

Iowa Counties Health Study 2020



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Translation

We would like to thank Miriam Velez-Bermudez, PhD, MS, MPH, Janeth I. Sanchez, PhD, MPH and Michelle Doose, PhD, MPH for translating survey items from English to Spanish.

Holden Comprehensive Cancer Center Community Advisory Board

We would like to thank the members of the Holden Comprehensive Cancer Center Community Advisory Board for collaborating on the development of the survey and report.

Hospital Representatives & Public Health Practitioners

We would like to thank the representatives at Critical Access Hospitals in select rural counties for their time and assistance with testing survey items.

Funding

The project was supported in part by the University of Iowa Holden Comprehensive Cancer Center 3P30CA086862, University of Iowa Holden Comprehensive Cancer Center COVID-19 Supplement Grant 3P30CA086862-19S5, and the National Center for Advancing Translational Sciences of the National Institutes of Health UL1TR002537.

Introduction

The mission of the University of Iowa Holden Comprehensive Cancer Center is to decrease the pain and suffering caused by cancer in Iowa, surrounding communities, and the world. Holden Comprehensive Cancer Center is the only National Cancer Institute (NCI) designated cancer center in the state of Iowa. All NCI-designated cancer centers serve a specific catchment area, or geographic area. Holden Comprehensive Cancer Center's catchment area includes the entire state of Iowa.

The purpose of Holden Comprehensive Cancer Center Community Outreach & Engagement is to reduce the cancer burden in Iowa by engaging researchers and the population in assessing and addressing community-identified cancer needs. Holden Comprehensive Cancer Center is committed to engaging with individuals and organizations across Iowa to understand and reflect state interests and needs within cancer research and care.



Methods

PURPOSE OF SURVEY AND RESEARCH QUESTIONS

The purpose of this survey was to 1) assess perceptions, health behaviors, and disruptions related to the COVID-19 pandemic, with a focus on cancer prevention and control and 2) examine differences between rural and urban respondents in Iowa.

SAMPLE

Individuals eligible to participate were 18-100 years of age, registered to vote in Iowa in 2018, and able to communicate in English and/or Spanish. Registered voters were randomly selected from the 2019 Iowa Voter Registry file. Oversampling was conducted in six rural counties (Adair, Appanoose, Buena Vista, Mahaska, Wayne, Winneshiek) to ensure adequate response by rural community members and better understand rural health and behaviors. In total, 557 voters were randomly selected from each of the six rural counties listed above, and 6,667 voters were randomly selected from the rest of the state.

SURVEY DEVELOPMENT

The survey incorporated several topics identified as important by the Holden Comprehensive Cancer Center Community Advisory Board (CAB), including physical activity, demographics, rurality, health literacy, screening, and financial access. CAB members also provided input on the survey introduction, and they recommended that the survey be available in multiple languages.

The survey was made up of newly created questions, previously validated questions, and questions that were modifications to previously validated questions. Survey questions were created in collaboration with the COVID-19 supplemental grant group including University of Alabama at Birmingham, University of Colorado, Ohio State University, and Wayne State University.



DATA COLLECTION

Protocol

A survey was mailed to a stratified random sample of 10,009 Iowans from the 2018 voter registration file in August 2020. Survey mailings contained a \$5 bill. A follow up mailing was sent to 5,239 non-responders several weeks later.

Timeframe

The survey was in the field from August 2020 to December 2020.

Response rate

There were 4,048 responses (40% response). Of respondents, 65% were rural residents and 35% were urban residents. Paper surveys were completed by 86% of respondents, and 14% of respondents completed online surveys.

Limitations

Sampling for this study was limited to those who were registered to vote. Voter registry files often underrepresent minority individuals. Data was only collected at one point in time, so causality cannot be inferred. It is possible respondents did not accurately remember past events and may have misreported.

DATA ANALYSIS

Descriptive statistics were calculated. Data were weighted to account for oversampling in rural counties. T-tests or chi-square tests were calculated where appropriate to assess rural and urban differences. Rurality was defined using Rural Urban Continuum Codes (RUCC). RUCC 1-3 counties are counties in metro areas with a population of 250,000+ or in metro areas with a population less than 250,000. RUCC 4-9 counties are counties that can be adjacent or not adjacent to metro areas with urban populations that are greater than 20,000, urban populations with a population of 2,500 to 19,999, or completely rural populations with populations less than 2,500. RUCC 1-3 were defined as urban and RUCC 4-9 were defined as rural. Asterisks were used to denote level of significance (* = $P < .05$, ** = $P < .01$, *** = $P < .001$, NS = not significant).

Abbreviations

n: number

M: mean

SD: standard deviation

BMI: body mass index

BMI Formula: $\text{weight (lb)} / [\text{height (in)}]^2 \times 703$

Contact for Further Information

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Iowa Health Study Results

Characteristics

	Statewide		Rural (RUCC=4-9)		Urban (RUCC=1-3)		
	n=4053		n=1711		n=2342		
	n	%	n	%	n	%	
What is your age in years? – M (SD, Range)	58.2 (16.9, 19-97)		60.0 (13.5, 19-97)		57.0 (21.0, 19-96)		***
18-24	128	3%	41	2%	87	4%	
25-34	289	7%	104	6%	185	8%	
35-44	513	13%	191	11%	322	14%	
45-54	571	14%	215	13%	356	15%	
55-64	885	22%	386	23%	499	22%	
65-74	952	24%	439	26%	512	22%	
75-84	474	12%	242	14%	231	10%	
85+	182	5%	75	4%	107	5%	
What sex were you assigned at birth, on your original birth certificate?							NS
Male	1766	44%	750	44%	1016	44%	
Female	2234	56%	941	56%	1293	56%	
Prefer not to answer	12	<1%	6	<1%	6	<1%	
How do you describe yourself? (self-description of gender)							NS
Male	1748	44%	744	44%	1004	44%	
Female	2219	56%	943	56%	1276	55%	
Transgender or do not identify as male/female/transgender	12	<1%	2	<1%	10	<1%	
Prefer not to answer	21	<1%	6	<1%	15	<1%	
Do you consider yourself to be: (sexual orientation)							***
Heterosexual or straight	3739	95%	1606	96%	2133	94%	
Bisexual	44	1%	2	<1%	42	2%	
Gay or lesbian	60	1%	15	1%	45	2%	
Prefer not to answer	101	3%	42	3%	59	2%	
What is your marital status?							NS
Single, never married	395	10%	138	8%	257	11%	
Married	2739	68%	1185	70%	1554	67%	
Not married but living with romantic partner	127	3%	51	3%	75	3%	
Separated	21	1%	5	<1%	16	1%	
Divorced	373	9%	162	10%	210	9%	
Widowed	346	9%	153	9%	192	8%	



	Statewide		Rural (RUCC=4-9)		Urban (RUCC=1-3)		
Which one or more of the following would you say is your race?							***
White	3836	97%	1655	98%	2176	96%	
Black or African American	39	1%	6	<1%	33	1%	
American Indian or Alaska Native	8	<1%	3	<1%	5	<1%	
Asian or Asian American	42	1%	5	<1%	37	2%	
Other (Native Hawaiian/other Pacific Islander included)	32	1%	14	1%	24	1%	
Are you of Hispanic, Latino/a, or Spanish origin?							NS
Yes, of Hispanic, Latino/a, or Spanish origin	60	2%	20	1%	40	2%	
No, not of Hispanic, Latino/a, or Spanish origin	3993	98%	1692	99%	2301	98%	
Do you have any kind of healthcare coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare, or Indian Health Service?							***
Private Insurance (purchased through employer or union)	1790	46%	648	40%	1142	51%	
Private Insurance (self-purchased)	250	6%	132	8%	117	5%	
Medicare	144	4%	56	3%	89	4%	
Medicaid or other state program	1437	37%	699	43%	738	33%	
TRICARE/VA/Military	77	2%	27	2%	50	2%	
Uninsured	188	5%	74	5%	114	5%	
How many children less than 18 years of age live in your household? – M (SD, Range)		0.5 (1.1, 0-22)		0.4 (0.4, 0-10)		0.5 (1.4, 0-22)	



Education, Income, and Work

	Statewide	Rural (RUCC=4-9)	Urban (RUCC=1-3)	
What is the highest grade or level of schooling you completed?				***
Less than 12 years of schooling	99 2%	53 3%	47 2%	
12 years or completed high school diploma or GED	881 22%	451 27%	430 19%	
Post-high school training (technical/vocational school)	422 11%	218 13%	204 9%	
Some college	839 21%	395 23%	443 19%	
College degree	1186 30%	420 25%	766 33%	
Post-graduate	573 14%	156 9%	416 18%	
Employment Status: Select the category that best describes you.				***
Employed for wages	1802 46%	710 43%	1093 49%	
Self-employed	341 9%	183 11%	158 7%	
Out of work	107 3%	29 2%	78 3%	
Homemaker	113 3%	45 3%	68 3%	
Student	60 1%	12 1%	48 2%	
Retired	1460 38%	657 40%	803 36%	
Thinking about members of your family living in your household, what is your combined annual income, meaning the total pre-tax income from all sources earned in the past year?				***
\$0-\$9,999	78 2%	45 3%	33 1%	
\$10,000-\$14,999	90 2%	38 2%	53 2%	
\$15,000-\$19,999	99 3%	48 3%	51 2%	
\$20,000-\$34,999	355 9%	177 11%	177 8%	
\$35,000-\$49,999	358 9%	185 11%	173 8%	
\$50,000-\$74,999	660 17%	311 19%	349 15%	
\$75,000-\$99,999	570 15%	235 14%	335 15%	
\$100,000-\$199,999	798 20%	267 16%	531 24%	
\$200,000 or more	219 6%	52 3%	167 7%	
Prefer not to answer	666 17%	286 17%	380 17%	
Which one of these comes closest to your own feelings about your household's income these days?				*
Living comfortably on present income	2091 53%	833 50%	1258 55%	
Getting by on present income	1421 36%	625 37%	795 35%	
Finding it difficult on present income	344 9%	168 10%	176 8%	
Finding it very difficult on present income	93 2%	43 3%	50 2%	



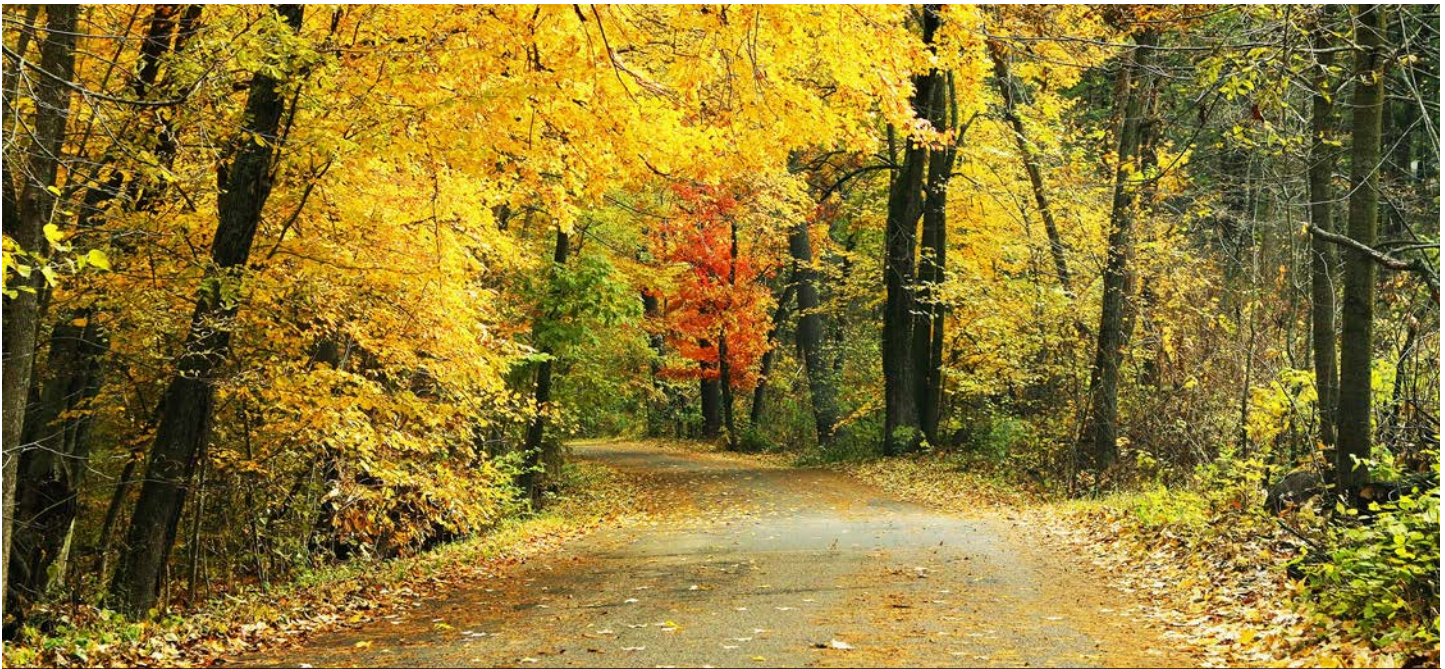
Health

	Statewide		Rural (RUCC=4-9)		Urban (RUCC=1-3)		
Male BMI – M (SD, Range)	29.0 (5.7, 9.1-104.8)		28.5 (6.9, 10.1-71.8)		29.7 (4.8, 9.2-104.8)		**
BMI less than 18.5 kg/m ²	17	1%	8	1%	9	1%	
BMI 18.5-24.9 kg/m ²	295	21%	105	17%	189	25%	
BMI 25.0-29.9 kg/m ²	486	35%	244	40%	242	32%	
BMI greater than or equal to 30.0 kg/m ²	577	42%	256	42%	322	42%	
Female BMI – M (SD, Range)	28.7 (6.8, 10.7-124.9)		29.1 (5.7, 10.3-125.0)		28.4 (8.3, 10.9-69.5)		*
BMI less than 18.5 kg/m ²	24	1%	11	1%	13	1%	
BMI 18.5-24.9 kg/m ²	577	31%	230	29%	347	33%	
BMI 25.0-29.9 kg/m ²	630	34%	305	38%	324	31%	
BMI greater than or equal to 30.0 kg/m ²	609	33%	255	32%	353	34%	
Has your weight changed compared to before the COVID-19 pandemic?							***
I weigh MORE now than before the COVID-19 pandemic	905	23%	335	20%	570	25%	
I weigh LESS now than before the COVID-19 pandemic	584	14%	214	13%	370	16%	
I weigh the SAME now as before the COVID-19 pandemic	2497	63%	1137	67%	1360	59%	
Has a doctor ever diagnosed you with any of the following conditions? Heart disease, high blood pressure, lung disease, diabetes, kidney disease, liver disease, anemia or other blood disease, cancer, depression, none of the above –Mean number of conditions reported (SD, Range)	1.0 (1.1, 0-8)		1.1 (1.0, 0-8)		0.9 (1.3, 0-7)		***
In general, would you say that your health is?							**
Excellent	458	11%	194	11%	264	11%	
Very good	1611	40%	612	36%	999	43%	
Good	1436	36%	649	38%	786	34%	
Fair	427	11%	204	12%	222	10%	
Poor	81	2%	41	2%	40	2%	



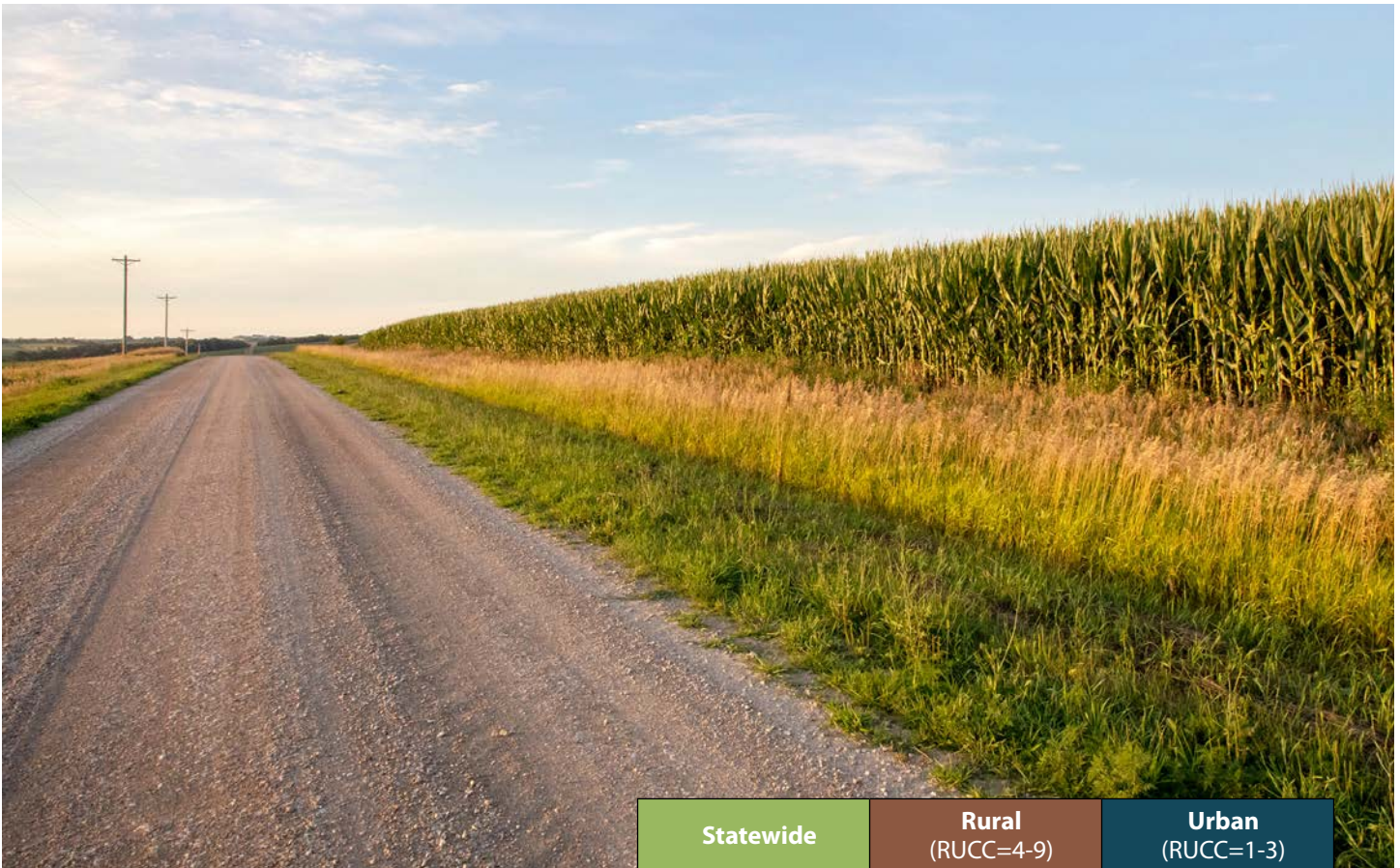
Physical Activity and Nutrition

	Statewide		Rural (RUCC=4-9)		Urban (RUCC=1-3)		
Have you changed the frequency of your physical activity compared to before the COVID-19 pandemic?							***
More	510	13%	153	9%	356	15%	
Less	970	24%	331	20%	639	28%	
Same	2504	63%	1198	71%	1306	57%	
Thinking about the last 30 days, in a typical week, how many days did you do any physical activity or exercise of at least moderate intensity for at least 30 minutes, such as brisk walking, bicycling at a regular pace, and swimming at a regular pace? – Mean number of days (SD, Range)		8.6 (9.2, 0-30)		8.3 (9.8, 0-30)		9.3 (8.9, 0-30)	***
During the past 30 days, not including juices, how often did you eat fruit? Include fresh, frozen or canned fruit. Do not include dry fruits. – Mean number of servings per day (SD, Range)		1.2 (1.1, 0-15)		1.2 (1.1, 0-15)		1.2 (1.1, 0-15)	NS
During the past 30 days, how often did you eat vegetables other than potatoes? Include things like salad, cooked dried beans, corn, and broccoli. – Mean number of servings per day (SD, Range)		1.3 (1.1, 0-17)		1.3 (1.0, 0-10)		1.3 (1.2, 0-17)	NS
Have you changed the amount of fruit and vegetables you consume per day compared to before the COVID-19 pandemic?							*
More	341	9%	123	7%	218	9%	
Less	247	6%	89	5%	158	7%	
Same	3415	85%	1478	88%	1937	84%	

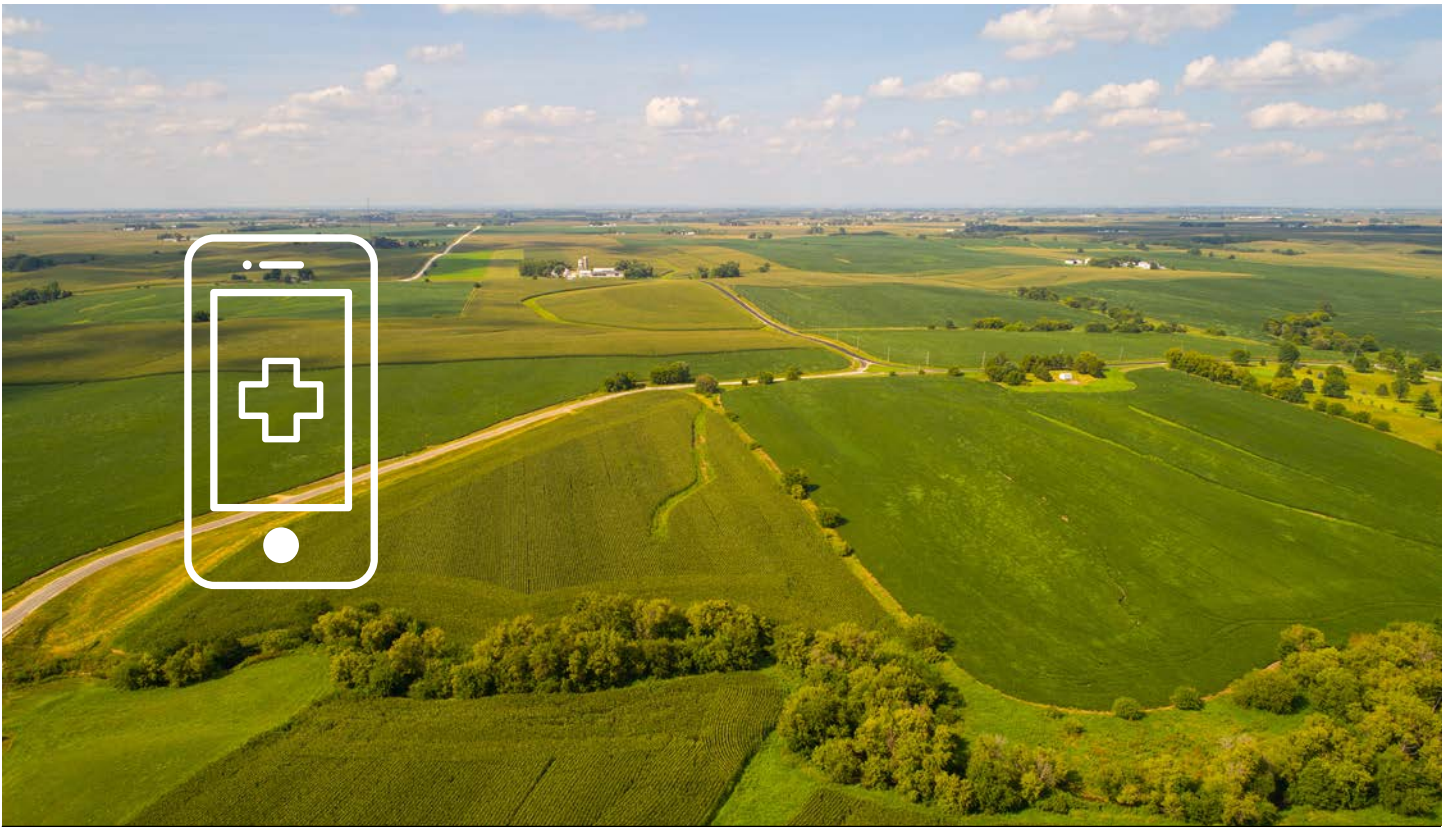


Tobacco and Alcohol Use

	Statewide		Rural (RUCC=4-9)		Urban (RUCC=1-3)		
Have you smoked at least 100 cigarettes in your entire life?							NS
Yes	1457	36%	633	37%	824	36%	
No	2554	64%	1062	63%	1492	64%	
During the past 30 days, have you used any of the following smoking/tobacco products?							
Smoked cigarettes in past 30 days							NS
Yes	358	9%	158	9%	200	9%	
No	3695	91%	1553	91%	2142	91%	
Smoked cigars in past 30 days							NS
Yes	81	2%	30	2%	51	2%	
No	3972	98%	1681	98%	2291	98%	
Used chewing tobacco in past 30 days							NS
Yes	93	2%	50	3%	44	2%	
No	3960	98%	1661	97%	2298	98%	
Used E-cigarettes or other vaping products in past 30 days							NS
Yes	74	2%	26	1%	48	2%	
No	3979	98%	1686	99%	2294	98%	
Have you changed your amount of smoking/tobacco use compared to before the COVID-19 pandemic?							NS
More	127	3%	45	3%	81	4%	
Less	119	3%	50	3%	69	3%	
Same amount	376	9%	176	10%	200	9%	
Did not use tobacco before or during the pandemic	3355	84%	1406	84%	1949	85%	



	Statewide	Rural (RUCC=4-9)	Urban (RUCC=1-3)	
During the past 7 days, on how many days has anyone smoked inside your home, in your presence?				NS
0 days	3709 93%	1558 93%	2151 93%	
1-2 days	66 2%	28 2%	38 2%	
3-4 days	30 1%	13 1%	17 1%	
5-6 days	15 <1%	3 <1%	12 1%	
7 days	171 4%	79 5%	92 4%	
Have you changed the amount of alcohol (e.g. number of days per week or number of drinks on the same occasion) you drink compared to before the COVID-19 pandemic?				***
More	493 12%	129 8%	364 16%	
Less	212 5%	75 4%	137 6%	
Same amount	1890 48%	801 48%	1088 47%	
Did not consume alcohol before or during the pandemic	1374 35%	660 40%	714 31%	
In the past 30 days, on how many days have you had at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor? -M (SD, Range)	2.4 (2.3, 0-30)	2.3 (1.8, 0-20)	2.4 (2.8, 0-30)	NS
In the past 30 days, on how many days did you have 5 or more drinks on the same occasion? -M (SD, Range)	1.8 (4.8, 0-30)	1.8 (4.2, 0-30)	1.8 (5.6, 0-30)	NS



Health Care Use

	Statewide		Rural (RUCC=4-9)		Urban (RUCC=1-3)		
About how long has it been since you last visited a doctor for a routine checkup? A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition.							NS
Within the past year	2957	74%	1249	74%	1707	74%	
More than 1 but less than 2 years ago	582	15%	233	14%	349	15%	
More than 2 but less than 5 years ago	259	6%	117	7%	141	6%	
More than 5 years ago	213	5%	96	6%	117	5%	
Do you have a device (smartphone, laptop, tablet, or desktop computer with webcam) that would allow you to video conference with your healthcare provider (also called 'telehealth')?							***
Yes	3276	82%	1292	77%	1984	87%	
No	696	18%	386	23%	310	13%	
Have you engaged in a video conference visit with any of your healthcare providers?							***
Yes	888	22%	314	19%	574	25%	
No	3088	78%	1370	81%	1718	75%	
If yes, did you feel comfortable communicating with your healthcare provider in a video conference visit?							*
Yes	792	92%	266	89%	526	94%	
No	69	8%	33	11%	36	6%	



Cancer Screening and Prevention

	Statewide	Rural (RUCC=4-9)	Urban (RUCC=1-3)	
Mammography				
A mammogram is a low-dose X-ray of each breast to look for breast cancer. A machine uses an adjustable plastic plate to press against the breast while a picture is taken.				
Have you ever had a mammogram?				*
Yes	1618 44%	686 44%	932 44%	
No	37 1%	20 1%	17 1%	
Not applicable	2021 55%	838 55%	1184 55%	
If yes, how long has it been since you had your last mammogram?				NS
Within the last year	980 61%	416 61%	564 61%	
More than one but less than two years ago	303 19%	125 18%	178 19%	
More than two but less than three years ago	129 8%	58 9%	71 8%	
More than three but less than five years ago	65 4%	27 4%	38 4%	
Five or more years	126 8%	51 8%	75 8%	
Were you planning to have a mammogram between March 1, 2020 and the end of the year?				NS
Yes	902 24%	379 24%	523 25%	
No	474 13%	214 14%	260 12%	
Not applicable	2328 63%	972 62%	1356 63%	
If yes, did you or your doctor postpone your mammogram because of the COVID-19 pandemic?				NS
Yes	229 27%	100 28%	129 26%	
No	629 73%	262 72%	368 74%	

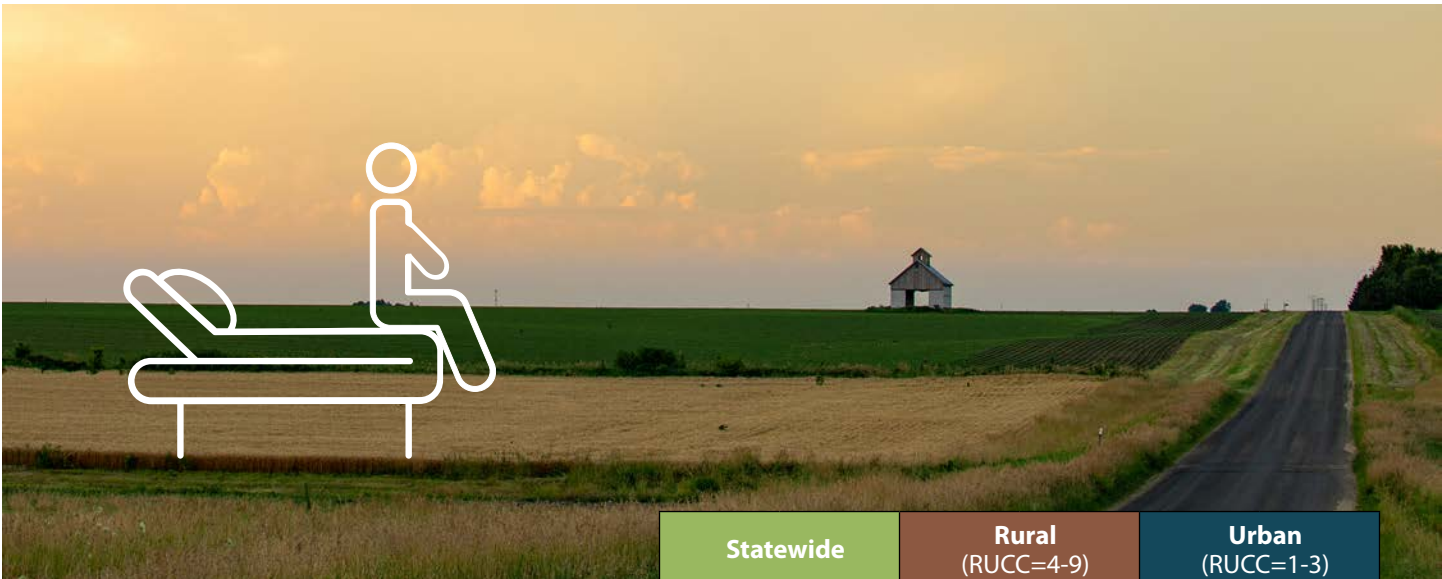
	Statewide	Rural (RUCC=4-9)	Urban (RUCC=1-3)			
Pap Test						
A Pap test (sometimes called a Pap smear) is a test to detect cancer of the cervix. A small sample of cells is taken from a woman's cervix and tested in a laboratory for signs of cancer.						
Have you ever had a Pap test?				NS		
Yes	1812	49%	744	48%	1068	50%
No	93	3%	45	3%	48	2%
Not applicable	1791	48%	764	49%	1027	48%
If yes, how long has it been since you had your last Pap test?				***		
Within the last year	472	27%	161	22%	311	30%
More than one but less than two years ago	357	20%	122	17%	235	22%
More than two but less than three years ago	222	12%	106	15%	116	11%
More than three but less than five years ago	209	12%	96	13%	113	11%
Five or more years	519	29%	242	33%	277	26%
Were you planning to have a Pap test between March 1, 2020 and the end of the year?				***		
Yes	386	10%	130	8%	255	12%
No	881	24%	393	25%	488	23%
Not applicable	2422	66%	1027	67%	1394	65%
If yes, did you or your doctor postpone your Pap test because of the COVID-19 pandemic?				NS		
Yes	97	26%	31	24%	66	27%
No	272	74%	98	76%	174	73%
Stool Test						
There are several ways to screen for colon cancer. One way is a stool blood test. A stool blood test is something you do at home by placing a small sample of your stool or bowel movement in a home collection kit or on a special card that comes in a kit.						
Have you ever had a stool test using a home kit?				**		
Yes	801	30%	479	27%	323	34%
No	1892	70%	1263	73%	629	65%
Not applicable	2	<1%	0	<1%	2	<1%
If yes, how long has it been since you had your last stool test?				NS		
Within the last year	201	25%	118	25%	83	25%
More than one but less than two years ago	120	15%	78	16%	42	13%
More than two but less than three years ago	85	11%	44	9%	41	13%
More than three but less than five years ago	86	11%	48	10%	28	12%
Five or more years	309	38%	191	40%	118	36%
Were you planning to have a stool test between March 1, 2020 and the end of the year?				***		
Yes	117	4%	71	4%	46	5%
No	2594	94%	1685	94%	909	95%
Not applicable	47	2%	44	2%	3	<1%
If yes, did you or your doctor postpone your stool test because of the COVID-19 pandemic?				***		
Yes	21	20%	16	25%	5	12%
No	83	80%	47	75%	36	88%

	Statewide	Rural (RUCC=4-9)	Urban (RUCC=1-3)			
Sigmoidoscopy/Colonoscopy						
Sigmoidoscopy and colonoscopy are other exams to screen for colon cancer. A tube is inserted in the rectum to view the colon for signs of cancer or other health problems.						
Have you ever had either of these exams?				***		
Yes	2095	77%	1322	75%	773	80%
No	638	23%	446	25%	192	20%
Not applicable	2	<1%	0	0%	2	<1%
If yes, how long has it been since you had your last sigmoidoscopy or colonoscopy?				NS		
Within the last year	280	14%	161	13%	119	16%
More than one but less than two years ago	323	16%	217	17%	106	14%
More than two but less than three years ago	308	15%	195	15%	113	15%
More than three but less than five years ago	459	22%	290	23%	169	22%
More than five but less than ten years ago	471	24%	288	23%	183	24%
Ten or more years	189	9%	117	9%	72	9%
Were you planning to get a sigmoidoscopy or colonoscopy screening between March 1, 2020 and the end of the year?				**		
Yes	258	10%	143	8%	115	12%
No	2483	90%	1628	92%	855	88%
Not applicable	4	<1%	2	<1%	2	<1%
If yes, did you or your doctor postpone a sigmoidoscopy or colonoscopy screening because of the COVID-19 pandemic?				NS		
Yes	107	44%	55	42%	52	46%
No	139	56%	78	58%	61	54%
Child HPV Vaccination						
Human Papilloma Virus (HPV) vaccine is given to prevent cancer in males and females. It may have been called Gardasil, Gardasil 9 or Cervarix.						
Have any of your children ages 9-18 received one or more doses of the HPV vaccine?				***		
Yes	484	29%	176	27%	308	30%
No	758	45%	355	54%	403	39%
Not applicable	449	26%	123	19%	326	31%
Were you planning to get the HPV vaccine for your child/any of your children between March 1, 2020 and the end of the year?				NS		
Yes	41	1%	17	1%	24	1%
No	3706	97%	1595	98%	2110	97%
Not applicable	74	2%	20	1%	54	2%
If yes, did you or your children's doctor postpone an appointment for a HPV vaccination for your child/children because of the COVID-19 pandemic?				NS		
Yes	6	12%	2	8%	4	14%
No	45	88%	18	92%	27	86%
Were you scheduled for any cancer-related medical care that you had to cancel or reschedule during the COVID-19 restrictions?				*		
Yes	110	9%	39	7%	71	10%
No	1155	91%	552	93%	603	90%

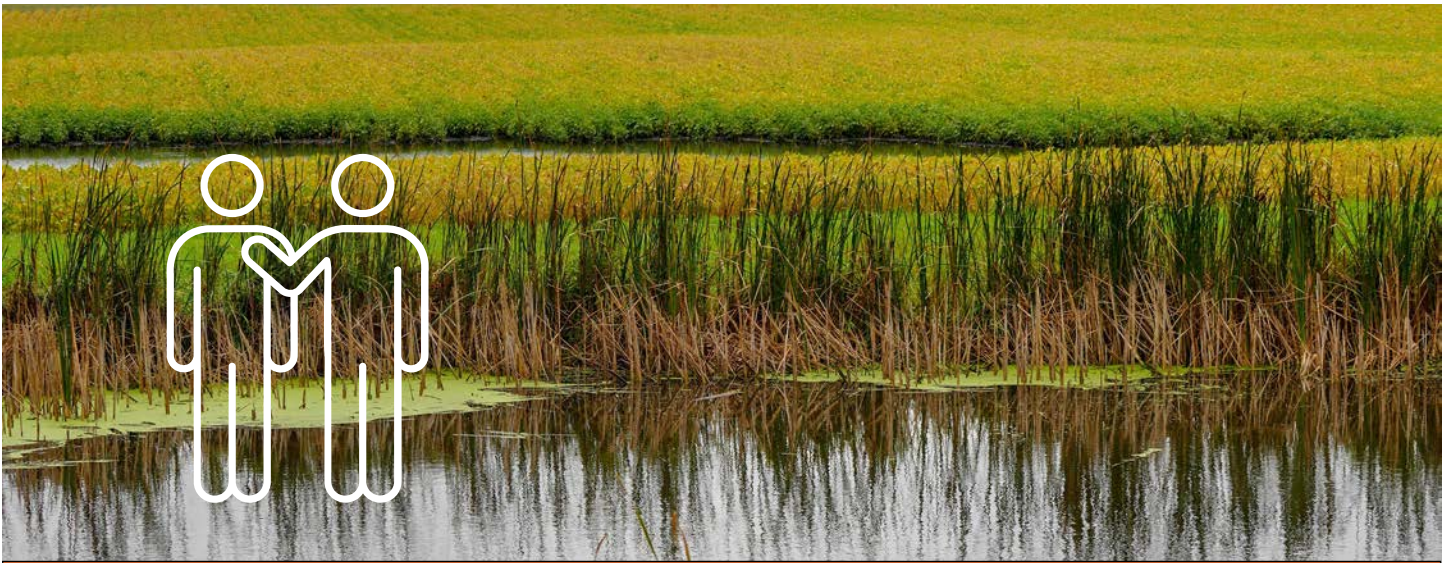


Health Information

	Statewide		Rural (RUCC=4-9)		Urban (RUCC=1-3)		
Overall, how confident are you that you could get advice or information about health or medical topics if you needed it? Rated on a scale from 1 to 5 – M (SD, Range)	1.8 (0.9, 1-5)		1.8 (0.8, 1-5)		1.7 (1.0, 1-5)		**
Completely confident (1)	1790	45%	706	42%	1084	47%	
Very confident (2)	1499	37%	644	38%	855	37%	
Somewhat confident (3)	577	14%	280	17%	297	13%	
A little confident (4)	71	2%	30	2%	41	2%	
Not confident at all (5)	57	1%	26	1%	31	1%	
Based on the results of your most recent search for information about health or medical topics, how much do you agree or disagree with each of the following statements? (Rated on a scale of 1 to 4 or 5, as indicated)							
It took a lot of effort to get the information I needed – M (SD, Range)	3.0 (0.8, 1-4)		3.0 (0.7, 1-4)		3.0 (1.0, 1-4)		NS
Strongly agree (1)	146	4%	56	4%	90	4%	
Somewhat agree (2)	840	22%	337	22%	503	23%	
Somewhat disagree (3)	1562	42%	663	42%	899	41%	
Strongly disagree (4)	1189	32%	502	32%	687	32%	
I felt frustrated during my search for information – M (SD, Range)	3.1 (0.9, 1-4)		3.1 (0.7, 1-4)		3.1 (1.0, 1-4)		NS
Strongly agree (1)	143	4%	59	4%	45	4%	
Somewhat agree (2)	780	21%	328	21%	284	23%	
Somewhat disagree (3)	1445	39%	612	40%	833	41%	
Strongly disagree (4)	1347	36%	547	35%	799	32%	



	Statewide		Rural (RUCC=4-9)		Urban (RUCC=1-3)		
I was concerned about the quality of information – M (SD, Range)	2.8 (0.9, 1-4)		2.9 (0.8, 1-4)		2.8 (1.1, 1-4)		*
Strongly agree (1)	284	8%	113	7%	171	8%	
Somewhat agree (2)	1054	28%	415	27%	639	30%	
Somewhat disagree (3)	1287	35%	547	35%	739	34%	
Strongly disagree (4)	1079	29%	474	31%	606	28%	
The information I found was hard to understand – M (SD, Range)	3.1 (0.8, 1-4)		3.0 (0.7, 1-4)		3.1 (1.0, 1-4)		*
Strongly agree (1)	114	3%	50	3%	65	3%	
Somewhat agree (2)	709	19%	327	21%	383	18%	
Somewhat disagree (3)	1655	45%	678	44%	977	45%	
Strongly disagree (4)	1218	33%	490	32%	727	34%	
How often you need someone to help you when you read instructions, pamphlets, or other written material from your doctor or pharmacy? – M (SD, Range)	1.5 (0.8, 1-5)		1.5 (0.7, 1-5)		1.5 (1.0, 1-5)		NS
Never (1)	2658	67%	1095	65%	1563	68%	
Rarely (2)	878	22%	373	22%	505	22%	
Sometimes (3)	322	8%	170	10%	152	7%	
Often (4)	83	2%	32	2%	51	2%	
Always (5)	50	1%	18	1%	32	1%	
I feel confident in using information from the internet to make health decisions – M (SD, Range)	3.1 (1.0, 1-5)		3.0 (0.8, 1-5)		3.1 (1.3, 1-5)		**
Strongly Disagree (1)	329	8%	146	9%	183	8%	
Disagree (2)	658	17%	262	16%	397	18%	
Undecided (3)	1485	38%	695	43%	791	35%	
Agree (4)	1147	30%	428	27%	718	32%	
Strongly Agree (5)	247	6%	80	5%	167	7%	
Do you ever go online to access the internet, or to send and receive e-mail?							***
Yes	2709	81%	1119	76%	1590	85%	
No	633	19%	358	24%	275	15%	



Covid-19 Pandemic

	Statewide	Rural (RUCC=4-9)	Urban (RUCC=1-3)			
Due to Covid-19, did any of the following happen to you?						
Lose your job or primary source of income				*		
Yes	204	5%	69	4%	135	6%
No	3848	95%	1642	96%	2206	94%
Lose your health insurance				NS		
Yes	26	1%	6	<1%	20	1%
No	3905	99%	1658	99%	2247	99%
Have to work in close contact with people who might be infected (e.g. customers, patients, co-workers)				NS		
Yes	618	15%	262	16%	356	16%
No	3313	85%	1403	84%	1910	84%
Have a hard time doing your job well because of needing to take care of people/children in the home				**		
Yes	182	5%	51	3%	131	6%
No	3749	95%	1613	97%	2136	94%
Have to take over teaching or instructing a child				NS		
Yes	341	9%	128	8%	213	9%
No	3590	91%	1537	92%	2053	91%
Have difficulty taking care of a child or children in the home				*		
Yes	86	2%	24	1%	62	3%
No	3845	98%	1640	99%	2205	97%
Have to move or relocate				NS		
Yes	18	<1%	3	<1%	15	1%
No	3913	99%	1661	99%	2252	99%



Sources Used for Survey Development

All survey questions were taken from other surveys, adapted from other surveys, or created by the authors.

- Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Questionnaire. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2021.
- UCLA School of Law Williams Institute
- Community Initiative Towards Improving Equity and Health Status (CITIES) Project
- Rural Interventions for Screening Effectiveness (RISE) Study
- Survey of the Health of Wisconsin (SHOW)
- Health Information National Trends Survey (HINTS)
- Centers for Disease Control and Prevention (CDC). About Adult BMI. Atlanta, Georgia: Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion, 2022.
- Global Tobacco Surveillance System, Global Youth Tobacco Survey
- Ohio COVID-19 Survey
- Single Item Literacy Screener (SILS)
- eHEALS: The eHealth Literacy Scale
- Epidemic – Pandemic Impacts Inventory (EPII)
- National Health and Nutrition Examination Survey (NHANES)