the enclosed prepaid return envelope.

SHAPE 2022 is sponsored by Hennepin County Public Health. More information is available at www.hennepin.us/SHAPE.

If you have questions about the survey, call 612-543-3034 or email SHAPE@hennepin.us.

Thank you for taking the time to participate in this important project.

Sincerely,
 Susan Palchick, PhD
 Hennepin County Public Health Director

Survey Instructions

<p>Please use a blue or black ink pen.</p> <p>Correct mark: </p> <p>Incorrect mark: </p>	<p>If you make a mistake, cross out the incorrectly marked answer and mark correct answer:</p> <p> </p>
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SHAPE 2022 survey questionnaire

Section A.

General health and health conditions

A1. In general, would you say your health is...?

- Excellent
 Very Good
 Good
 Fair
 Poor

A2. Have you ever been told by a doctor, nurse, or other health professional that you had any of the following?

a. Hypertension, also called high blood pressure

- Yes
 Yes, but only during pregnancy
 Borderline high or pre-hypertension
 No

b. Diabetes or sugar disease

- Yes
 Yes, but only during pregnancy
 Pre-diabetes or borderline diabetes
 No

c. Asthma

- Yes
 No → GO TO QUESTION A3

ci. Do you still have asthma?

- Yes
 No

A3. Thinking about your mental health, which includes stress, depression, problem with emotions, for how many days during the past 30 days was your mental health NOT good?

Number of days

A4. Are you limited in any activities because of physical, mental, or emotional problems?

- Yes
 No

A5. During the past 2 weeks, how often have you been bothered by any of the following problems?

a. Feeling nervous, anxious or on edge

- Not at all
 Several days
 More than half the days
 Nearly every day

b. Not being able to stop or control worrying

- Not at all
 Several days
 More than half the days
 Nearly every day

c. Little interest or pleasure in doing things

- Not at all
 Several days
 More than half the days
 Nearly every day

d. Feeling down, depressed or hopeless

- Not at all
 Several days
 More than half the days
 Nearly every day

A6. How tall are you without shoes?

Feet Inches

OR

Centimeters

A7. How much do you weigh without shoes?

If you are currently pregnant, please provide your weight before you were pregnant.

Pounds

OR

Kilograms

SHAPE 2022 survey questionnaire

Section B.

Access to health care

B1. Do you currently have any of the following types of health insurance or coverage? (MARK ALL THAT APPLY)

- Insurance provided by an employer or bought directly by myself, my spouse or family
- Medicaid, MA, MinnesotaCare, or other public insurance
- Medicare
- Other, specify _____
- No health coverage (uninsured)

B2. How long has it been since you last visited a dentist or dental clinic for any reason?

- Within the past year
- Within the past 2 years
- Within the past 5 years
- 5 or more years ago
- Never

B3. During the past 12 months, have you seen a doctor, nurse, or other health professional for your own health?

- Yes
- No

B4. When you are sick or need medical care, where do you usually go? (CHOOSE ONLY 1)

- Doctor's office or clinic (including video or phone)
- Hospital emergency room
- Urgent Care
- Clinic located in a drug or grocery store
- No usual place

B5. During the past 12 months, was there a time when you needed medical care

- Yes
- No → GO TO QUESTION B8

B6. Did you delay or not get the care you thought you needed?

- Yes
- No → GO TO QUESTION B8

B7. Was this because of cost or lack of insurance?

- Yes
- No

B8. During the past 12 months, was there a time when you wanted to talk with or seek help from a health professional about stress, depression, a problem with emotions, excessive worrying, or troubling thoughts?

A health professional could be a doctor, psychiatrist, psychologist, therapist, or counselor.

- Yes
- No → GO TO QUESTION B11

B9. Did you delay or not get the care you thought you needed?

- Yes
- No → GO TO QUESTION B11

B10. Why did you delay or not get the care you thought you needed? (MARK UP TO 3)

- Did not know where to go or how to get help
- Could not find provider or appointment
- Could not find provider who speaks my language or understands my culture
- Afraid of what family, community, or people at work would do or think
- Had no insurance or cost was too high
- Had work, family, or other duties
- Other, specify _____

B11. During the past 12 months, did you skip doses, take smaller amounts of your prescription, or not fill a prescription because of cost?

- Yes
- No
- I was not prescribed any medication

B12. Telehealth has become a common way to get healthcare. Which of these make it hard for you to get healthcare on a computer, tablet, or smartphone? (MARK ALL THAT APPLY)

- No or slow computer/tablet/smartphone
- No or slow Internet
- I don't know how
- My provider doesn't offer this option
- Other, specify _____
- None

SHAPE 2022 survey questionnaire

Section C.

Healthy lifestyles and behaviors

- C1. A serving of vegetables – not including french fries – is one cup of salad greens or a half cup of vegetables. How many servings of vegetables did you have yesterday?

Number of servings

- C2. A serving of fruit is a medium-sized piece of fruit or a half cup of chopped, cut, or canned fruit. How many servings of fruit did you have yesterday? Do not include fruit juice.

Number of servings

- C3. How easy or difficult is it for you to get...

- a. Fruit and vegetables in your local area?

- Very easy
 Somewhat easy
 Somewhat difficult
 Very difficult

- b. Food in your local area that reflects your culture that is affordable?

- Very easy
 Somewhat easy
 Somewhat difficult
 Very difficult

- C4. During the past 30 days, other than your regular job, did you participate in any physical activity or exercise such as walking, running, gardening, sports, or other types of exercise?

- Yes
 No

- C5. During an average week, other than your regular job, how many days do you participate in any physical activity or exercise for at least 30 minutes per day?

Number of days

- C6. During an average week, how many days do you walk/bike to get to and from places such as work, stores, or to run errands?

Number of days

For questions C7 to C9, consider a drink of alcohol to be a can or bottle of beer or malt beverage, a glass of wine or a wine cooler, a shot glass of liquor, or a mixed drink.

- C7. During the past 30 days, on how many days did you have at least one drink of any alcoholic beverage?

Number of days

- C8. During the past 30 days, on the days when you drank, about how many drinks did you have on average?

Number of drinks

- C9. Considering all types of alcoholic beverages, how many times during the past 30 days did you...

- a. Have 4 or more drinks on one occasion?

Number of times

- b. Have 5 or more drinks on one occasion?

Number of times

- C10. During the past 12 months, have any of the following been a problem for you or your family? (MARK ALL THAT APPLY)

- Alcohol
 Marijuana
 Opioids (prescription pain killers, heroin, or fentanyl)
 Other drugs, specify _____
 Gambling
 None → GO TO QUESTION C12

- C11. During the past 12 months, how often has alcohol, marijuana, opioids, other drugs, or gambling been a problem for you or your family?

- Often
 Sometimes
 Rarely
 Never

SHAPE 2022 survey questionnaire

C12. Have you smoked at least 100 cigarettes in your entire life? 100 cigarettes = 5 packs

- Yes
 No → GO TO QUESTION C15

C13. Do you now smoke cigarettes every day, some days, or not at all?

- Every day
 Some days
 Not at all → GO TO QUESTION C15

C14. Is your usual cigarette brand menthol or non-menthol?

- Menthol
 Non-menthol
 No usual brand
 I don't smoke cigarettes

C15. Does anyone, including yourself, smoke regularly inside your home?

- Yes
 No

C16. Do you currently vape or use e-cigarettes?

- Every day
 Some days
 Used to, but not now
 Never

C17. During the past 30 days, have you used marijuana or products containing THC in any form? (MARK ALL THAT APPLY)

- Yes, prescribed by a doctor or healthcare provider
 Yes, used for other reasons
 No, I didn't use marijuana or products containing THC

Section D. How you feel

Question D1 to D6 ask about how you have been feeling during the past 30 days

D1. About how often did you feel so sad that nothing could cheer you up?

- None of the time
 A little of the time
 Some of the time
 Most of the time
 All of the time

D2. About how often did you feel nervous?

- None of the time
 A little of the time
 Some of the time
 Most of the time
 All of the time

D3. About how often did you feel so restless or fidgety that you could not sit still?

- None of the time
 A little of the time
 Some of the time
 Most of the time
 All of the time

D4. About how often did you feel hopeless?

- None of the time
 A little of the time
 Some of the time
 Most of the time
 All of the time

D5. About how often did you feel that everything was an effort?

- None of the time
 A little of the time
 Some of the time
 Most of the time
 All of the time

D6. About how often did you feel worthless?

- None of the time
 A little of the time
 Some of the time
 Most of the time
 All of the time

SHAPE 2022 survey questionnaire

D7. How often do you get the social and emotional support you need? *Please include support from any source, such as family, friends, neighbors and/or co-workers.*

- Always
 Usually
 Sometimes
 Rarely
 Never

D8. How often do you feel lonely or isolated from others?

- Always
 Usually
 Sometimes
 Rarely
 Never

Section E.

About your community

E1. Overall, how much impact do you think you have in making your community a safer and better place to live?

- Big impact
 Moderate impact
 Small impact
 No impact
 Don't know

E2. How much do you agree or disagree with the following statements?

a. This is a good community to raise children in.

- Strongly agree
 Somewhat agree
 Somewhat disagree
 Strongly disagree

b. People in my neighborhood have access to safe parks or trails for biking or walking.

- Strongly agree
 Somewhat agree
 Somewhat disagree
 Strongly disagree

E3. In general, how safe from crime do you consider your neighborhood to be?

- Very safe
 Somewhat safe
 Somewhat unsafe
 Not at all safe

E4. Have you or someone in your household experienced violence? *This includes any threat with a weapon, attack, or domestic assault.*

- Yes, during the past year
 Yes, more than a year ago
 No

E5. During the past 12 months, have you or anyone in your household received Medical Assistance (MA), food support (such as food stamps, SNAP), WIC, or cash assistance such as MFIP or General Assistance (GA)?

- Yes
 No
 Don't know

SHAPE 2022 survey questionnaire

- E6.** During the past 12 months, how often did you worry that food in your household would run out before you had money to buy more?
- Often
 Sometimes
 Rarely
 Never
- E7.** During the past 12 months, how often did food in your household not last and you did not have money to get more?
- Often
 Sometimes
 Rarely
 Never
- E8.** During the past 12 months, did you or your family miss or delay a rent or mortgage payment because you did not have enough money?
- Yes
 No
- E9.** During the past 12 months, how often have you stayed at someone else's home, in a shelter, slept outside, or somewhere not intended as a place to live because you had no other place to stay?
- Never
 Once
 Twice
 Three or more times
- E10.** During the past 12 months, how often did lack of transportation keep you from getting places where you needed to go, such as jobs, medical appointments, or shopping?
- Often
 Sometimes
 Rarely
 Never
- E11.** How often are you in a situation where you feel you are not accepted because of your race, ethnicity, religion, or immigration status?
- At least once a week
 Once or twice a month
 A few times a year
 Once a year or less often
 Never
- E12.** How often are you in a situation where you feel you are not accepted because of your sexual orientation or gender identity?
- At least once a week
 Once or twice a month
 A few times a year
 Once a year or less often
 Never
- E13.** During the past 12 months, have you experienced any of the following? If yes, have you felt that you were treated unfairly or discriminated against? (MARK ALL THAT APPLY)
- Have you...
- Applied for or worked at a job?
Did you feel you were treated unfairly or discriminated against?
 Yes
 No
- Needed medical, mental, or dental care?
Did you feel you were treated unfairly or discriminated against?
 Yes
 No
- Needed to rent or buy a place to live?
Did you feel you were treated unfairly or discriminated against?
 Yes
 No
- Applied for social services or public assistance?
Did you feel you were treated unfairly or discriminated against?
 Yes
 No
- Dealt with the police?
Did you feel you were treated unfairly or discriminated against?
 Yes
 No

SHAPE 2022 survey questionnaire

Section F. COVID-19 Pandemic

F1. The COVID-19 pandemic has affected our community in many areas. Check the ways your life has been negatively impacted by the COVID-19 pandemic. (MARK ALL THAT APPLY)

- Physical health
- Mental health
- Connections to family and/or friends
- Death of family and/or friends
- Housing
- Job and/or income
- Education access and quality
- Other, specify _____
- My life has not been negatively impacted

F2. Check the ways children (age 0 to 17) in your household have been negatively impacted by the COVID-19 pandemic. (MARK ALL THAT APPLY)

- Physical health
- Mental health
- Connections to family and/or friends
- Childcare access and quality
- Education access and quality
- Other, specify _____
- My child's life has not been negatively impacted
- There are no children age 0 to 17 in this household

F3. Have you ever tested positive for COVID-19?

- Yes, but was NOT hospitalized
- Yes and WAS hospitalized
- No → GO TO QUESTION G1

F4. Did you have any symptoms lasting four weeks or longer due to COVID-19?

- Yes
- No

Section G. About you

The following questions are about you and your household. The information will help ensure that the survey data represents all those who live in Hennepin County. Remember, your responses are confidential.

G1. Are you...?

- Male
- Female
- Non-binary
- Something else, please specify _____

G2. Do you consider yourself to be transgender?

- Yes
- No

G3. Do you consider yourself ...? (MARK ALL THAT APPLY)

- Straight or heterosexual
- Lesbian or gay
- Bisexual or pansexual
- Queer
- Questioning
- Something else, please specify _____

G4. What is your age?

Years

G5. Are you currently ...?

- Married or living with a partner in a marriage-like relationship
- Separated, divorced, or widowed
- Never married

G6. Do you speak a language other than English most of the time at home?

- Yes
- No

G7. INCLUDING YOURSELF, how many adults and children live in your household?

- Number of adults age 18 and older INCLUDING YOURSELF
- Number of children age 0-5
- Number of children age 6-11
- Number of children age 12-17

SHAPE 2022 survey questionnaire

G8. Which of the following do you consider yourself? (MARK ALL THAT APPLY)

Hispanic or Latino/a

White

Black or African American

If Black or African American, are you ...?

African American

Somali, Oromo, Ethiopian, or from another East African country

Liberian, Nigerian, or from another West African country

Other, specify

Asian or Asian American

If Asian or Asian American, are you ...?

Hmong, Cambodian, Laotian, Thai, Vietnamese, or Burmese

Other, specify

American Indian or Alaskan Native

Native Hawaiian or other Pacific Islander

Other, specify _____

G9. Were you born in the United States?

Yes

No

G10. Were either of your parents born in another country?

Yes

No

G11. What is the highest grade or year of school you have completed?

Less than high school

High school graduate or GED

Some college, associate's degree, or vocational/technical/business school

Bachelor's degree or higher

G12. Please tell us your household income in 2021 from all earners and all sources before taxes. Remember your responses are confidential.

No income or less than \$13,000

\$13,001 - \$17,000

\$17,001 - \$26,000

\$26,001 - \$35,000

\$35,001 - \$44,000

\$44,001 - \$53,000

\$53,001 - \$62,000

\$62,001 - \$71,000

\$71,001 - \$80,000

\$80,001 or more

Do you have any comments about the survey?

Please share your comments in the space below.

Thank you!

SHAPE 2022 survey questionnaire

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SHAPE 2022 survey questionnaire



Appendix C

Technical Notes

General Technical Notes

The SHAPE 2022 Public Use Data File contains a total of 371 variables, including reporting factors used in each of the table published in the SHAPE 2022 Adult Data Book². They are geographic areas, age, sexual orientation and gender identity, race and ethnicity, household income, educational attainment, speaking a language other than English at home, economic distress, and frequent mental distress.

In this section of the technical notes, a description for each of the data-reporting factors is provided.

Geographic area

Information on the residential location of survey respondents of the mail survey was obtained by extracting address data from the sample frame used for this project. Respondents for the in-person survey were asked to provide their address voluntarily. The address data were then geocoded into ten SHAPE 2022 reporting areas. Based on these ten reporting areas, data for the city of Minneapolis, all suburban Hennepin County areas, and three suburban divisions are also reported.

Some special notes regarding geography include:

- Changes in geography for some reporting areas have been made since SHAPE 2018. This included:
 - Northwest suburbs: Brooklyn Park was traditionally grouped in the outer ring area, but starting with SHAPE 2018, it was included in the inner ring area.
 - South suburbs: Bloomington was divided into west and east areas starting 2018, where in earlier SHAPE surveys south suburbs had been divided into inner and outer areas.
- For data users who have a specific need to compare SHAPE 2022 to SHAPE 2014 or earlier reported data in these affected reporting areas, please contact the SHAPE Team for assistance.
- Survey respondents needed to have geographic data available in their response to be included in the final dataset. However, a few respondents of the mail survey blacked out or removed survey barcodes that contained geographic area information. They were excluded from the final survey dataset as they could not be assigned to a geographic reporting area.

Age

Age was based on the survey respondent's self-reported age (question G4).

G4. What is your age?

 Years

Age is one of the key reporting demographic variables for this data book as well as for the statistical weight calculation. Detailed data processes and cleaning for the age variable were made to reduce missing and data errors for the whole sample, which is 10,226 surveys (both mail-mode, and in-person mode):

- All data respondents provided, either age in numeric value, or in text description, were captured during data entry.
- There were 379 cases where age was missing or was outside of the valid age range of 18 to 115 years. The scanned images of these 379 surveys were reviewed case by case, checking for age-related comments, notes written on the surveys or potential scanning errors, to make respective corrections and changes.

Technical Notes

- With these corrections made, 375 still had age missing or were outside of the valid range. Of these, 71 checked “Medicare” as current health insurance coverage (question B1), their age value was assigned as “65 and older.”
- After the above-described efforts were made, removing the survey duplicates and survey incompletes, 101 from the mail survey mode still had age missing or fell within an invalid range. These were excluded from the combined final mail-plus sample. In-person surveys with complete address data were candidates for mail survey non-respondents’ conversion and replacement match.

Five age groups are presented in this data book. The groups are: 18-24, 25-44, 45-64, 65-74, and 75 and older. Among the 8,591 mail-plus sample presented for this data book, 43 cases that were assigned the age group “65 and older” are excluded from reporting by age due to lack of information to place them in either age 65-74 or age 75 and older.

Selected race and ethnicity

G8. Which of the following do you consider yourself? (MARK ALL THAT APPLY)

Hispanic or Latino/a

White

Black or African American

If Black or African American, are you ...?

African American

Somali, Oromo, Ethiopian, or from another East African country

Liberian, Nigerian, or from another West African country

Other, specify _____

Asian or Asian American

If Asian or Asian American, are you ...?

Hmong, Cambodian, Laotian, Thai, Vietnamese, or Burmese

Other, specify _____

American Indian or Alaskan Native

Native Hawaiian or other Pacific Islander

Other, specify _____

Race and ethnic categories used for this databook were derived from the answers to the following question:

Race and ethnicity are key reporting demographic variables for this data book as well as for the statistical weight calculation. Question G8 was a “MARK ALL THAT APPLY” question with open-ended text options that required additional data process handling. Several data cleaning and process steps were employed to reduce the data errors, item-specific missings, and to have reporting race and ethnicity groups meet data practice guidelines.¹⁰

Data scan quality “spill over” check

For the “MARK ALL THAT APPLY” questions, when response option check boxes were printed too close to each other, they may be susceptible to have “spill over” errors during scanning. For example, if a White respondent checked “White,” the scanner might have picked “Black or African American” as “checked” as well due to a minor stray mark.

There are six neighboring check box pairs printed very close to each other. Once 8,500 surveys were scanned in, potential “spill over” errors were checked, and 133 surveys were found to have at least one pair of neighboring response boxes scanned in as both checked. The scanned images of these 133 surveys were pulled for review. Six surveys (or 4.5%) were found to have “spill over” errors and respective corrections were made.

“Spill over” was a significant issue in previous SHAPE iterations when the mail survey data scanning was processed by completed by the SHAPE Team. The “spill over” error rate was as high as 69 percent. For SHAPE 2022, the survey scanning work was contracted out.

A low rate of “spill over” error was also found when checking two other “MARK ALL THAT APPLY” survey questions (question B1 Health insurance, question C10 Problems due to alcohol and drug use). The scanning error rates were one percent and two percent respectively. Based on the low error rates, the SHAPE Team decided to skip this data quality check for all other “MARK ALL THAT APPLY” questions.

Technical Notes

Data scan illogical response check

There are two parts of illogical response check for race and ethnicity variables.

- First was to identify surveys with too many response options checked to evaluate if it was indeed the respondents' choice or due to a scanning error. The race and ethnicity question contained 13 check boxes. Of the 10,226 whole sample, 13 surveys with five or more response boxes checked were pulled for review. One survey was found to have an error in scanning, and a respective correction was made.
- Second was to check illogical responses between survey items. There were three "Other, specify___" response options, including:
 - o 1st "Other" listed under Black or African American
 - o 2nd "Other" listed under Asian or Asian American
 - o 3rd "Other" listed as the last response option, allowing respondents to check if they self-identified with a race or ethnic group which was not among those listed above.

Each of these three "Other" options were accompanied with an open-text field that allowed respondents to enter the specifying text.

There were several types of disagreements with potential illogical response among these items:

- o Text entered in one "Other" was really meant to be in the "Other" option. For example, a respondent checked the 1st "Other" box and entered the text "I am Asian Indian," but did not check the 2nd "Other" box. Those responses were fixed.
- o It was common for respondents to check one "Other" box, but not enter specifying information. However, there were cases when people left "Other" unchecked but entered specifying text. If the text was pertinent, the box that was left blank had to be checked.
- o Respondents checked "Other" option but entered specifying text that was not related to the survey question, such as "I am a human." In this case, that text was "invalid" for this survey question and that "Other" checked race was unchecked.

Among the 10,226 whole sample, 427 surveys were identified as potential illogical responses as described above. A case-by-case review of scanned survey images found 143 "illogical" responses and respective corrections were made.

Open-end text coding and consolidation designation

Of the 10,226 whole sample, there were 343 texts entered under the three "Other" text fields.

These texts were:

- Assigned with one or more initial codes that captured the essence of content relating to race and ethnicity groups following a standard protocol.
- The initial codes were then consolidated into codes that mirrored the listed race and ethnicities groups in question G8. For the rest of initial codes, were coded as "Other."
- In the final race group designation, coded text data from the three open text fields were used only if none of the six major race groups was checked, or if only one race group was checked, but text coded race group differed from the checked race.
- There was a layout error in the mail survey. The "Other, specify___" response category under Asian or Asian American was not indented. As all three text fields of question G8 were listed and coded in one standard protocol, such a layout error was expected to have minimal effect on the results of race and ethnicity classification or designation.

Technical Notes

Data book reporting groups

For this data book, health indicators are reported for five major racial and ethnic groups, and three sub-race groups. Sample size for each of these groups is summarized in Table E.

Table E. Sample size for racial/ethnic groups

Race/Ethnicity	N	%
American Indian or Alaska Native	314	3.7%
Hispanic or Latino/a	500	5.8%
Non-Hispanic		
Asian or Asian American	327	3.8%
Southeast Asian	116	
Black or African American	979	11.4%
US-born Black	636	
Foreign-born Black	337	
White	6,025	70.1%
Native Hawaiian/Pacific Islander/Other/Biracial or Multiracial	161	1.9%
Blank, unknown	285	3.3%
Total	8,591	100.0%

Special notes on race and ethnicity groups and subgroups include:

- American Indian or Alaska Native (AI/AN)
 - An inclusive definition of AI/AN was used that included those who self-identified as AI/AN alone or checked AI/AN in combination with one other race, and included those who identify as Hispanic or Latino/a.
 - The inclusive definition of AI/AN followed a recommendation of Urban Indian Health Institute (UIHI).¹¹ This was also a result of consultation with community partners serving AI/AN communities.
 - Of the 8,591 respondents represented in this data book, 172 respondents checked their race as AI/AN alone, and an additional 142 respondents checked AI/AN as well as one other race (124) or Hispanic/Latino (18). The total sample size for AI/AN is 314.
- Hispanic or Latino/a ethnicity included all respondents who checked Hispanic or Latino/a, excluding the 18 respondents who were included in the AI/AN group. Hispanic or Latino/a ethnicity and race, other than AI/AN are mutually exclusive. If a respondent who self-identified with Hispanic ethnicity, and at the same time, checked one or more race other than AI/AN, they were classified as “Hispanic” only.
- The major race groups listed in Table E were the primary races that survey respondents checked. Anyone who checked two or more races were categorized in a “multiracial” group, which is not reported.
- Southeast Asian included those respondents who indicated they were Hmong, Cambodian, Laotian, Thai, Vietnamese, or Burmese.
- The two sub-groups of foreign-born Black or US-born Black, were derived from their response to question G9.

G9. Were you born in the United States?

- Yes
 No

Technical Notes

The cases of US-born Black and foreign-born Black do not add up to total of Black or African American group. This was due to 6 cases who did not answer question G9 and were excluded from the subgroup report.

- Data coding and reporting groups listed in Table E adhere to the new Hennepin County Public Health data practice standards. The order of the groups presented in the data book also follow the standards¹⁰, i.e. in alphabetic order when it is applicable.

Gender

Survey question G1 was used to gather data on gender.

G1. Are you...?

- Male
- Female
- Non-binary
- Something else, please specify _____

Gender is a key demographic factor for reporting, as well as for statistical weight calculation. Steps were taken to reduce the number of missing and potential data processing errors.

Open-end text coding and consolidation

Question G1 included a “Something else, please specify _____” response option. Of the 10,226 whole sample, 31 respondents entered text. The G1 open-ended text, along with the text entered in sexual orientation (G3) were reviewed and coded by the SHAPE Team in consultation with a Public Health subject matter expert. Specific text coding and processing steps included:

- One or more initial codes that captured the essence of the content relating to gender was assigned.
- The initial codes were consolidated into codes that mirrored the listed groups in G1 and were recoded into these respective groups.
- The G1 text relating to SOGI that was not recoded into the listed groups remained in the “Other” group.
- If the G1 texts were irrelevant to gender, they were not counted in the “Other” group.
- If the text contained information relating to transgender (G2) or sexual orientation (G3), it was added to the corresponding text coding group.
- Similarly, if text entered in sexual orientation (G3) contained information relating to gender identify (G1), it was used for G1 coding.

Missing value imputation

Of the 10,226 whole sample, 237 left question G1 blank. Of 237, 5 were assigned as “Female” if they checked a “Yes” to either one of two survey items:

- Hypertension during pregnancy (A2a)
- Diabetes during pregnancy (A2b)

After data processing, the missing cases for gender were reduced from 237 to 232.

Data book reporting groups

As it has being described earlier, gender was a key demographic factor for this data book. The three gender groups included in the data book were female (5,402), male (3,018) and nonbinary (98).

Specific notes regarding this group:

- The general criteria on minimal sample size for data reporting group was 100. The SHAPE Team made a special exception to include an additional group with at least 80 respondents. As a result, “Nonbinary” gender was added as a reporting group.
- Gender groups are printed in alphabetic order in compliance with the new Hennepin County Public Health data practice standards.⁷
- Sample size for the group “Something else” was too small and suppressed from reporting.

Technical Notes

Special data handling

When gender was used for statistical weight calculation, only those identified as “Female” or “Male” were included as the reference populations following the weighting procedure from the American Community Survey.¹² Therefore, 171 surveys in the mail-plus sample with gender either “Nonbinary” (98), “Something else” (12) or blank (61) were not used for weighting. We could not afford to drop these 171 surveys, especially given the opportunity to report data for gender nonbinary for the first time in SHAPE history. A gender imputation through randomization strategy was employed for these 171 cases in the weight calculation.

Transgender

Respondents were identified as transgender based on question G2.

G2. Do you consider yourself to be transgender?

- Yes
 No

Of the 10,226 whole sample, 100 checked “Transgender.” Question G2 did not have a text field for respondents to enter.

However, some texts from G1 and G3 contained information relating to transgender designation. They were used for G2 coding if transgender was not checked or was missing. The coding work brought one additional respondent to the “Transgender” (101) category.

For the mail-plus sample (8,591) used for the data book, 84 self-identified as transgender.

Sexual orientation

Respondents were asked to check response options to represent their sexual orientation by question G3.

G3. Do you consider yourself ...?

(MARK ALL THAT APPLY)

- Straight or heterosexual
 Lesbian or gay
 Bisexual or pansexual
 Queer
 Questioning
 Something else, please specify _____

Several data cleaning and quality checks were performed for the “MARK ALL THAT APPLY” question. Data review and major coding decisions were executed by the SHAPE Team in consultation with a Public Health subject matter expert.

Data scan illogical error check

- Data scan quality on potential “spill-over” error was not performed. Refer to General technical notes- Selected race and ethnicity for more information.
- Data scan quality on potential illogical responses was performed among surveys that met any of the following criteria:
 - o Checked “Straight” and checked one or more LGBTQ+ options
 - o Checked three or more response options

Of the 10,226 whole sample, 95 cases met the checking criteria. After a review of the scanned images of these 95 surveys, one survey was identified for correction.

Technical Notes

Open-end text coding and group designation

- The last response option for question G3, "Something else," was followed with a space for respondents to provide specifying text.
- Of the 10,226 whole sample, 189 respondents entered texts. These texts, along with the texts entered for sexual orientation in question G1 (a total of 210 entries) were reviewed and coded.
- If texts were meant to be one of three listed response categories, which were not checked by respondents, they were assigned as checked for that category.
- If texts contained information relating to gender identity in question G1, or transgender in question G2, they were added to those categories for text coding.
- If texts entered were irrelevant to the survey question, they were excluded as having checked "Something else."

Data book reporting groups

Using the 8,591 mail-plus sample, sexual orientation was reported for two overall groups:

- Straight/Heterosexual included 7,151 respondents who checked this option and did not check any of the other five response options.
- LGBTQ+ included 980 respondents who checked one or more of five response options. The options were "Lesbian or Gay", "Bisexual or Pansexual", "Queer", "Questioning", or "Something else". Respondents who checked any LGBTQ+ option and checked "Straight or Heterosexual", were only counted in the LGBTQ+ group.

These two groups are mutually exclusive, therefore results can be compared between these two groups. While reporting LGBTQ+ as a combined group was not the most favorable way to report data, communities and data users may need this data for comparison to available other data sources, and to previous SHAPE surveys.

Reporting for sexual orientation was also made to the following three groups:

- Lesbian/Gay included 380 respondents who checked this response option, regardless of checking status for the rest of the response options.
- Bisexual/Pansexual included 410 respondents who checked this response option, regardless of checking status for the rest of the response options.
- Queer included 231 respondents who checked this response option, regardless of checking status for the rest of response the options.

The method to report these three groups best honored how survey respondents self-identified and favored a large sample size. However, comparison between these groups is statistically invalid since they are not mutually exclusive. For example, respondents who self-identified as "Queer" could have also checked "Bisexual or Pansexual". Questioning included 81 respondents. This group was not included this data book primarily due to data table space limitation.

The design as well as data process and data reporting groups of the sexual orientation question for this data book follows the new Hennepin County Public Health data practice standards¹⁰ which was supported by most recent national and local best practices or guidelines.¹³ Data users can contact the SHAPE Team for any data that are not included in the data book or can access the public use data file.

Technical Notes

Household Income

Household income was measured by Federal Poverty Level (FPL). Reporting categories include under 200 percent FPL as well as at or above 200 percent FPL. The reporting categories were derived from the answers to survey questions on household income and household size and categorized using 2021 FPL.¹⁴

Data on household size was the sum of responses from three categories under question G7.

The number of adults in a household was a critical factor in the statistical weight calculation. Special efforts were made to reduce potential data error and impute those that were missing.

G7. INCLUDING YOURSELF, how many adults and children live in your household?

- Number of adults age 18 and older
INCLUDING YOURSELF
- Number of children age 0-5
- Number of children age 6-11
- Number of children age 12-17

Of the 10,226 whole sample, 59 had household sizes that were exceptionally large, such as a size of ten or more, or seven or more adults in the same household. To make needed corrections, scanned images of the surveys were checked case by case, and respective changes or corrections were made. In some instances, the address was entered in a web search to determine the housing type.

For the surveys that respondents left "Number of adults in the household" blank or entered "0," a simple imputation was performed. To designate a new value for the number of adults living in the household for these respondents, the following logic was used:

- If value was missing or 0, the designated value was 1.
- If the value was 1 and the respondents reported being married or living with a partner in a marriage-like relationship, the designated value was 2.

The final household size variables contained no missing cases.

Household income and poverty measure

For the measurement of household income, survey respondents were asked question G12.

G12. Please tell us your household income in 2021 from all earners and all sources before taxes. Remember your responses are confidential.

- | | |
|---|---|
| <input type="radio"/> No income or less than \$13,000 | <input type="radio"/> \$44,001 - \$53,000 |
| <input type="radio"/> \$13,001 - \$17,000 | <input type="radio"/> \$53,001 - \$62,000 |
| <input type="radio"/> \$17,001 - \$26,000 | <input type="radio"/> \$62,001 - \$71,000 |
| <input type="radio"/> \$26,001 - \$35,000 | <input type="radio"/> \$71,001 - \$80,000 |
| <input type="radio"/> \$35,001 - \$44,000 | <input type="radio"/> \$80,001 or more |

The income level ranges listed in G12 were designed to capture data for three levels of FPL classification and were guided by the 2021 FPL¹⁴, as illustrated in Table F, with more detailed income levels for low income.

Technical Notes

Table F. 2021 Federal Poverty Guidelines

Household size	100% FPL	200% FPL
1	\$12,880	\$25,760
2	\$17,420	\$34,840
3	\$21,960	\$43,920
4	\$26,500	\$53,000
5	\$31,040	\$62,080
6	\$35,580	\$71,160
7	\$40,120	\$80,240
8	\$44,660	\$89,320
9	\$49,200	\$98,400
10	\$53,740	\$107,480

These income categories were then converted to FPL, either under 100 percent FPL (<200% FPL), between 100 to 199 percent FPL or at or above 200 percent FPL (≥200%FPL) according to 2021 FPL and household size. The household size was capped at ten in the poverty level calculation. Details on the classification are illustrated in Table G.



Household income \ Household size	<10,000 (1)	\$10,001-\$15,000 (2)	\$15,001-\$24,000 (3)	\$24,001-\$32,000 (4)	\$32,001-\$41,000 (5)	\$41,001-\$49,000 (6)	\$49,001-\$58,000 (7)	\$58,001-\$66,000 (8)	\$66,001-\$74,000 (9)	\$74,001 or above (10)
1	<100%	100-199%	100-199%	≥200%	≥200%	≥200%	≥200%	≥200%	≥200%	≥200%
2	<100%	≤100%	100-199%	100-199%	≥200%	≥200%	≥200%	≥200%	≥200%	≥200%
3	<100%	≤100%	100-199%	100-199%	100-199%**	≥200%	≥200%	≥200%	≥200%	≥200%
4	<100%	≤100%	≤100%	100-199%	100-199%	100-199%	≥200%	≥200%	≥200%	≥200%
5	<100%	≤100%	≤100%	100-199%	100-199%	100-199%	100-199%**	≥200%	≥200%	≥200%
6	<100%	≤100%	≤100%	≤100%	100-199%	100-199%	100-199%	100-199%**	≥200%	≥200%
7	<100%	≤100%	≤100%	≤100%	100-199%	100-199%	100-199%	100-199%	100-199%	≥200%
8	<100%	<100%	<100%	<100%	<100%	100-199%	100-199%	100-199%	100-199%	≥200%
9	<100%	<100%	<100%	<100%	<100%	100-199%	100-199%	100-199%	100-199%	≥200%
10	<100%	<100%	<100%	<100%	<100%	<100%	100-199%	100-199%	100-199%	≥200%

Technical Notes

Table G. Classification of household income measured by 2021 Federal Poverty Guidelines (FPL)

Among the 10,226 whole sample, 802 (or 7.8%) did not answer the household income question. For these respondents, if they checked the box for survey question B1 or checked "Yes" to survey question E5 (see below), they were classified as under 200% FPL. (The income eligibility requirement for receiving MFIP, WIC or Food Support is below 200 percent FPL). As a result, an additional 200 respondents were classified as $\geq 200\%$ FPL.

B1. Do you currently have any of the following types of health insurance or coverage?

- Medicaid, MA, MinnesotaCare, or other public insurance

E5. During the past 12 months, have you or anyone in your household received Medical Assistance (MA), food support (such as, food stamps, SNAP), WIC, or cash assistance such as MFIP or General Assistance (GA)?

- Yes
 No
 Don't know

The classification of household income measured by FPL for the 8,591 mail-plus sample used for this report is illustrated in Table H. A small proportion (4.6%) of the sample had household income missing or invalid.

Table H. Number of respondents by household income (unweighted)

Household income	N	Percent
< 200% of Federal Poverty Level	2,431	28.3%
$\geq 200\%$ of Federal Poverty Level	5,765	67.1%
Federal Poverty Level unknown	395	4.6%
Total	8,591	100.0%

Educational attainment

Educational level of survey respondents was obtained by asking question G11.

G11. What is the highest grade or year of school you have completed?

- Less than high school
 High school graduate or GED
 Some college, associate's degree, or vocational/technical/business school
 Bachelor's degree or higher

Respondents were instructed to check only one option. Among cases where respondents checked two or more options, the highest educational level was selected as the valid response.

Speaking a language other than English most of the time at home

Speaking a language other than English most of the time at home was classified based on question G6:

G6. Do you speak a language other than English most of the time at home?

- Yes
 No

Technical Notes

Economic distress

Economic distress was derived from the survey responses to the following questions.

- E6. During the past 12 months, how often did you worry that food in your household would run out before you had money to buy more?
- Often
 - Sometimes
 - Rarely
 - Never
- E7. During the past 12 months, how often did food in your household not last and you did not have money to get more?
- Often
 - Sometimes
 - Rarely
 - Never
- E8. During the past 12 months, did you or your family miss or delay a rent or mortgage payment because you did not have enough money?
- Yes
 - No

- E9. During the past 12 months, how often have you stayed at someone else's home, in a shelter, slept outside, or somewhere not intended as a place to live because you had no other place to stay?

- Never
- Once
- Twice
- Three or more times

responses
ranging from 0 to 5

- E10. During the past 12 months, how often did lack of transportation keep you from getting places where you needed to go, such as jobs, medical appointments, or shopping?

- Often
- Sometimes
- Rarely
- Never

Respondents who answered "Often" or "Sometimes" to E6, E7, E10 or "Yes" to E8, or checked "Once" or more often response options to E9 questions were classified as having experienced economic distress during the past year.

- A3. Thinking about your mental health, which includes stress, depression, problem with emotions, for how many days during the past 30 days was your mental health NOT good?

Number of days

This question is one of the Health-Related Quality of Life Healthy Days Core Modules (referred as HRQOL-4). Respondents who reported 14 or more days during the past 30 days that their mental health was not good were classified as having frequent mental distress.¹⁵

A valid range is 0 to 30 days. A value of 31 days is coded as 30. A value exceeding 31 days is classified as invalid.¹⁶

Technical Notes

Table-specific Technical Notes

This section of technical notes describes the variables used in the data tables of the SHAPE 2022 Adult Data Book.² The table number listed in the Table I corresponds to the data table number in the data book.

Most data tables in the SHAPE 2022 Adult Data Book report survey responses from a single survey question and results are presented all response options. However, there were some exceptions.

- For some tables, while only one survey question was used, the indicators reported combined two or three response options. This was done either due to column space limitations or because the percentages for some response options were very low.
- Some tables reported data that were coded specifically or calculated from two or more survey questions. These details are described in Table I.

Table I. Table-specific technical notes

Table	Topic	Table-specific technical notes
1 to 3	Overall health, health related quality of life (HRQOL), unhealthy days, frequent mental distress (FMD)	<p>Survey question A1 was used to gather data on Table 1 (the first two indicators) and Table 2.</p> <p>A1. In general, would you say your health is...?</p> <p><input type="radio"/> Excellent</p> <p><input type="radio"/> Very Good</p> <p><input type="radio"/> Good</p> <p><input type="radio"/> Fair</p> <p><input type="radio"/> Poor</p> <p>This question was one of Health-Related Quality of Life Healthy Days Core Module (referred as HRQOL-4).¹⁵</p> <p>Survey question A3 was used to gather data on frequent mental distress (FMD) in Table 1 and data on Unhealthy mental health days in Table 3.</p> <p>Frequent mental distress (FMD), is also used as a data book reporting variable. Refer to General technical notes- Frequent mental distress for more information.</p>

Technical Notes

Table	Topic	Table-specific technical notes
4	High risk of anxiety, GAD-2	<p>High risk of anxiety is derived an ultra-brief screening scale called the Generalized Anxiety Disorder-2 items, or the GAD-2. The survey questions include:</p> <p>A5. During the <u>past 2 weeks</u>, how often have you been bothered by any of the following problems?</p> <p>a. Feeling nervous, anxious or on edge</p> <ul style="list-style-type: none"> <input type="radio"/> Not at all <input type="radio"/> Several days <input type="radio"/> More than half the days <input type="radio"/> Nearly every day <p>b. Not being able to stop or control worrying</p> <ul style="list-style-type: none"> <input type="radio"/> Not at all <input type="radio"/> Several days <input type="radio"/> More than half the days <input type="radio"/> Nearly every day <p>The GAD-2 is a subset of Patient Health Questionnaire-4 items, or PHQ-4¹⁷ asked in SHAPE 2022. For each item, response to “Not at all,” “Several days,” “More than half the days,” and “Nearly every day,” are scored as 0, 1, 2, and 3, respectively. The GAD-2 score can range from 0 to 6. Respondents having a score of 3 points or more on GAD-2 are classified as high risk of anxiety. Studies have shown the GAD-2 scale has 88 percent sensitivity and 81-83 percent specificity for detecting GAD.¹⁷</p>
5	High risk of depression, PHQ-2	<p>High risk of depression is derived an ultra-brief screening scale called the Patient Health Questionnaire-2 items, or the PHQ-2¹⁸. The survey questions include:</p> <p>A5. During the <u>past 2 weeks</u>, how often have you been bothered by any of the following problems?</p> <p>c. Little interest or pleasure in doing things</p> <ul style="list-style-type: none"> <input type="radio"/> Not at all <input type="radio"/> Several days <input type="radio"/> More than half the days <input type="radio"/> Nearly every day <p>d. Feeling down, depressed or hopeless</p> <ul style="list-style-type: none"> <input type="radio"/> Not at all <input type="radio"/> Several days <input type="radio"/> More than half the days <input type="radio"/> Nearly every day <p>The PHQ-2 is a subset of Patient Health Questionnaire-4 items, or PHQ-4¹⁷ asked in SHAPE 2022. For each item, response to “Not at all,” “Several days,” “More than half the days,” and “Nearly every day,” are scored as 0, 1, 2, and 3, respectively. The PHQ-2 score can range from 0 to 6. Respondents having a score of 3 points or more on PHQ-2 are classified as high risk of depression. Studies have shown that the PHQ-2 scale has a sensitivity of 83 percent and a specificity of 90 percent for detecting major depression disorder.</p>

Technical Notes

Table	Topic	Table-specific technical notes
6	Hypertension	<p>Question A2a was asked to everyone to gather data on hypertension.</p> <p>A2. Have you <u>ever</u> been told by a doctor, nurse, or other health professional that you had any of the following?</p> <p>a. Hypertension, also called high blood pressure</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Yes, but only during pregnancy <input type="radio"/> Borderline high or pre-hypertension <input type="radio"/> No <p>The category “Yes, but only during pregnancy” is not reported in these data tables due to very low percentages.</p>
7	Diabetes	<p>Question A2b was asked to everyone to gather data on Diabetes</p> <p>A2. Have you <u>ever</u> been told by a doctor, nurse, or other health professional that you had any of the following?</p> <p>b. Diabetes or sugar disease</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Yes, but only during pregnancy <input type="radio"/> Pre-diabetes or borderline diabetes <input type="radio"/> No <p>The category “Yes, but only during pregnancy” is not reported in these data tables due to very low percentages.</p>
8	Asthma	<p>Question A2c was asked to everyone to gather data on asthma</p> <p>A2. Have you <u>ever</u> been told by a doctor, nurse, or other health professional that you had any of the following?</p> <p>c. Asthma</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No → GO TO QUESTION A3 <p>cd. Do you still have asthma?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <p>Currently have asthma was measured among all survey respondents, not among those who have ever had asthma.</p>

Technical Notes

Table	Topic	Table-specific technical notes
9	Weight status, Body Mass Index (BMI)	<p>Body mass index (BMI) is calculated from self-reported weight and height using the standard formula:</p> $\text{BMI} = (\text{weight in kilograms}) \div (\text{height in meters})^2$ $\text{BMI} = 703 * (\text{weight in pounds}) \div (\text{height in inches})^2$ <p>When reporting weight, female respondents who were pregnant at the time of the survey were asked to provide their weight before they were pregnant.</p> <p>Classification of weight status by BMI according to national guidelines is: Underweight (BMI < 18.5); Healthy weight (BMI = 18.5 to 24.9); Overweight (BMI = 25.0 to 29.9) and Obese (BMI ≥ 30.0).¹⁹</p> <p>Valid value range for height is 36 to 95 inches; Valid range for weight is 50 to 650 pounds; and for BMI is 12 to 99. This is consistent with the BRFSS data-coding guidelines.²⁰</p> <p>Before BMI calculation, surveys which reported a height or weight that was out of the valid range were pulled to check if there were errors in transcribing written value of height (in feet, inches, or centimeters), or weight (in pounds or kilograms).</p> <ul style="list-style-type: none"> • 142 surveys were pulled for height value review, corrections and changes were made on 104 of them. • 72 surveys were pulled for weight value review, corrections and changes were made on 28 of them. <p>More cases were pulled to check with consolidated weight in pounds and height in inches were calculated, if value was extreme and out of range.</p>
11 to 12	Healthcare coverage	<p>There are other surveys that estimate insurance status at the state and federal level. Due to differences in question format and coding of responses, specific caution is advised in comparing SHAPE results to other estimates of insurance status. The public use data file for this project contains original as well as created variables used for this data book and will be available upon request at a later date.</p> <p>Data on health insurance coverage was derived from B1, a five-item survey question. This is a "MARK ALL THAT APPLY" question.</p> <p>B1. Do you <u>currently</u> have any of the following types of health insurance or coverage? (MARK ALL THAT APPLY)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Insurance provided by an employer or bought directly by myself, my spouse or family <input type="checkbox"/> Medicaid, MA, MinnesotaCare, or other public insurance <input type="checkbox"/> Medicare <input type="checkbox"/> Other, specify _____ <input type="checkbox"/> No health coverage (uninsured)

Technical Notes

Table	Topic	Table-specific technical notes
11 to 12	Healthcare coverage (continued)	<p>Data cleaning and recoding steps for B1 included:</p> <ul style="list-style-type: none"> • Data scan “spill over” error check The last three response options of question B1 were printed very close to each other and were susceptible for data scan “spill over” error. After 5,989 surveys were scanned, a “spill over” check was performed. <ul style="list-style-type: none"> o 501 surveys were pulled as they had neighboring pair of response options checked. o Nine surveys were found with “spill-over” errors and respective corrections were made. This gave a two percent “spill-over” error rate. The “spill over” error check for rest of the 10,226 sample was not performed for this question. (Refer to General technical notes- Selected race and ethnicity for more information). • Data scan illogical response check Of the 10,226 whole sample, 48 surveys were pulled for illogical response check because they: <ul style="list-style-type: none"> o Checked “No coverage” and at the same time, checked one or more having coverage response options; or o Checked three or more response options in total. Of these 48 surveys, 34 were found to have issues and respective corrections and changes were made.

Technical Notes

Table	Topic	Table-specific technical notes
11 to 12	Healthcare coverage (continued)	<ul style="list-style-type: none"> • Open-end text coding and consolidation Of the 10,226 whole sample, 1,319 respondents entered specifying text under "Other, specify _____." For these surveys: <ul style="list-style-type: none"> o One or more initial codes were assigned that captured the essence of the content relating to healthcare coverage. o The initial codes were then consolidated into codes that mirrored the listed three coverage groups. o Many of texts (about 544) were the name of insurance providers, or names of supplemental insurance without details on coverage types. o Special coding efforts were made for those 544 texts, those that checked "Other" only, but their insurance coverage type was unknown. Coding decisions for these cases were based on the review of other survey items, follow the suggestions from Hennepin County healthcare subject matter experts. Details included: <ul style="list-style-type: none"> (i) Those aged 65 and older were assigned as having Medicare. (ii) Those aged under 65 and those that provided household size and income, were assigned to "Medicaid, MA, Minnesota Care, or other public insurance" on the income guideline.²¹ (iii) The cases where income fit MA or MN Care, but providers were not on the list, were assigned to "Insured, type unknown" category (iv) The cases that listed "discount" health service were coded as uninsured. (v) If the texts were irrelevant to health coverage, they were not counted in the "Other" group. • Data book reporting groups After the data cleaning and coding process described above, the listed five health insurance coverage groups were updated. Then, these five coverage groups were consolidated into four health insurance coverage groups. Some respondents had checked multiple coverage categories. A trumping rule was applied to follow the priority order: public-> Medicare -> private-> other-> uninsured. Four groups of insurance coverage are reported in data book: <ul style="list-style-type: none"> o Private o Public, including Medicare o Insured, type unknown o Uninsured
15	Mental health care need, unmet mental health care need	The survey question included a clarifying statement: <i>A health professional could be a doctor, psychiatrist, psychologist, therapist, or counselor.</i>

Technical Notes

Table	Topic	Table-specific technical notes
16 to 17	Barriers to access mental health care	<p>The respondents who said they delayed or did not get needed mental health care were asked barriers to access care via the following question:</p> <p>B10. Why did you delay or not get the care you thought you needed? (MARK UP TO 3)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Did not know where to go or how to get help <input type="checkbox"/> Could not find provider or appointment <input type="checkbox"/> Could not find provider who speaks my language or understands my culture <input type="checkbox"/> Afraid of what family, community, or people at work would do or think <input type="checkbox"/> Had no insurance or cost was too high <input type="checkbox"/> Had work, family, or other duties <input type="checkbox"/> Other, specify _____ <p>Respondents were instructed to “MARK UP TO 3.” However, during the data scan all the checked responses were captured in the data. Of the 10,226 whole sample, 41 checked more than 3 response options.</p> <p>Data cleaning and recoding steps for question B10 included:</p> <ul style="list-style-type: none"> • Data scan quality check Among all those who responded to question B10, six surveys checked at least five response options. Review of the six surveys found no errors to fix. <p>The data scan “spill over” error check was not performed for this question. (Refer to General technical notes- Selected race and ethnicity for more information).</p> <ul style="list-style-type: none"> • Open-end text coding and consolidation There were 371 specifying texts entered under “Other” response options. These texts were: <ul style="list-style-type: none"> o Assigned with one or more initial codes that captured the essence of content relating to mental health access barriers. o The initial codes were then consolidated into six listed barriers. These specified barriers did not belong to any of the listed six items, and they remained in the “Other” group. o Some specified texts were irrelevant to the access barriers and were removed from the “Other” group. <p>The barriers reported in the table are among those who have experienced unmet mental health care or delayed getting needed mental health care.</p>

Technical Notes

Table	Topic	Table-specific technical notes
18	Usual place of care	<p>Respondents were asked question B4 on their usual place of care.</p> <p>B4. When you are sick or need medical care, where do you usually go? (CHOOSE ONLY 1)</p> <ul style="list-style-type: none"> <input type="radio"/> Doctor's office or clinic (including video or phone) <input type="radio"/> Hospital emergency room <input type="radio"/> Urgent Care <input type="radio"/> Clinic located in a drug or grocery store <input type="radio"/> No usual place <p>This was a single response question. As a self-administered mail survey, some checked more than one response. An exception was made to scan in question B4 data as "MARK ALL THAT APPLY." Of the 10,266 whole sample, 168 checked two or more responses.</p> <p>A data scan illogical check was made for any survey that:</p> <ul style="list-style-type: none"> • Checked "no usual place" as well as one or more response option, or • Checked 3 or more response options in total. <p>Thirty-eight cases (38) were pulled. A review identified issues for eight of them, and respective corrections were made.</p> <p>As 168 surveys checked multiple options, a trumping rule was applied when consolidating all responses into one usual place of care indicator that is reported in Table 18. The rule gave the "worse" usual place care the higher order, listed as No usual place -> Hospital ER-> Urgent care-> Clinic located in a drug or grocery store -> Doctor's office or clinic.</p>
19	Prescription - cut/skip dose due to cost	<p>The category "Yes," is only reported among those that were prescribed any medication. Those that selected "I was not prescribed any medication," were removed from the denominator.</p>
21 to 22	Barrier in telehealth access	<p>Question B12 was a "MARK ALL THAT APPLY" question.</p> <p>B12. Telehealth has become a common way to get healthcare. Which of these make it hard for you to get healthcare on a computer, tablet, or smartphone? (MARK ALL THAT APPLY)</p> <ul style="list-style-type: none"> <input type="checkbox"/> No or slow computer/tablet/smartphone <input type="checkbox"/> No or slow Internet <input type="checkbox"/> I don't know how <input type="checkbox"/> My provider doesn't offer this option <input type="checkbox"/> Other, specify _____ <input type="checkbox"/> None <p>Data cleaning and recoding steps for question B12 included:</p> <ul style="list-style-type: none"> • Data scan illogical response check Of the 10,226 whole sample, 86 surveys were pulled to check for potential data scan illogical error for two reasons: <ul style="list-style-type: none"> o "None" was checked along with one or more from the five other options, or o Four or more response options were checked in total. <p>Of these 86, 74 were found to have issues and respective corrections and changes were made.</p> <p>The data scan "spill over" error check was not performed for this question. (Refer to General technical notes- Selected race and ethnicity for more information).</p>

Technical Notes

Table	Topic	Table-specific technical notes
21 to 22	Barrier in telehealth access (continued)	<ul style="list-style-type: none"> • Open-end text coding and consolidation Of the 10,226 whole sample, 676 respondents entered specifying texts under "Other" text field. These texts were: <ul style="list-style-type: none"> o Assigned with one or more initial codes that captured the essence of content relating to telehealth access barriers. o The initial codes were then consolidated into four listed barriers. For the specified barriers that indeed did not belong to any of the listed four barriers, they were the true "Other" group. o Some specified texts were irrelevant to the access barriers, they were removed from being counted in "Other."
23	Summary measure -Dietary intake	<p>Two questions were used to gather data on fruit and vegetables consumed yesterday:</p> <p>C1. A serving of vegetables – not including french fries – is one cup of salad greens or a half cup of vegetables. How many servings of vegetables did you have yesterday?</p> <p><input type="text"/> Number of servings</p> <p>C2. A serving of fruit is a medium-sized piece of fruit or a half cup of chopped, cut, or canned fruit. How many servings of fruit did you have yesterday? Do not include fruit juice.</p> <p><input type="text"/> Number of servings</p> <p>Having 2 servings or more a day of fruit uses data from question C2. Refer to Table 25 for coding notes.</p> <p>Having 3 serving or more a day of vegetables uses data from question C1. Refer to Table 24 for coding notes.</p> <p>Having 5 servings or more a day of fruits and vegetables is derived from the sum of data gathered from question C1 and question C2. A value exceeding 20 servings was classified as invalid.</p>
24	Servings of vegetables yesterday	<p>This survey question included a clarifying statement: <i>A serving of vegetables - not including french fries - is one cup of salad greens or a half cup vegetables.</i></p> <p>A value exceeding 12 was classified as invalid.</p>
25	Servings of fruit yesterday	<p>The survey question included a clarifying statement: <i>A serving of fruit is one medium-sized piece of fruit or a half cup of chopped, cut, or canned fruit. Do not include fruit juice.</i></p> <p>A value exceeding 10 was classified as invalid.</p>
29	Physical activity	Valid range is 0 to 7 days. A value reported as minutes or exceeding 7 days was classified as invalid.
30	Walk/bike to and from places	Valid range is 0 to 7 days. A value reported as minutes or exceeding 7 days was classified as invalid.

Technical Notes

Table	Topic	Table-specific technical notes
31	Summary measure- Alcohol use	<p>Summary measures of alcohol use are derived from data gathered from three survey questions: C7, C8 and C9. Respondents were provided with a clarifying statement on the definition of one alcoholic drink.</p> <p>For questions C7 to C9, consider a drink of alcohol to be a can or bottle of beer or malt beverage, a glass of wine or a wine cooler, a shot glass of liquor, or a mixed drink.</p> <p>C7. During the <u>past 30 days</u>, on how many days did you have at least one drink of any alcoholic beverage? <input type="text"/> Number of days</p> <p>C8. During the <u>past 30 days</u>, on the days when you drank, about how many drinks did you have on average? <input type="text"/> Number of drinks</p> <p>C9. Considering all types of alcoholic beverages, how many times during the <u>past 30 days</u> did you... a. Have 4 or more drinks on one occasion? <input type="text"/> Number of times b. Have 5 or more drinks on one occasion? <input type="text"/> Number of times</p> <p>Definition for current drinking is having had at least one drink of any alcohol or alcoholic beverage on one or more days during the past 30 days (C7).</p> <p>There were a few respondents who reported zero days to question C7 or left it blank but responded to question C8 with one or more drinks or to question C9 with one or more times. These respondents are classified as current drinkers.</p> <p>The definition for heaving drinking is gender specific: having more than one drink per day (or eight or more drinks a week) for females; having more than two drinks per day (or 15 or more drinks a week) for males. This is an average alcohol consumption during the past 30 days.</p> <p>The definition for binge drinking is also gender specific: having four or more drinks on one occasion at least once during the past 30 days for females; having five or more drinks on one occasion at least once during the past 30 days for males.</p> <p>Definition for excessive drinking is having engaged in either heavy drinking or binge drinking during the past 30 days.</p> <p>The definitions for these alcohol use measures are consistent with definitions used by CDC.²²</p>
32	Current alcohol use - number of days	<p>Valid range for days is 0 to 30. Any partial day, such as "half day" or "1/3 day," was counted as a day.</p> <p>There are a few respondents who are current drinkers (See technical notes for Table 31) but reported zero days to question C7 or left it blank. These respondents are included in the 1-3 days category in this table.</p>
33	Current alcohol use - number of drinks	<p>Valid range for number of drinks per day is 0 to 90. Any portion of a drink, such as 0.5 drink, 1/3 drink, will not be counted as a drink.</p> <p>There were a few respondents who were current drinkers but reported zero drinks to question C8 or left it blank. These respondents are included in the 1 drink category in this table.</p>
34	Current alcohol use - binge drinking	<p>Valid range for times was 0 to 30 times. Any portion value entered, such as 0.4 times or 0.5 times, was rounded. Those values <0.5 were not counted as one time and those >=0.5 were counted as one time.</p>
35	Currently smoking	<p>Currently smoking: a person who was either an everyday smoker or someday smoker.</p> <p>See technical notes for Table 36 for more detail.</p>

Technical Notes

Table	Topic	Table-specific technical notes
36	Current smoking status	<p>Current smoking status was derived from the responses to two questions:</p> <p>C12. Have you smoked at least 100 cigarettes in your entire life? 100 cigarettes = 5 packs</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No → GO TO QUESTION C15</p> <p>C13. Do you now smoke cigarettes every day, some days, or not at all?</p> <p><input type="radio"/> Every day</p> <p><input type="radio"/> Some days</p> <p><input type="radio"/> Not at all → GO TO QUESTION C15</p> <p>Every day smoker: a person who has smoked at least 100 cigarettes in his or her lifetime and now smokes cigarettes every day.</p> <p>Some days smoker: a person who has smoked at least 100 cigarettes in his or her lifetime and now smokes cigarettes on some days.</p> <p>Former smoker: a person who has smoked at least 100 cigarettes in his or her lifetime but does not smoke now.</p> <p>Never smoked: a person who has smoked fewer than 100 cigarettes in his or her lifetime.</p>
37	Menthol cigarette use	Currently smoke menthol cigarettes is among all persons aged 18 and older; whereas menthol is a usual brand of cigarettes is reported among persons 18 and older who are current smokers.
38	Environmental tobacco smoke	This health indicator is reported for household for this data book. As household was the observation unit, rather than an adult, the household-specific statistical weights are used for data reporting in this table.
40	Marijuana use	<p>Question C17 gathers data on marijuana use during the past 30 days and was a "MARK ALL THAT APPLY" question.</p> <p>C17. During the past 30 days, have you used marijuana or products containing THC in any form? (MARK ALL THAT APPLY)</p> <p><input type="checkbox"/> Yes, prescribed by a doctor or healthcare provider</p> <p><input type="checkbox"/> Yes, used for other reasons</p> <p><input type="checkbox"/> No, I didn't use marijuana or products containing THC</p> <p>Data scan illogical checks were made to seven surveys for two reasons:</p> <ul style="list-style-type: none"> • The respondent checked both "No" and "Yes," or • All three response options were checked. <p>Issues were found in two cases and respective corrections and changes were made.</p> <p>The data scan "spill over" error check was not performed for this question. (Refer to the technical notes for race and ethnicity for more information.)</p>

Technical Notes

Table	Topic	Table-specific technical notes
41 to 43	Alcohol, tobacco, other drugs	<p>Alcohol, tobacco, other drugs use problem was derived from question C10, a "MARK ALL THAT APPLY" question.</p> <p>C10. During the past 12 months, have any of the following been a problem for you or your family? (MARK ALL THAT APPLY)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Alcohol <input type="checkbox"/> Marijuana <input type="checkbox"/> Opioids (prescription pain killers, heroin, or fentanyl) <input type="checkbox"/> Other drugs, specify _____ <input type="checkbox"/> Gambling <input type="checkbox"/> None → GO TO QUESTION C12 <p>Data cleaning and recoding steps for question C10 included:</p> <ul style="list-style-type: none"> • Data scan "spill over" check The response options were printed very close to each other and were susceptible for data scan "spill over" error. After 8,500 surveys were scanned, a "spill over" check was performed. Scanned survey images for 223 respondents were reviewed because a neighboring pair of response options was checked. Two cases were found to have "spill-over" errors and respective corrections were made. The "spill-over" error was one percent. The "spill over" check for rest of the 10,226 whole sample was not performed for this question. (Refer to the technical notes for race and ethnicity for more information). • Data scan illogical response check Of the 10,226 whole sample, 66 surveys were pulled to check for potential data scan illogical error for two reasons: <ul style="list-style-type: none"> o "None" was checked along with one or more from the five other options, or o Four or more response options were checked in total. Of these 66 surveys, 34 were found having issues and respective corrections and changes were made. • Open-end text coding and consolidation Of the 10,226 whole sample, 54 respondents entered specifying texts under the "Other drug" text field. These texts were: <ul style="list-style-type: none"> o Assigned with one or more initial codes that captured the essence of content relating to the other drugs. o The initial codes were then consolidated into codes that mirrored listed substance use groups (alcohol, marijuana, and opioid). For the specified drugs that were not recoded into the listed substance use groups, they remained in "Other" group. o If the texts were irrelevant to substance use, they were not counted in "Other" group. <p>Table 41 presented data on the household's experience with a problem due to any of the four listed substance use. It does not include gambling.</p> <p>Table 41 to Table 43, household is the observation unit, rather than an adult, therefore the household-specific statistical weights are used for data reporting.</p>

Technical Notes

Table	Topic	Table-specific technical notes
44	Alcohol, tobacco, other drugs	<p>This indicator measures if ATOD (reported in Tables 42 and 43) has often been a problem for you or your family.</p> <p>As household was the observation unit, rather than an adult, the household-specific statistical weights are used for data reporting in this table.</p>
45	Serious psychological distress, Any psychological distress	<p>Serious Psychological Distress and Any Psychological Distress are derived from a six-item Kessler Psychological Distress Scale, questions D1 to D6, also commonly referred as K6-scale. Each of the six individual questions are reported in Tables 46 to 51.</p> <p>K6-scale is a 6-item self-report measure of psychological distress intended to be used as a quick tool to assess risk for serious mental illness in the general population.^{23,24} The Cronbach's alpha for these six-item internal reliability, using 8,591 mail-plus sample, is 0.89.</p> <p>For each of these six questions, the response values of 0 to 4 are assigned to each of the five response categories (with "All of the time" assigned 4 and "None of the time" assigned 0). The response values of all six questions are then summed to yield a scale ranging from 0 to 24.</p> <p>A value of 13 or more on this scale was used to define experiencing serious psychological distress.</p> <p>A value of 7 or more on this scale was used to define experiencing any psychological distress.</p>
58	Violence	<p>Violence was assessed by question E4.</p> <p>E4. Have you or someone in your household experienced violence? This includes any threat with a weapon, attack, or domestic assault.</p> <p><input type="radio"/> Yes, during the past year</p> <p><input type="radio"/> Yes, more than a year ago</p> <p><input type="radio"/> No</p> <p>There is a clarifying statement for this question, <i>This includes any threat with a weapon, attack, or domestic assault</i> which was not printed in Table 58 due to space limitation.</p> <p>Violence was measured at the household level. The household-specific statistical weights are used for data reporting in this table.</p>
59	Economic distress-summary measure	<p>Economic distress is a summary measure of five economic distress survey items gathered from questions E6 to E10 that are reported in Table 60 to Table 64.</p> <p>Of the five economic distress measures, three were assessed at the household level (Table 60, Table 61, Table 62), and two were assessed at the individual level (Table 63, Table 64).</p> <p>The summary measure in Table 59 was calculated using the household weight. Because of this, the data reported in this table could likely underestimate the true value.</p>
60	Economic distress-food insecurity	<p>Food insecurity was assessed by question E6.</p> <p>E6. During the past 12 months, how often did you worry that food in your household would run out before you had money to buy more?</p> <p><input type="radio"/> Often</p> <p><input type="radio"/> Sometimes</p> <p><input type="radio"/> Rarely</p> <p><input type="radio"/> Never</p> <p>Food insecurity is one of the five factors in overall economic distress summary measure (see Table 59). It is measured at the household level. The household-specific statistical weights are used for data reporting in this table.</p>

Technical Notes

Table	Topic	Table-specific technical notes
61	Economic distress-hunger experience	<p>Hunger experience was assessed by question E7.</p> <p>E7. During the <u>past 12 months</u>, how often did food in your household not last and you did not have money to get more?</p> <ul style="list-style-type: none"> <input type="radio"/> Often <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never <p>Hunger experience is one of the five factors in overall economic distress summary measure (see Table 59). It is measured at the household level. The household-specific statistical weights are used for data reporting in this table.</p>
62	Economic distress-housing insecurity	<p>Housing insecurity was assessed by question E8.</p> <p>E8. During the <u>past 12 months</u>, did you or your family miss or delay a rent or mortgage payment because you did not have enough money?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <p>Housing insecurity is one of the five factors in overall economic distress summary measure (see Table 59). It is measured at the family or household level. The household-specific statistical weights are used for data reporting in this table.</p>
63	Economic distress-homelessness	<p>Being homeless was assessed by question E9.</p> <p>E9. During the <u>past 12 months</u>, how often have you stayed at someone else's home, in a shelter, slept outside, or somewhere not intended as a place to live because you had no other place to stay?</p> <ul style="list-style-type: none"> <input type="radio"/> Never <input type="radio"/> Once <input type="radio"/> Twice <input type="radio"/> Three or more times <p>Being homeless is one of the five factors in overall economic distress summary measure (see Table 59). It is measured at the individual level. Most of the data in this data book are observed at individual level and individual statistical weights, also referenced as geographic statistical weights are used for data reporting.</p>
64	Economic distress-transportation insecurity	<p>Transportation insecurity was assessed by question E10.</p> <p>E10. During the <u>past 12 months</u>, how often did lack of transportation keep you from getting places where you needed to go, such as jobs, medical appointments, or shopping?</p> <ul style="list-style-type: none"> <input type="radio"/> Often <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never <p>Transportation insecurity is one of the five factors in overall economic distress summary measure (see Table 59). It is measured at the individual level. Most of data in this data book are observed at individual level and individual statistical weights, also referenced as geographic statistical weights are used for data reporting.</p>

Technical Notes

Table	Topic	Table-specific technical notes
67 to 71	Discrimination in 5 specific settings/situations	<p>The discrimination in five specific settings, also being referenced as major discrimination²⁵, was asked via question E13.</p> <p>E13. During the <u>past 12 months</u>, have you experienced any of the following? If yes, have you felt that you were treated unfairly or discriminated against? (MARK ALL THAT APPLY)</p> <p>Have you...</p> <ul style="list-style-type: none"> <input type="checkbox"/> Applied for or worked at a job? Did you feel you were treated unfairly or discriminated against? <input type="radio"/> Yes <input type="radio"/> No <input type="checkbox"/> Needed medical, mental, or dental care? Did you feel you were treated unfairly or discriminated against? <input type="radio"/> Yes <input type="radio"/> No <input type="checkbox"/> Needed to rent or buy a place to live? Did you feel you were treated unfairly or discriminated against? <input type="radio"/> Yes <input type="radio"/> No <input type="checkbox"/> Applied for social services or public assistance? Did you feel you were treated unfairly or discriminated against? <input type="radio"/> Yes <input type="radio"/> No <input type="checkbox"/> Dealt with the police? Did you feel you were treated unfairly or discriminated against? <input type="radio"/> Yes <input type="radio"/> No <p>The question was two-tiered.</p> <p>The first-tier question asked respondents if they experienced any of the listed five settings in the past two months. Within the setting that they checked, the respondents were asked the second-tier question, if they felt they were treated unfairly or discriminated against.</p> <p>This was also a "MARK ALL THAT APPLY" question for the first-tier question. However, a data scan quality check was not necessary as the check boxes for five settings were well spaced and all five settings were applicable to many.</p> <p>Many respondents answered "Yes" for the second tier of E13 but left its respective first layer box not checked. This illogical response scenario (referred to as IRS for the rest of this table) is illustrated in Table F using the data from the first setting: "Applied for or worked at a job?"</p>

Technical Notes

Table	Topic	Table-specific technical notes																																
67 to 71	Discrimination in 5 specific settings/situations (continued)	<p>Table J. Response for feeling treated unfairly or discriminated against when you applied for or worked at a job during the past 12 months (E16, 10,226 whole sample, unweighted counts)</p> <table border="1"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="3">Second layer question</th> <th rowspan="2">Total</th> </tr> <tr> <th colspan="3">Treated unfairly or discriminated against</th> </tr> <tr> <th colspan="2">First layer question</th> <th>Yes</th> <th>No</th> <th>Blank</th> <th></th> </tr> </thead> <tbody> <tr> <td rowspan="2">Applied for or worked at a job</td> <td>1 Checked</td> <td>434</td> <td>2069</td> <td>36</td> <td>2539</td> </tr> <tr> <td>0 Not checked</td> <td>385</td> <td>3903</td> <td>3399</td> <td>7687</td> </tr> <tr> <td colspan="2">Total</td> <td>819</td> <td>5972</td> <td>3435</td> <td>10226</td> </tr> </tbody> </table> <p>As illustrated in Table J, the IRS is large. Of the 819 that checked “Yes” for the second-tier question: Treated unfairly or discriminated against in the setting, when they applied for or worked at job, almost half (385, or 47%) did not check the first-tier question: “Applied for or worked at a job.”</p> <p>The data coding and process decision was:</p> <ul style="list-style-type: none"> To code these IRS cases (385 in Table J) to mark those that also checked the first-tier question. The percent of reporting being discriminated against among those who experienced includes IRS cases (or 385) in both numerator and denominator, as illustrated below. $\text{Percent (\%)} = (434+385) / (434+385+2609) *100$ <p>This coding and calculation approach could be challenged for those who did not check the first-tier question, it is uncertain if they did not experience the setting/situation since there is no check option, or they just skipped that first layer question.</p>			Second layer question			Total	Treated unfairly or discriminated against			First layer question		Yes	No	Blank		Applied for or worked at a job	1 Checked	434	2069	36	2539	0 Not checked	385	3903	3399	7687	Total		819	5972	3435	10226
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Total		819	5972	3435	10226																													
72	COVID-19 pandemic negative impact, summary measure	<p>Adult:</p> <p>The summary measure of negative COVID-19 pandemic impact on adults was derived from the seven COVID-19 response options presented in Table 73 and Table 74.</p> <p>Child:</p> <p>The summary measure of negative COVID-19 pandemic impact on children in households was derived from the five COVID-19 response options presented in Table 75 and Table 76.</p> <p>Special notes for Child are:</p> <ul style="list-style-type: none"> The data is reported among those with children in household. The household-specific statistical weights were used for data reporting in this table. 																																

Technical Notes

Table	Topic	Table-specific technical notes
73 to 74	COVID-19 pandemic negative impact, adult	<p>COVID-19 pandemic negative impact on survey respondents, was assessed via question F1, a "MARK ALL THAT APPLY" question.</p> <p>F1. The COVID-19 pandemic has affected our community in many areas. Check the ways your life has been negatively impacted by the COVID-19 pandemic. (MARK ALL THAT APPLY)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Physical health <input type="checkbox"/> Mental health <input type="checkbox"/> Connections to family and/or friends <input type="checkbox"/> Death of family and/or friends <input type="checkbox"/> Housing <input type="checkbox"/> Job and/or income <input type="checkbox"/> Education access and quality <input type="checkbox"/> Other, specify _____ <input type="checkbox"/> My life has not been negatively impacted <p>Data cleaning and recoding steps for F1 included:</p> <ul style="list-style-type: none"> • Data scan illogical response check Of the 10,226 whole sample, 325 surveys were pulled to check for potential illogical error because they had: <ul style="list-style-type: none"> o Checked the last option "My life has not been negatively impacted" and at the same time, checked at least one of the eight listed negative impacts, or o Checked seven or more response options in total. <p>Of these 325 surveys, 228 had issues, mostly the illogical responses in checking both "not impacted" and "impacted." The respective corrections and changes were made. For cases who checked both "not impacted" and "impacted," the "impacted" response overwrote the "not impacted" response, i.e. "My life has not been negatively impacted" was recoded as unchecked.</p> <p>The data scan "spill over" error check was not performed for this question. (Refer to the technical notes for race and ethnicity for more information).</p>

Technical Notes

Table	Topic	Table-specific technical notes
73 to 74	COVID-19 pandemic negative impact, adult (continued)	<ul style="list-style-type: none"> • Open-end text coding and consolidation Of the 10,226 whole sample, 564 respondents entered texts under "Other, specify_____." These texts were: <ul style="list-style-type: none"> o Assigned with one or more initial codes that captured the essence of the content relating to the negative impact on adults. o The initial codes were then consolidated into codes that mirrored the listed eight negative impact groups and were recoded into these respective groups. The specified negative impacts that were not recoded into the listed eight groups (including "Other") remained in "Other" group. o If the texts were irrelevant to negative impacts, they were not counted in the "Other" group.
75 to 76	COVID-19 pandemic, child	<p>COVID-19 pandemic negative impact on children in the household was assessed via question F2, a "MARK ALL THAT APPLY" question.</p> <p>F2. Check the ways children (age 0 to 17) in your household have been negatively impacted by the COVID-19 pandemic. (MARK ALL THAT APPLY)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Physical health <input type="checkbox"/> Mental health <input type="checkbox"/> Connections to family and/or friends <input type="checkbox"/> Childcare access and quality <input type="checkbox"/> Education access and quality <input type="checkbox"/> Other, specify _____ <input type="checkbox"/> My child's life has not been negatively impacted <input type="checkbox"/> There are no children age 0 to 17 in this household <p>Data cleaning and recoding steps for F1 included:</p> <ul style="list-style-type: none"> • Data scan illogical response check Of the 10,226 whole sample, 98 surveys were pulled to check for potential illogical error because they had: <ul style="list-style-type: none"> o Checked the option "There are no children aged 0 to 17 in this household" or the option "My child's life has not been negatively impacted" but also checked at least one of the listed 6 negative impacts (including "Other"), or o Checked six or more response options in total. <p>As question F2 asked negative impact of COVID-19 on children in the household, data gathered from question G7 on number of children in household, as well as survey respondents' age, were also included when these 98 surveys were reviewed to support the coding decision. A complex trumping rule matrix that incorporates all above mentioned factors was developed to guide the coding decision. Of these pulled 93 surveys, 83 surveys were identified as having issues and respective corrections were made.</p> <p>The data scan "spill over" error check was not performed for this question. (Refer to technical notes for race and ethnicity for more information).</p>

Technical Notes

Table	Topic	Table-specific technical notes
75 to 76	COVID-19 pandemic, child (continued)	<ul style="list-style-type: none"> • Open-end text coding and consolidation Of the 10,226 whole sample, 156 respondents entered specifying texts under the "Other, specify____" text field. These texts were: <ul style="list-style-type: none"> o Assigned with one or more initial codes that captured the essence of the content relating to the negative impact on children. o The initial codes were then consolidated into codes that mirrored the listed 5 negative impact groups and were recoded into these respective groups. The specified negative impacts that were not recoded into the listed 5 groups remained in "Other" group. o If the texts were irrelevant to negative impacts, they were not counted in "Other" group. <p>As household was the observation unit, rather than an adult, the household-specific statistical weights were used for data reporting in this table.</p> <p>The data are reported among those households with children.</p>

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Komal Mehotra
Hennepin County Public Health
Health Services Building, MC 963
525 Portland Avenue
Minneapolis, Minnesota 55415
SHAPE@Hennepin.us

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