Annenberg Science and Public Health Knowledge Monitor

Fall 2022

A project of the Annenberg Health & Risk Communication Institute
of the Annenberg Public Policy Center of the University of Pennsylvania

Kathleen Hall Jamieson, Ph.D.
Ken Winneg, Ph.D.
Shawn Patterson Jr., Ph.D.
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October 27, 2022

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The Annenberg Science and Public Health Knowledge Monitor

The Annenberg Public Policy Center (APPC) of the University of Pennsylvania is launching a science and health knowledge monitor comprising quarterly survey reports to track national levels of health knowledge and misinformation over time.

Building on the Annenberg Science Knowledge (ASK) surveys which since 2016 have been focused on health knowledge and misinformation about topics such as the Zika virus, measles, and Covid-19 and vaccination against it, the policy center's Annenberg Science and Public Health Knowledge Monitor (ASAPH) will generate quarterly indices of knowledge about such vital health topics as maternal and reproductive health, vaccination, Covid-19, monkeypox, and indications and treatment of heat-related illness. It also will provide an ongoing measure of public confidence in the National Institutes of Health (NIH), Centers for Disease Control and Prevention (CDC), and Food and Drug Administration (FDA).

Kathleen Hall Jamieson, director of the APPC, highlighted findings from the center's inaugural monitor in a virtual keynote address on October 27, 2022, at the 2022 Charles C. Shepard Science Award ceremony, hosted by the CDC in Atlanta, Georgia.

"One of the greatest challenges faced by public health authorities, scientists, and the media is increasing public knowledge about consequential issues that may affect public health," Jamieson said. "If you don't know that your children should be immunized against childhood diseases under the approved vaccination schedule, for example, your children could be at risk. The monitor is designed to highlight strengths and weaknesses in what the public knows and aid public health authorities in identifying misbeliefs and critical gaps in knowledge."

APPC is debuting the report as the CDC conducts a reorganization designed to provide state and local health authorities and the public with clearer information and to bolster trust. Announcing a "strategic imperative to modernize CDC so that it consistently delivers public health information and guidance to Americans in real time," the CDC said these changes are meant to ensure that "CDC's science reaches the public in an understandable, accessible, and implementable manner as quickly as possible."

Findings

The current report is based on eight waves of a nationally representative panel survey of U.S. adults, first empaneled in April 2021, that was conducted for APPC by SSRS, an independent market research company. The eighth wave of this survey was conducted August 16-22, 2022. It has a margin of sampling error (MOE) of ± 3.3 percentage points at the 95% confidence level. Some of the findings on Covid-19 and monkeypox were previously released.

Among the report's findings:

- **Health and climate change**: Just over half (52%) of U.S. adults know there is a scientific consensus that human use of fossil fuels endangers public health, but nearly as many either say this is false (22%) or are not sure (26%).
  - Less than half of those surveyed know pregnant individuals (41%) and infants and toddlers (45%) face higher climate change-related health risks.

- **Maternal health**: Just 20% of respondents know that the United States has a higher maternal death rate than comparable countries, while a third (32%) think the fatality rate is lower than comparable countries and a third (33%) are unsure. (The U.S. rate is 17.4 deaths per 100,000 pregnancies and is ranked last among industrialized countries.)
  - Nearly 4 out of 5 respondents (79%) know that smoking during pregnancy increases the chances of the smoker's baby having birth defects – but fewer know that smoking also increases the chances a baby will be born early (64%) and the chances a baby will die of sudden infant death syndrome, or SIDS (48%).

- **Vaccine safety and efficacy**: Americans are confident in the overall safety and effectiveness of vaccines to prevent a half-dozen diseases, but the lowest relative confidence levels are in the Covid-19 vaccine's safety (73%) and efficacy (69%) and the HPV (human papillomavirus) vaccine's safety (69%) and efficacy (66%).
  - At the same time, the greatest uncertainty is with the safety (21%) and effectiveness (29%) of the HPV vaccine, which prevents cancer-causing infections and precancers.

- **Childhood vaccines**: Over a third of adults either incorrectly think it's true (19%) or are unsure whether it's true (17%) that the approved childhood vaccine schedule often causes illness by overwhelming a child's immune system. This is untrue.
  - Over a quarter of adults incorrectly think either that vaccines like the MMR (measles, mumps, and rubella) cause autism in children (11%) or say they do not know whether that is true (17%).

- **Monkeypox**: Public knowledge about monkeypox increased rapidly last summer. From July to August, knowledge that a vaccine for monkeypox exists increased from 34% of the public to 61%.
  - And the percentage of the public that knows that men who have sex with men are at greater risk of infection rose from 33% to 63%.

A National Effort is Needed

The Annenberg ASAPH monitor's data identify gaps in consequential knowledge in the general public as well as in demographic subgroups. They also make it possible to track knowledge, misconceptions, and confusion and determine whether existing messaging is affecting health behaviors.

"Consequential knowledge that Zika is mosquito-borne and can be sexually transmitted or that smoking during pregnancy increases the chances that a smoker's baby will be born early or die of SIDS invites preventive or protective behavior," Jamieson said. "Such knowledge is the first step in a pathway toward decisions that are consistent with the best available medical science.

"What these data argue for," she added, "is a coordinated national effort to understand what the public knows about matters that affect the health of individuals, families, communities, and the nation."

Jamieson proposed such an effort by the federal government in a presentation earlier this year to the President's Council of Advisors on Science and Technology. In the March 2022 presentation – which can be viewed on YouTube – she suggested that the CDC, FDA, NIH, and the Office of the Surgeon General create a coordinated health knowledge monitoring, prevalence assessment, and response system.

Data analysis for the Annenberg Science and Public Health Knowledge Monitor was conducted by policy center research analyst Shawn Patterson Jr., Ph.D., and APPC managing director of survey research Ken Winneg, Ph.D. Patrick E. Jamieson, director of APPC's Annenberg Health and Risk Communication Institute, developed the questions in the surveys. Scholars leading the teams that helped to develop pilot panels on Zika, vaccination, and Covid-19 include Dolores Albarracín, Ph.D., director of APPC's Science of Science Communication Division, and Dan Romer, Ph.D., APPC's research director. The cover was designed by APPC senior designer Zachary Reese. The Annenberg Science and Public Health Knowledge Monitor is a project of APPC's Annenberg Health and Risk Communication Division, which is funded by an endowment established for it by the Annenberg Foundation.

The Annenberg Public Policy Center was established in 1993 to educate the public and policy makers about communication's role in advancing public understanding of political, science, and health issues at the local, state, and federal levels.

Related Annenberg Public Policy Center Research

Zika

- Chan, M. P. S., Farhadloo, M., Winneg, K., Jamieson, K. H., Albarracín, D. (2018). Sources affecting knowledge and behavior responses to the Zika virus in US households with current pregnancy, intended pregnancy and a high probability of unintended pregnancy. *Journal of Public Health*, 40(4): 776-786.
- Chan, M. P. S., Winneg, K., Hawkins, L., Farhadloo, M., Jamieson, K. H., Albarracín, D. (2018). Legacy and social media respectively influence risk perceptions and protective behaviors during emerging health threats: A multi-wave analysis of communications on Zika virus cases. *Social Science & Medicine*, 212: 50-59.
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- Ophir, Y., Jamieson, K. H. (2018). Intentions to use a novel Zika vaccine: The effects of misbeliefs about the MMR vaccine and perceptions about Zika. *Journal of Public Health*, 40(4): e531-e537.
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Vaccination

- Chan, Man-pui Sally, Kathleen Hall Jamieson, and Dolores Albarracín. (2020) Prospective associations of regional social media messages with attitudes and actual vaccination: A big data and survey study of the influenza vaccine in the United States. *Vaccine*, 38(48): 6236-6247.
- Kuru, O., Chan, M. P. S., Lu, H., Stecuła, D. A., Jamieson, K. H., Albarracín, D. (2022). Religious affiliation and philosophical and moral beliefs about vaccines: A longitudinal study. *Journal of Health Psychology*, 27(13): 3059-3081.
- Stecuła, D. A., Kuru, O., Jamieson, K. H. (2020). How trust in experts and media use affect acceptance of common anti-vaccination claims. *Harvard Kennedy School Misinformation Review*.
- Stecuła, D. A., Kuru, O., Albarracín, D., Jamieson, K. H. (2020). Policy views and negative beliefs about vaccines in the United States, 2019. *American Journal of Public Health*, 110(10): 1561-1563.
- Stecuła, D. A., Motta, M., Kuru, O., Jamieson, K. H. (2022). The Great and Powerful Dr. Oz? Alternative Health Media Consumption and Vaccine Views in the United States. *Journal of Communication*, 72(3): 374-400.

- Stecuła, D. A., Kuru, O., Albarracín, D., Jamieson, K. H. (2020). Policy views and negative beliefs about vaccines in the United States, 2019. *American Journal of Public Health*, 110(10): 1561-1563.

Misinformation

- Jamieson, K. H., Albarracín, D. (2020). The Relation between Media Consumption and Misinformation at the Outset of the SARS-CoV-2 Pandemic in the US. *The Harvard Kennedy School Misinformation Review*.
- Jamieson, K. H., Romer, D., Jamieson, P. E., Winneg, K. M., Pasek, J. (2021). The role of non–COVID-specific and COVID-specific factors in predicting a shift in willingness to vaccinate: A panel study. *Proceedings of the National Academy of Sciences*, 118(52): e2112266118.
- Romer, D., Jamieson, K. H. (2020). Conspiracy theories as barriers to controlling the spread of COVID-19 in the US. *Social Science & Medicine*, 263: 113356.
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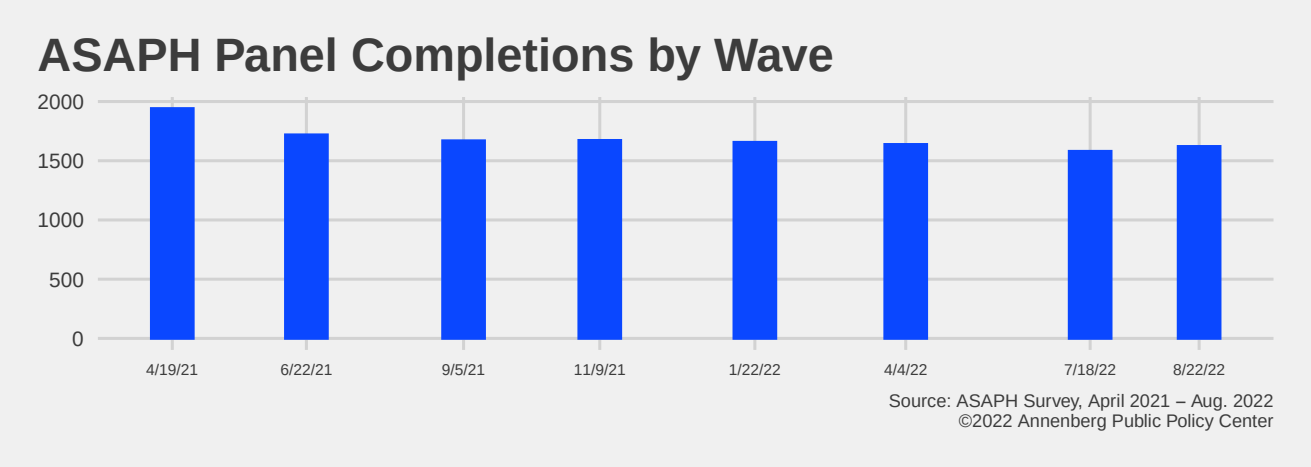
- Romer, D., Winneg, K. M., Jamieson, P. E., Brensinger, C., Jamieson, K. H. (2022). Misinformation about vaccine safety and uptake of COVID-19 vaccines among adults and 5-11-year-olds in the United States. *Vaccine* 40(45): 6463-6470.

Methodology

The data for the Annenberg Science and Public Health (ASAPH) survey were collected from a nationally representative probability panel survey drawn randomly from the SSRS Opinion Panel of U.S adults, 18 and older. SSRS Opinion Panel members are recruited randomly based on nationally representative Address-Based-Sample design (including Hawaii and Alaska). Additionally, hard-to-reach demographic groups were recruited via the SSRS Omnibus survey platform, a nationally representative (including Hawaii and Alaska) bilingual telephone survey designed to meet standards associated with custom research studies.

Both the phone and online surveys were available in Spanish with about 1.7% of the panel using this language. Panel members in our study were not selected for any other studies conducted by SSRS and are considered proprietary. Panelists were invited by email or telephone to participate in the panel and were compensated the equivalent of $15 for their time at each survey wave. The median length of the surveys was 20 minutes. The survey was deemed exempt from review by the Institutional Review Board of the University of Pennsylvania.

Of the 3,476 U.S. adult panelists invited to participate in wave 1 of the survey, 1,941 completed that wave's survey in April 2021 (56% completion rate). The majority completed the survey online rather than by telephone (97% online and 3% by telephone). These 1,941 panelists were re-contacted at each subsequent wave, unless they dropped from the panel. Post-wave 1 panelist completion rates were high, averaging 86 percent each wave and have remained high in subsequent waves 2 through 8.



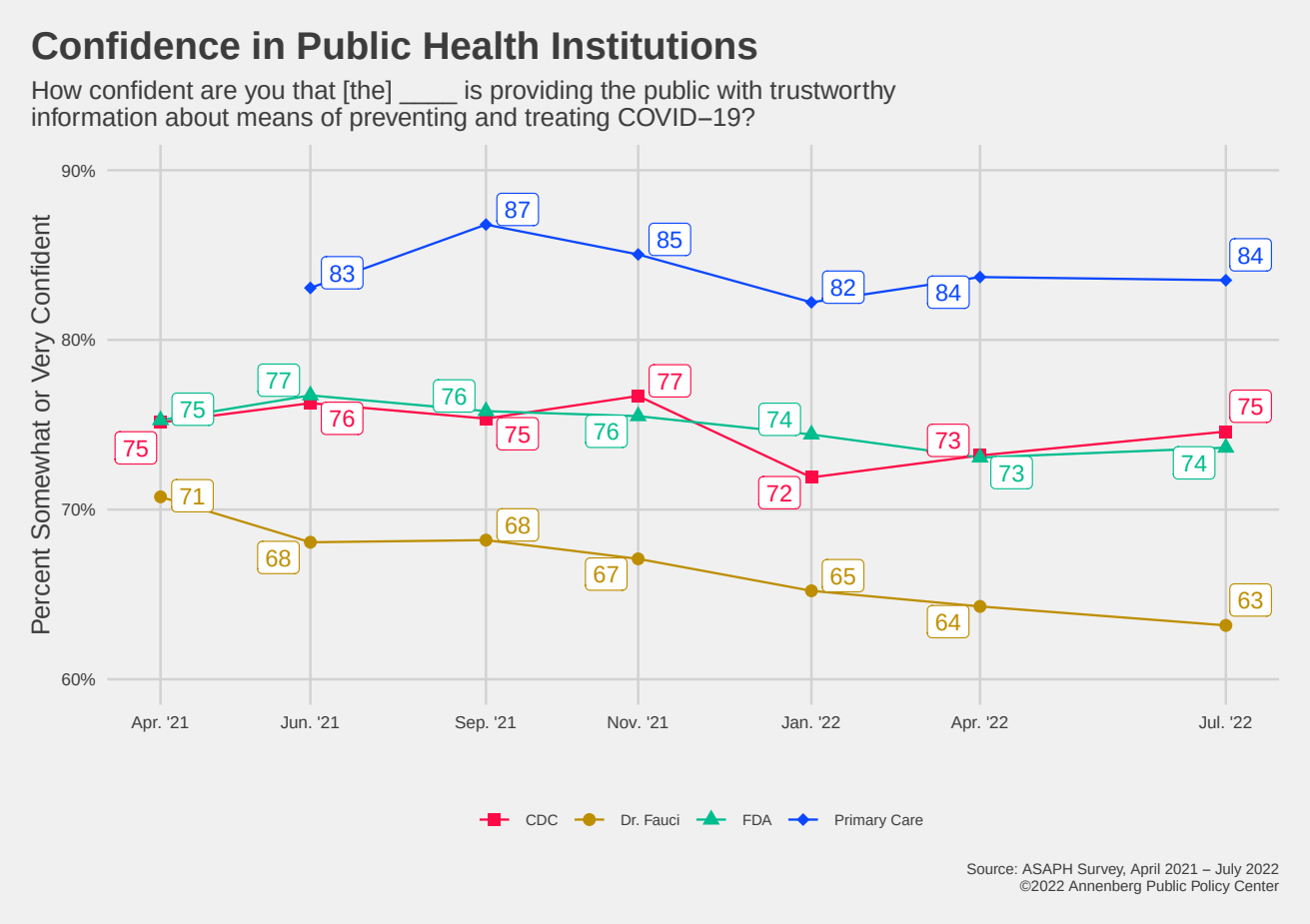
The most recent data in this report are drawn from wave 8 of the study, conducted from August 16-22, 2022, among a sample of 1,621 respondents, 1,574 from the web and 47 by telephone. A total of 1,590 surveys were conducted in English and 31 in Spanish. 1,907 panelists were invited to complete wave 8 of the survey. The response rate was 83.0%. The margin of sampling error for total respondents is +/-3.3 percentage points at the 95% confidence level. For additional methodological detail, see Appendix I.

Confidence in Public Health Institutions and Experts

The Annenberg Science and Public Health (ASAPH) panel has regularly asked respondents to report their level of confidence in those who provide public health information about the treatment and prevention of COVID-19.

Question: In general, how confident, if at all, are you that the following are providing the public with trustworthy information about means of preventing and treating disease/COVID-19?

Figure 1

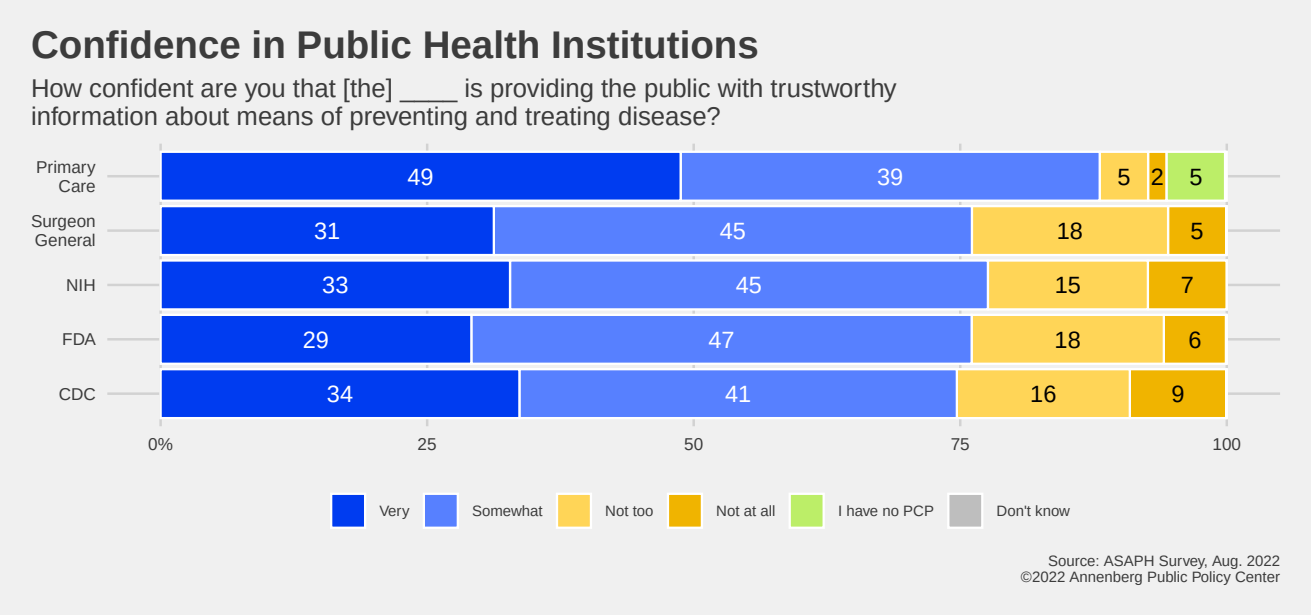


While there have been some fluctuations since the beginning of the pandemic, large majorities (72%-77%) are either somewhat or very confident that the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA) provide the public with trustworthy information about means of preventing and treating COVID-19. As Figure 1 indicates, this confidence has remained relatively stable over the past year.

Perceptions of Dr. Anthony Fauci of the National Institutes of Health (NIH) have, however, changed over time. While public confidence in Dr. Fauci is still high (63% in July), our data reflect an 8-percentage point decline from April 2021 when seven in ten (71%) expressed confidence in him.

Instead of focusing on confidence as it relates to COVID-19, in August 2022, we asked how confident, if at all, respondents are that these institutions and individuals were providing trustworthy information *about the means of preventing and treating disease*. As Figure 2 indicates, the patterns of response are similar to those we found for the COVID-19 specific question; approximately three-fourths of respondents report being somewhat or very confident.

Figure 2



In both contexts, Americans place higher confidence in their primary health care providers. Whereas approximately three-fourths of adults have confidence in the Surgeon General, CDC, FDA, and NIH to provide trustworthy information about preventing and treating COVID-19 and diseases generally, between 82% and 88% feel similarly about their primary health care providers.

Climate Health Knowledge and Misinformation

Human-caused climate change is occurring, and the use of fossil fuels is the primary contributor.[1] Despite concerted efforts to falsely claim there is uncertainty in the scientific community,[2] there is scientific agreement that burning fossil fuels endangers public health.[3]

Question: Scientists are uncertain whether human use of fossil fuels creates effects that endanger public health. **[Correct: False]**

A majority of adults (52%) know that there is scientific agreement that human use of fossil fuels negatively affects health. A little more than a quarter of our respondents (26%), however, say they are unsure about whether scientists have reached this conclusion. As shown in Table 1, those with less education (36% high school or less, 29% only some college) are more likely than college graduates (18%) and postgraduates (11%) to report that they are unsure about this claim. Women (36%) are more likely than men (16%) and non-Hispanic Black respondents (42%) are more likely than non-Hispanic white respondents (22%) to say they are unsure. People who express uncertainty about the accuracy or inaccuracy of an item are more likely than those with a fixed opinion to be receptive to accurate health information about it.

Those who face greater climate change-related health risks include the poor, infants and toddlers, pregnant individuals, the elderly, and those with chronic medical conditions.[4] While most Americans are more likely to say those at risk include individuals with chronic health conditions (65% say that's true), the elderly (60% say true), and those with low income (56% say true), fewer say that the same is true of infants and toddlers (45% say true) and pregnant people (41% say true). About a quarter are unsure of the climate change-related health effects on those who are pregnant (27%) and infants and toddlers (24%) (see Figure 3).

[1] "Scientific Consensus: Earth's Climate is Warming." NASA.gov, Sept. 2022.

[2] Mulvey, Kathy and Seth Shulman. 2015. *The Climate Deception Dossiers: Internal Fossil Fuel Industry Memos Reveal Decades of Corporate Disinformation*. Union of Concerned Scientists.

[3] "Climate Effects on Health." CDC.gov, Sept. 2022, and Kirk, Karin. 2020 "Burning fossil fuels heats the climate. It also harms public health." *Yale Climate Connections*.

[4] "Justice, Equity, Diversity, and Inclusion in Climate Adaptation Planning." CDC.gov, Sept. 2022.

Climate Change and Illness

Question: As far as you know, will climate change increase, decrease, or not affect the number of people affected by illness such as malaria, Lyme disease, West Nile virus, dengue fever, and Zika virus? **[Correct: Increase]**

Table 1: Scientists are uncertain whether human use of fossil fuels creates effects that endanger public health by Education, Gender, and Race

	N	Definitely/ Probably False	Definitely/ Probably True	Or are you not sure?
Total	1621	52	22	26
Education				
High School or Less	314	40	24	36
Some College	442	45	25	29
4-Year College	378	65	17	18
Advanced Degree	487	74	16	11
Gender				
Male	784	62	23	16
Female	829	43	20	36
Race				
White (Non-Hispanic)	1067	56	21	22
Black (Non-Hispanic)	142	44	14	42
Hispanic	203	44	25	31
Asian/ Chinese/ Japanese	147	54	27	19

Source: ASAPH Survey, Aug. 2022
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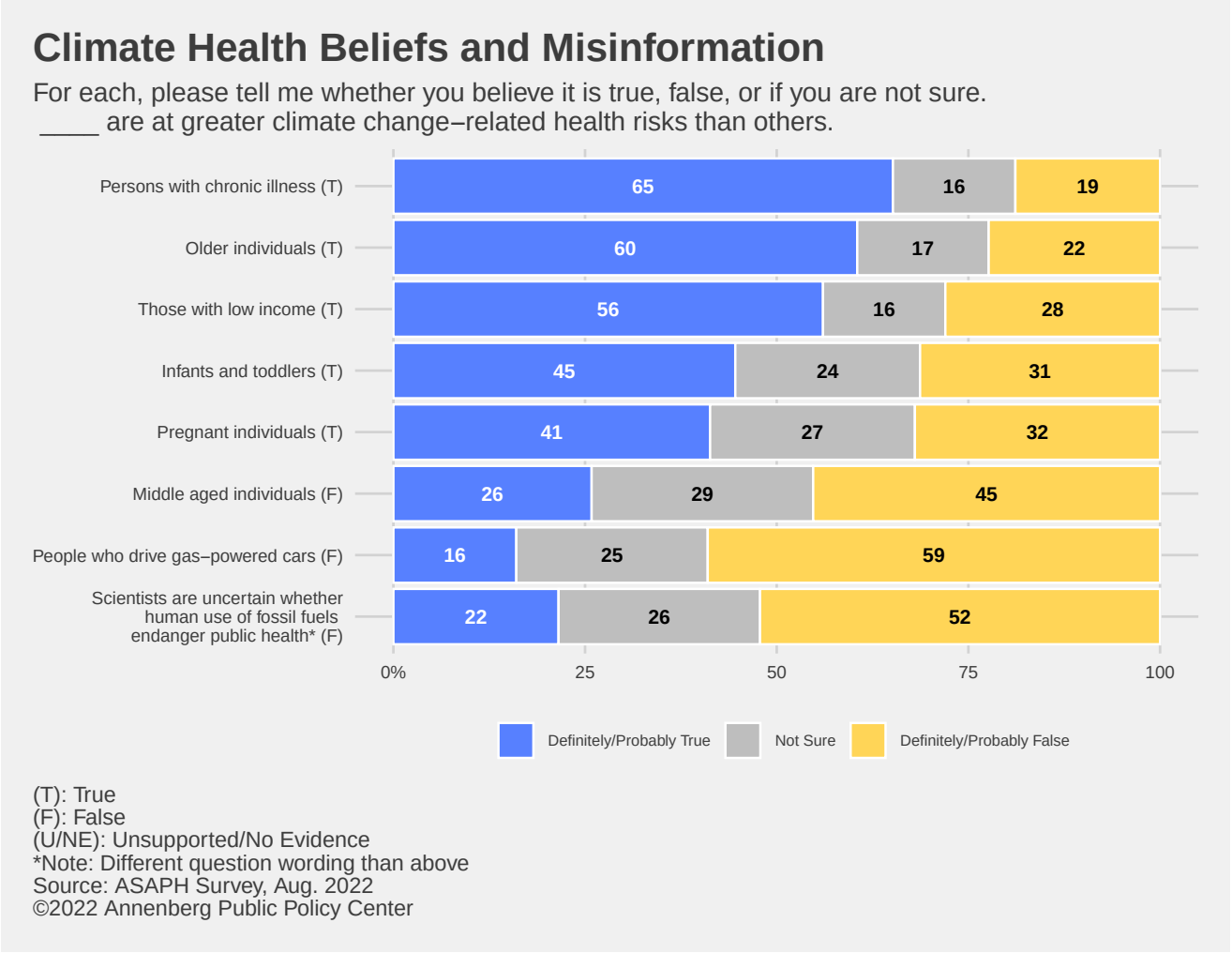
There is uncertainty among many adults about the effects of climate change on insect-borne illnesses such as malaria, Lyme disease, West Nile virus, dengue fever, and Zika virus. While more than four in ten (43%) know that climate change will increase the number of people affected by such illnesses, nearly as many (37%) say they are not sure and just under a fifth (18%) hold that climate change will have no effect (see Figure 4).

Figure 3



(T): True
(F): False
(U/NE): Unsupported/No Evidence
*Note: Different question wording than above
Source: ASAPH Survey, Aug. 2022
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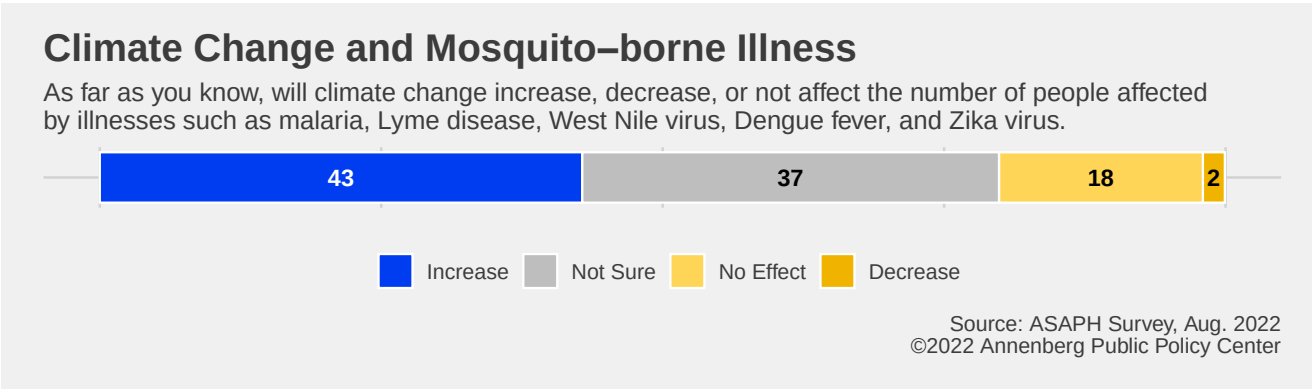
Figure 4



Source: ASAPH Survey, Aug. 2022
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Heat-related Illnesses

Question: As far as you know, which of the following are signs of heat-related illness: Nausea **[True]** *hot, red, dry, or damp skin* **[True]**, *cold, pale, and clammy skin* **[True]**, *dizziness* **[True]**, *hunger* **[False]**, *or are you not sure?*

Question: As far as you know, which is the better way to help prevent heat-related illnesses: Drink water **[True]**, *drink sugary drinks* **[False]**, *one is as good as the other in helping prevent heat-related illnesses* **[False]**, *or are you not sure?*

Question: As far as you know, in which of the following groups of people are heat-related deaths most common: Children, 21 to 40 year olds, 41 to 64 year olds, those who are 65 years or older **[Correct: 65 years or older]**, *or are you not sure?*

Knowledge is widespread about the signs and prevention of heat-related illnesses. Most know the signs of heat-related illnesses with 86% indicating "dizziness," 79% "nausea," and 71% "hot, red, dry, or damp skin." One sign that may require additional messaging is "cold, pale, and clammy skin" since only four in ten (43%) know that symptom is a sign of heat-related illness.

Nearly all know that staying hydrated by drinking water (91%) rather than sugary drinks is the better way to prevent heat-related illnesses.[5] An additional 2% say one is as good as another, and 6% are not sure.

The age group most vulnerable to heat-related deaths is senior citizens aged 65 or older.[6] More than six in ten (62%) adults say that heat-related deaths are most common among this age cohort. Significantly fewer young adults, aged 18 to 29 (37%), know that seniors are more likely than those who are younger to die from a heat-related cause compared with 81 percent of seniors (see Table 2). Non-Hispanic Black (45%) and Hispanic (50%) respondents are significantly less likely than non-Hispanic whites (69%) to know that heat-related deaths are more common among seniors. According to the CDC, heat-related deaths are more common among non-Hispanic Blacks than non-Hispanic whites.[7]

[5] "Warning Signs and Symptoms of Heat-Related Illness. CDC.gov, Sept. 2022.

[6] "Picture of America Report: Heat-Related Illness." CDC.gov, Sept. 2017.

[7] Vaidyanathan A, Malilay J, Schramm P, Saha S. 2020. "Heat-Related Deaths – United States, 2004-2018. *MMWR Morb Mortal Wkly Rep* 69: 729–734

Table 2: In which of the following groups of people are heat-related deaths most common? by Age and Race

	N	Children	21- to 40-year-olds (%)	41- to 64-year-olds (%)	65 years or older (%)	Or are you not sure? (%)
Total	1621	9	4	8	62	16
Age						
18-29	282	12	9	12	37	28
30-49	552	13	5	11	58	14
50-64	417	7	2	8	70	14
65+	351	4	0	2	81	12
Race						
White (Non-Hispanic)	1067	9	3	6	69	12
Black (Non-Hispanic)	142	6	8	13	45	29
Hispanic	203	16	1	13	50	20
Asian/Chinese/Japanese	147	6	4	12	56	20

Source: ASAPH Survey, Aug. 2022
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Asthma Exposure to Wildfire Smoke

Question: As far as you know, which group is not more likely to experience negative health effects from exposure to smoke from a wildfire: Children, people with diabetes, elderly adults, middle aged adults **[Correct: Middle Aged]**, *or are you not sure?*

Question: As far as you know, is climate change: increasing the number of children with asthma **[Correct: Increasing]**, *decreasing the number of children with asthma, not affecting the number of children with asthma, or are you not sure?*

Climate change is leading to an increase in wildfires.[8] Although exposure to smoke from a wildfire can negatively affect everyone's health, some groups, namely children, seniors, and those with underlying conditions such as diabetes, are more likely than others.[9] Middle aged adults are not more likely than these groups to experience such negative health effects from wildfire smoke exposure.

When asked to choose which of these groups is NOT more likely to experience negative health effects from exposure to smoke from a wildfire, nearly half (48%) reported that they were unsure. 26% correctly chose middle aged adults.

[8] "Climate Change Indicators: Wildfires." EPA.gov, Sept. 2022.

[9] Yao, Jiayun, et al. 2020. "Sub-Daily Exposure to Fine Particulate Matter and Ambulance Dispatches during Wildfire Seasons: A Case-Crossover Study in British Columbia, Canada." *Environmental Health Perspectives* 128 (6): June 2020.

Climate change is increasing the number of children with asthma[10] and about four in ten (38%) adults know this. Just as many (41%) are not sure about the effect of climate change on the growth in children's asthma.

Table 3 shows that uncertainty about whether climate change is increasing the number of children with asthma is highest among those with a high school education or less (51% unsure) and non-Hispanic Black respondents (49% unsure). According to the Office of Minority Health, "Non-Hispanic black children were 5 times more likely to be admitted to the hospital for asthma, as compared to non-Hispanic white children, in 2017."[11]

[10] "Climate Health: Allergens and Pollen." CDC.gov, Sept. 2022, and Cissé, Guéladio and Robert McLeman. 2022. "Chapter 7: Health, Wellbeing, and the changing structure of communities." *IPCC WGII Sixth Assessment Report* October 2022.

[11] "Asthma and African Americans." HHS.gov Office of Minorities and Health, Sept. 2022.

Table 3: Climate Change and Children with Asthma by Education and Race

	N	Increasing the number of children with asthma (%)	Decreasing the number of children with asthma (%)	Not affecting the number of children with asthma (%)	Or are you not sure? (%)
Total	1621	38	1	20	41
Education					
High School or Less	314	28	2	18	51
Some college	442	35	0	25	39
4-year College	378	46	0	20	34
Advanced Degree	487	56	1	14	28
Race					
White (Non-Hispanic)	1067	36	1	22	41
Black (Non-Hispanic)	142	39	5	7	49
Hispanic	203	43	0	21	35
Asian/ Chinese/ Japanese	147	47	2	21	29

Source: ASAPH Survey, Aug. 2022
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Deaths due to Climate Change

Question: As far as you know, is the number of deaths associated with climate change: increasing **[Correct: Increasing]**, *decreasing, staying about the same, or are you not sure?*

A plurality correctly thinks the number of deaths associated with climate change is increasing (47%) compared with 10% who say the number of climate-related fatalities is staying about the same and a fifth (20%) who do not associate climate change with death rates. An additional 22% are not sure. Heat-related deaths are

increasing in the U.S.[12]

[12] "Climate Change Indicators: Heat-Related Deaths." EPA.gov, Sept. 2022.

Severe Weather Events

Question: Which of the following statements comes closest to your view: There are more severe weather events now than in the past **[Accurate]**, *there are fewer severe weather events now than in the past, there are roughly the same number of severe weather events now than in the past, or are you not sure?*

The Intergovernmental Panel on Climate Change (IPCC) concludes that "[i]t is an established fact that human-induced greenhouse gas emissions have led to an increased frequency and/or intensity of some weather and climate extremes since pre-industrial time, in particular for temperature extremes."[13]

[13] Seneviratne, Sonia, et al. 2022. "Chapter 11: Weather and climate: Extreme events in a changing climate." *IPCC WGII Sixth Assessment Report* October 2022.

Nearly two-thirds (65%) of all adults know that there are more severe weather events now than in the past, compared with just 3% who say there are fewer and a fifth (21%) who say there are just as many as in the past. One in ten are not sure.

Mold Control

Question: As far as you know, which of the following methods is the preferred one to help control mold: clean moldy surfaces with water and soap **[Preferred]**, *clean the surface with undiluted bleach, or are you not sure?*

An increased likelihood of exposure to mold has been linked to climate change.[14] Most adults (67%) incorrectly believe that cleaning surfaces with undiluted bleach is a preferred way to help control mold. According to the U.S. Centers for Disease Control (CDC) a bleach solution for cleaning should be heavily diluted with water—one gallon of room temperature water with 5 tablespoons of bleach.[15] Only 15% know that water and soap is the preferred method of controlling mold on surfaces. Fewer than one in five (17%) say they are not sure which method is the preferred one.

[14] Paudel, B., et al. 2021. "Increased duration of pollen and mold exposure are linked to climate change. *Sci Rep* 11: 12816.

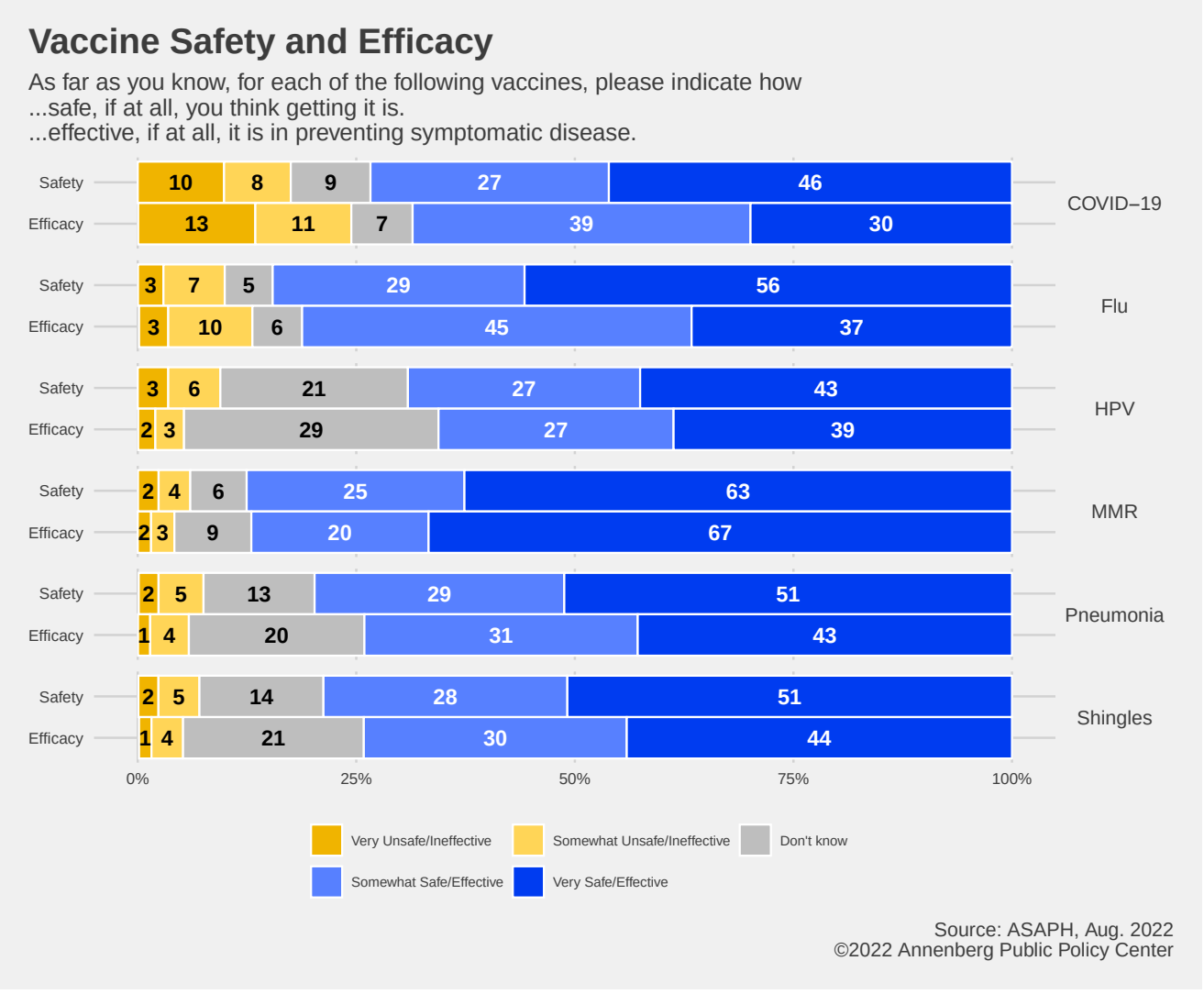
[15] "Water, Sanitation, and Environmentally- related Hygiene: Cleaning and disinfecting with bleach." CDC.gov, June 2022.

Beliefs in Vaccine Safety and Efficacy

Vaccination remains among the great successes in the history of public health, having eliminated some diseases and significantly decreased the number of people experiencing severe symptoms as a result of infection with others.[16] However, it was not vaccines but *vaccination* that produced these effects. To better understand how the American public views vaccines and vaccination, the ASAPH battery asked respondents their views on the efficacy and safety of a series of them (see Figure 5).

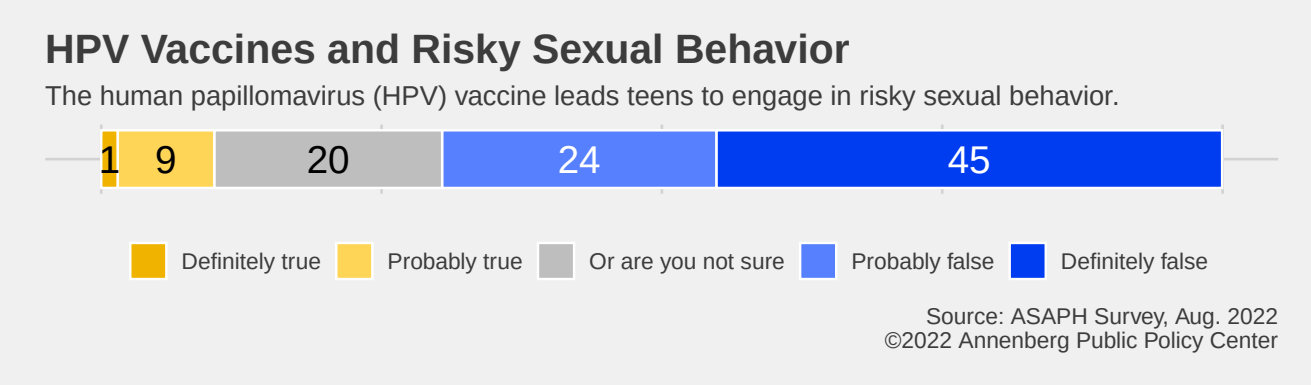
16 "Vaccine Safety: Overview, History, and How the Safety Process Works." CDC.gov, September 2022.

Figure 5



Overall, Americans appear confident in the safety and efficacy of most of these vaccines. At least three quarters of respondents report that the flu, measles, mumps, rubella (MMR), pneumonia, and shingles vaccines are safe and effective. Over 60% report similar confidence in the COVID-19 and Human papillomavirus (HPV) vaccines. However, a worrisome number say they are unsure whether the HPV vaccine is safe (21%) or effective (29%). Figure 6 shows that only 10% of adults believe the false allegation that it is definitely or probably true that this vaccine leads teens to engage in risky sexual behavior.

Figure 6



Although COVID-19 vaccines have been shown to be more effective than the flu vaccine[17] the public views them as significantly less effective, as shown in the top row of Figure 5.

[17] "Vaccine Effectiveness: How Well do Flu Vaccines Work?" CDC.gov, September 2022. and "New COVID-19 Vaccine Effectiveness Data Showcase Protection Gained by 3rd and 4th Doses." CDC.gov, July 2022.

Distinguishing "Up to Date" and "Fully Vaccinated"

QUESTION: If a person is "up to date" on their vaccinations against a disease such as measles or COVID-19 does that mean the same thing to you as saying that the person is "fully vaccinated" or are the meanings of "fully vaccinated" and "up to date" different, or are you not sure? **[Correct: Different]**

There is some confusion in the public about the difference between being "up to date" on vaccinations against diseases such as measles or COVID-19 and being "fully vaccinated." The terms have different meanings. According to the CDC,[18], one is up to date with their COVID-19 vaccines if they have completed a COVID-19 vaccine primary series and received the most recent booster dose recommended for them by the CDC. In earlier months, fully vaccinated was used to indicate that individuals had received their primary series of COVID-19 vaccines and two weeks have

[18] "Stay up to date with COVID-19 vaccines including boosters." CDC.gov, Sept. 2022

passed. Primary series was defined as two shots of either Pfizer or Moderna or one of Johnson & Johnson.[19]

These data come from an APPC survey using a cross-sectional national probability sample of 1,032 adults conducted by SSRS from September 9-12, 2022 that asked respondents if they thought being "up to date" is the same or different than being "fully vaccinated." Slightly more than a third (36%) knew that the meanings were different. Most (54%) thought the meanings were the same. One in ten (10%) said they were not sure.

[19] "Understanding the terms used by the CDC—Up to date vs. fully vaccinated" Indiana Health Care Association. June 7, 2022.

Vaccine Misinformation

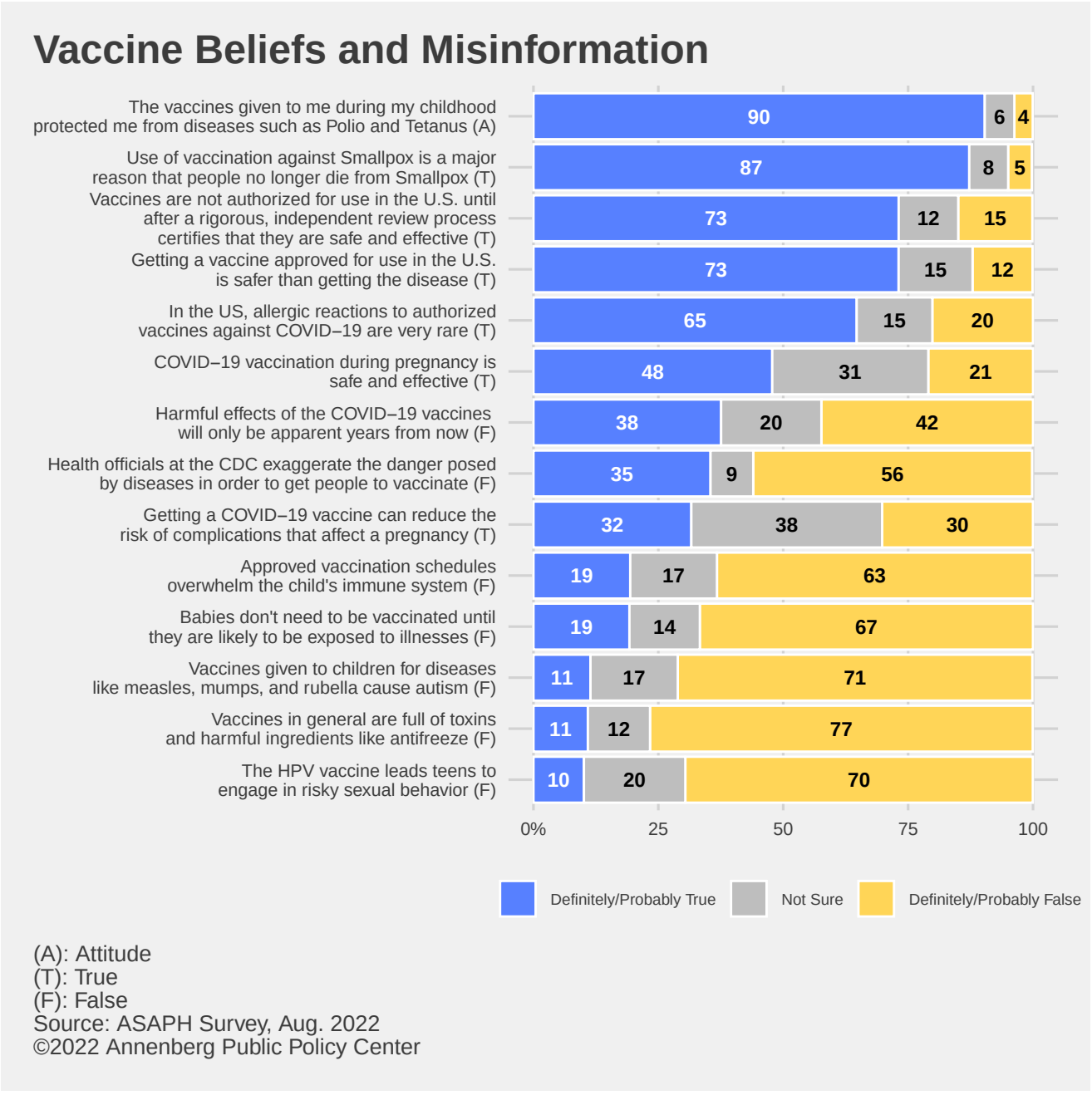
Overall public acceptance of vaccination misinformation is low. As Figure 7 indicates, nine in ten (90%) adults believe that the vaccines they received in childhood protect them from diseases such as polio and tetanus. A similar proportion (87%) reports that the eradication of smallpox was in large part a result of vaccination against the disease. And nearly three-quarters (73%) agree that receiving an approved vaccination in the U.S. is safer than getting the disease.

Similarly, few respondents report that vaccines are full of toxins and harmful ingredients like antifreeze (11%), that the MMR vaccines cause autism (11%), or, as noted above, that the HPV vaccine encourages risky sexual behavior (10%). COVID-19 vaccines are again an outlier. Although severe adverse reactions have been rare,[20] less than two-thirds (65%) of adults report that allergic reactions to COVID-19 vaccines are rare.

[20] "Allergic Reactions after COVID-19 Vaccination." CDC.gov, July 2022.

Important subgroup differences exist in these data. For example, younger (18-49), less educated (less than a four-year degree), and non-Hispanic Black respondents are all more likely to report that MMR vaccines cause autism. Those without a four-year college degree are also significantly less likely to agree that getting a vaccine is safer than getting a disease. They are also more likely to believe the CDC exaggerates the danger posed by diseases in order to get people to vaccinate (See Tables 4, 5, and 6).

Figure 7



(A): Attitude
(T): True
(F): False
Source: ASAPH Survey, Aug. 2022
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Table 4: Vaccines and Autism by Education and Race

	N	Definitely/ Probably False (%)	Definitely/ Probably True (%)	Not Sure (%)
Total	1621	71	11	17
Age				
18-29	282	71	19	11
30-49	552	64	15	21
50-64	417	73	7	20
65+	351	80	3	16
Education				
High School or less	314	62	13	25
Some college	442	70	14	16
4-year College	378	80	9	11
More than college	487	82	6	11
Race				
White (Non-Hispanic)	1067	75	9	15
Black (Non-Hispanic)	142	54	17	29
Hispanic	203	69	14	17
Asian/ Chinese/ Japanese	147	72	11	16

Table 5: Vaccines are Safer than Disease by Education

	N	Definitely/ Probably False (%)	Definitely/ Probably True (%)	Not Sure (%)
Total	1621	12	73	15
Education				
High School or less	314	16	64	21
Some college	442	15	69	16
4-year College	378	6	86	8
More than college	487	7	86	7

Table 6: CDC Exaggerating the danger posed by diseases in order to get people to vaccinate by Education

	N	Definitely/ Probably False (%)	Definitely/ Probably True (%)	Not Sure (%)
Total	1621	56	35	9
Education				
High School or less	314	45	42	13
Some college	442	52	40	7
4-year College	378	64	27	8
More than college	487	75	22	3

Maternal Health Knowledge and Misinformation

Health outcomes for mothers and newborns in the United States lag behind most of our peer industrialized nations.[21] While we found that the public is largely knowledgeable about pregnancy, child rearing, and maternal health, a worrisome number report uncertainty or mistaken beliefs on a number of questions

[21] Tikkanen, Roosa, et al. 2020. "Maternal Mortality and Maternity Care in the United States Compared to 10 Other Developed Countries." *The Commonwealth Fund*.

Knowledge of Maternal Health in the U.S.

Question: As far as you know, is the proportion of pregnancies in the United States that result in death of the person giving birth lower, higher, or about the same as in comparable countries? [**Correct: Higher**][22]

Question: As far as you know, is the rate of infant mortality higher for home births, hospital births, there is no "real" difference between the two, or are you not sure? [**Correct: Higher for Home Births**][23]

Question: As far as you know, are infants born through Cesarean birth, also known as a C-Section, more likely to experience complications, less likely to experience complications, or just as likely to experience complications compared to infants born through vaginal birth, or are you not sure? [**Correct: More likely**][24]

[22] Declercq, Eugene and Laurie Zephyrin. 2020. "Maternal Mortality in the United States: A Primer." *The Commonwealth Fund*, Dec. 2020.

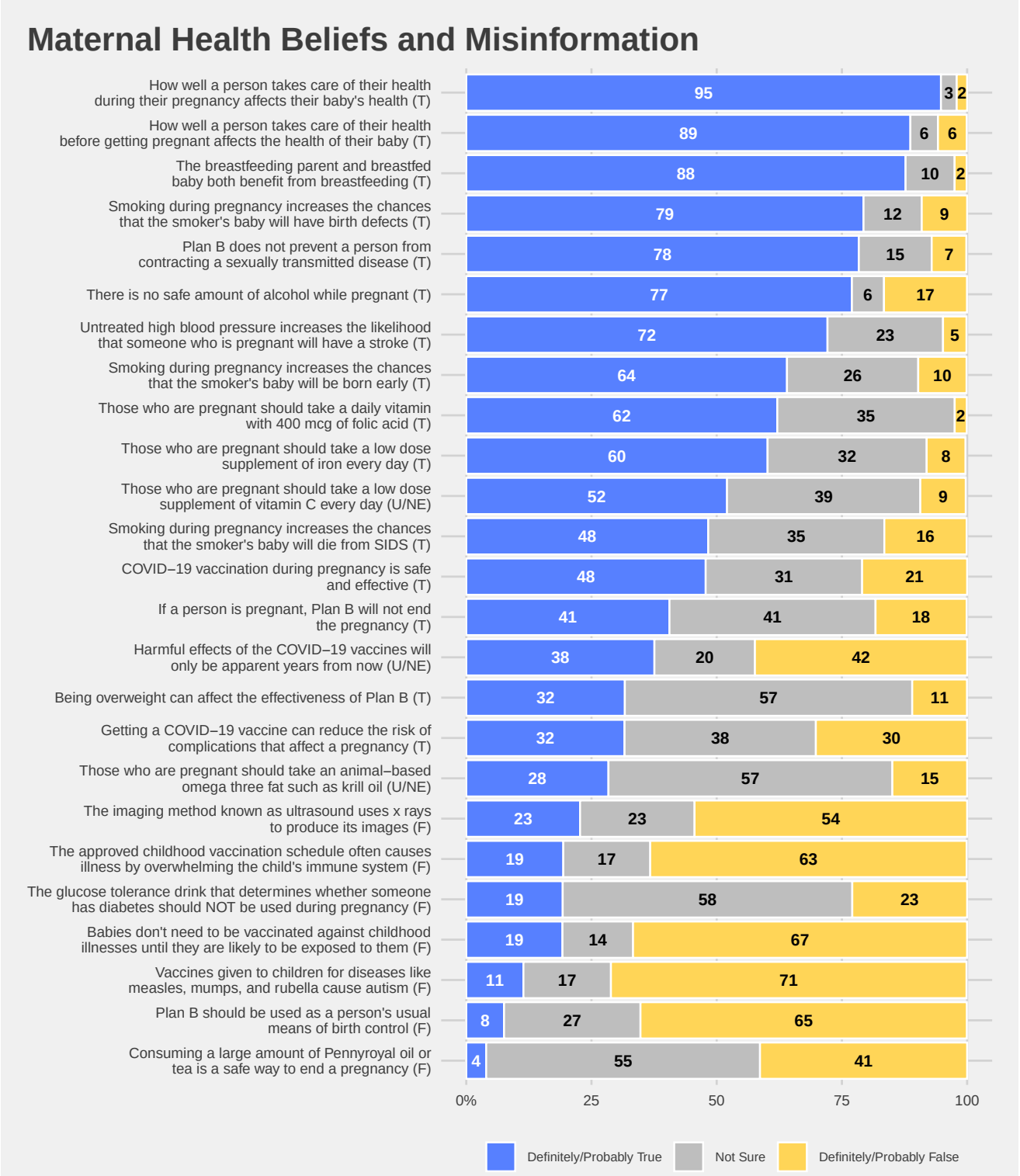
[23] Grünebaum A, et al. 2020. "Neonatal mortality in the United States is related to location of birth (hospital versus home) rather than the type of birth attendant." *Am J Obstet Gynecol* 223 (2)

[24] Annibale DJ, et al. 1995. "Comparative neonatal morbidity of abdominal and vaginal deliveries after uncomplicated pregnancies." *Arch Pediatr Adolesc Med*. 149(8):862–7.

Only 20% of adults know that the U.S. has a higher maternal death rate than comparable countries. Thirty-two percent incorrectly report that U.S. fatality rates are lower, and 33% say they are unsure. Similarly, only 32% of adults correctly indicate that home births are tied to higher infant mortality rates than hospital births and only 11% identified Cesarean births as more likely to experience complications. On these two questions 42% and 34% reported that they were unsure, respectively.

Figure 8 summarizes a battery of questions related to knowledge of issues pertaining to maternal health and child rearing. The variation across responses to these questions is wide.

Figure 8



(T): True
(F): False
(U/NE): Unsupported/No Evidence
Source: ASAPH Survey, Aug. 2022
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Vaccine Hesitancy

Hesitancy about receipt of traditional childhood vaccines is relatively uncommon. As Figure 8 shows, roughly one in ten adults (11%) believes that vaccines given to children for diseases like measles, mumps, and rubella (MMR) cause autism. Approximately one in five (19%) incorrectly report that the approved vaccination schedule causes illness by overwhelming the child's immune system. About six in ten (63%) know this claim is false. Two-thirds of adults know that it is false to say that since babies are born with natural immunity, they don't need to be vaccinated against childhood illnesses until likely exposure to the disease occurs.

However, these aggregate-level findings obscure important sub-group differences. Table 7 shows that less highly educated adults are more likely to think that the recommended vaccination schedule overwhelms the child's immune system.

Table 7: Approved Vaccination Schedule Overwhelms Children's Immune Systems

	N	Definitely/ Probably False (%)	Definitely/ Probably True (%)	Not Sure (%)
Total	1621	63	19	17
Education				
High School or less	314	50	27	23
Some College	442	62	21	17
4-year College	378	74	11	15
More than college	487	81	8	10

Source: ASAPH Survey, Aug. 2022
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Disparities can also be seen across racial groups. Compared to non-Hispanic white adults, non-Hispanic Black adults were nearly twice as likely to believe that MMR vaccines cause autism (17% vs. 9%) and 9 percentage points more likely to believe that children don't need to be vaccinated against childhood illnesses until they are likely to be exposed. Hispanic adults are 8 percentage points more likely to believe that vaccine schedules cause illness by overwhelming the immune system (See Tables 8, 9, and 10).

Table 8: Vaccines given to children for diseases like measles, mumps, and rubella cause autism by Race

	N	Definitely/ Probably False (%)	Definitely/ Probably True (%)	Not Sure (%)
Total	1621	71	11	17
Race				
White (Non-Hispanic)	1067	75	9	15
Black (Non-Hispanic)	142	54	17	29
Hispanic	203	69	14	17
Asian/ Chinese/ Japanese	147	72	11	16

Table 9: Babies don't need to be vaccinated against childhood illnesses until they are likely to be exposed by Race

	N	Definitely/ Probably False (%)	Definitely/ Probably True (%)	Not Sure (%)
Total	1621	67	19	14
Race				
White (Non-Hispanic)	1067	70	18	12
Black (Non-Hispanic)	142	47	27	25
Hispanic	203	70	19	11
Asian/ Chinese/ Japanese	147	68	17	15

Table 10: The approved vaccination schedule often cause illness by overwhelming the child's immune system by Race

	N	Definitely/ Probably False (%)	Definitely/ Probably True (%)	Not Sure (%)
Total	1621	63	19	17
Race				
White (Non-Hispanic)	1067	68	18	14
Black (Non-Hispanic)	142	52	18	30
Hispanic	203	54	26	20
Asian/ Chinese/ Japanese	147	67	14	19

Source: ASAPH Survey, Aug. 2022
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As shown in Figure 9, only 48% believe that COVID-19 vaccination during pregnancy is safe and effective,[25] compared to 21% who do not, with nearly one in three (31%) being unsure. Whereas 42% do not believe that the harmful effects of the COVID-19 vaccine will only be apparent years from now, 38% believe this is true. This breakdown has been stable over the past year (see Figure 10).

[25] "COVD-19 Vaccines While Pregnant or Breastfeeding." CDC.gov, July 2022.

Figure 9

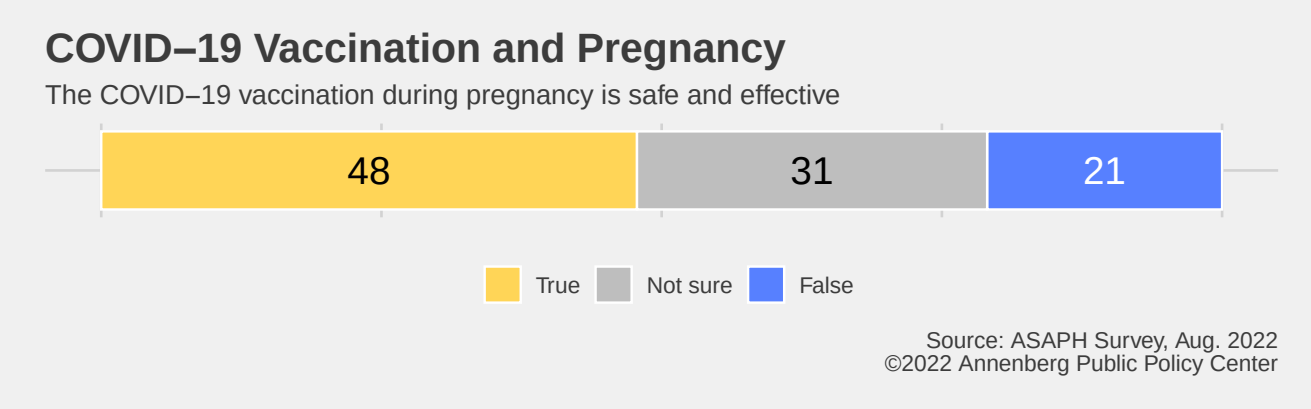
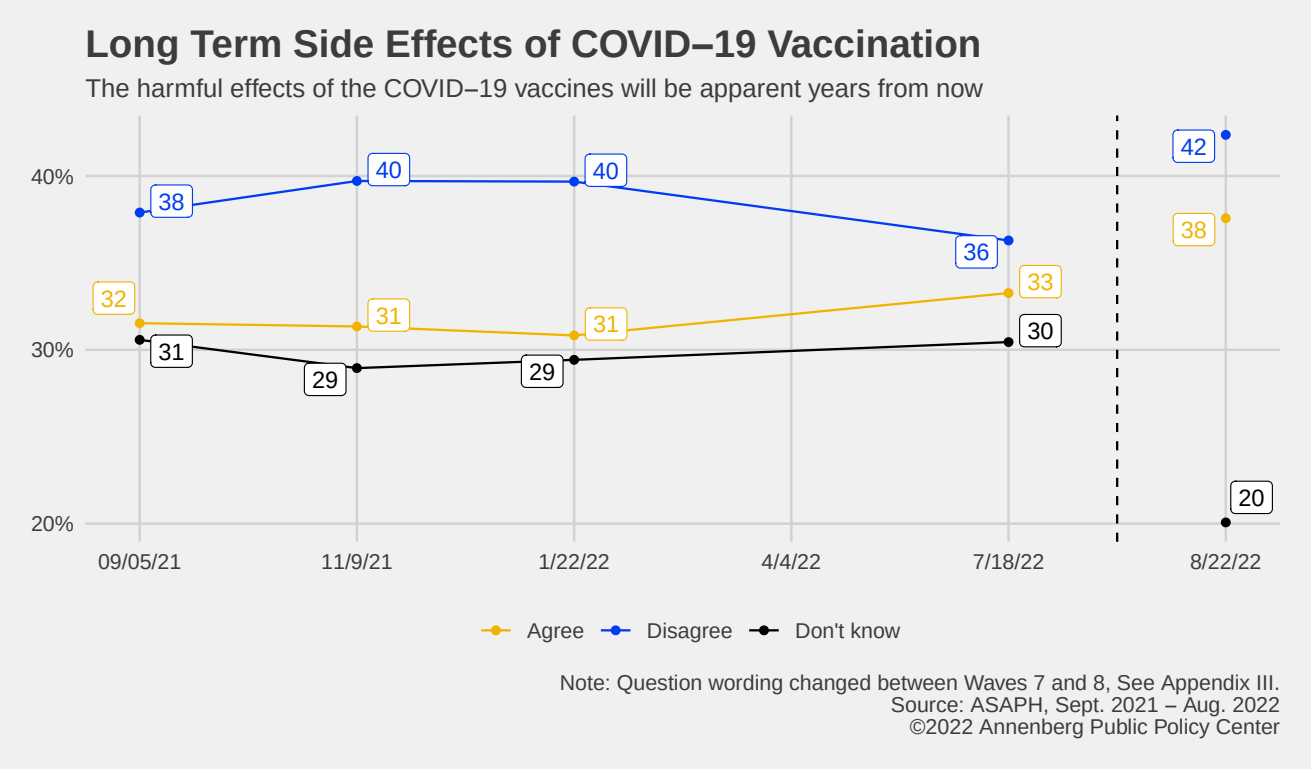


Figure 10



Substance Use and Pregnancy

The public recognizes that smoking while pregnant increases the chances one's baby will be born early (64% indicated true); increases the chances of birth defects (79% true); increases the chances of being born underweight (65% true); and increases the chances of sudden infant death syndrome (SIDS) (48%). Awareness of dangers is even more pronounced for vaping, with 86% reporting that an individual should stop vaping either before they become pregnant or as soon as they learn that they are pregnant. However, on both the risk that a smoker will deliver an underweight child (30%) or have a child who will die from sudden infant death syndrome (SIDS) (35%), considerable proportions report being unsure.

Understanding of the effects of alcohol consumption is high. Eighty-nine percent agree that alcohol should not be consumed while pregnant.

Plan B Emergency Contraception

Plan B is a form of emergency contraception involving taking two levonorgestrel pills by mouth after unprotected sex that prevents pregnancy by delaying the release of an egg from the ovary.[26] Only 45% of adults report being somewhat or very familiar with it. The same percentage know that Plan B will not end a pregnancy if a person is already pregnant (41%) as report being unsure (41%). While large numbers know that Plan B does not prevent a sexually transmitted disease (78% accurate, 7% inaccurate) and should not be used as a person's usual means of birth control (65% accurate, 8% inaccurate), less than a third (32%) correctly report that being overweight can affect the effectiveness of Plan B. The majority are unsure (57%).

[26] "FDA's Decision Regarding Plan B: Questions and Answers." FDA.gov, Dec. 2015.

Dietary Supplements and Maternal Health

Large numbers of Americans know that how well a person takes care of their health during their pregnancy affects their baby's health (95%), and that breastfeeding has benefits for both parents and their child (88%). Similarly, very few respondents (4%) report that consuming Pennyroyal oil or tea is a safe way to end a pregnancy.

However, significant uncertainty surrounds other important questions on maternal health. Many are unsure whether a person who is pregnant should take folic acid (35%), iron (32%), vitamin C (39%), or krill-based omega three (57%) supplements during pregnancy. The first two, folic acid and iron, are recommended.[27]

[27] "During Pregnancy." CDC.gov, Sept. 2022, and "Iron Fact Sheet for Professionals." NIH.gov, April 2022.

The After Effects of COVID-19

Symptoms of Long COVID

Question: Please indicate if you believe the statement below is true, false, or if you aren't sure. One person with long Covid may experience very different symptoms from another person who has long COVID. [**True**]

Table 11: Different Symptoms of long COVID by Education and Race

	N	Definitely/ Probably False	Definitely/ Probably True	Or are you not sure?
Total	1621	3	83	14
Education				
High School or Less	314	4	76	20
Some College	442	2	82	16
4-Year College	378	3	90	6
Advanced Degree	487	2	91	7
Race				
White (Non-Hispanic)	1067	2	88	10
Black (Non-Hispanic)	142	1	72	27
Hispanic	203	3	78	18
Asian/ Chinese/ Japanese	147	13	73	14

Source: ASAPH Survey, Aug. 2022
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More than eight in ten adults (83%) know that one person with long COVID may experience very different symptoms from another person who has long COVID. The proportions who know this claim is true were high across key demographic groups, with some differences by education and race. Less educated (76% high school or less compared with 90% of college/post-graduates), non-Hispanic Black (72% v. 88% non-Hispanic white), and Hispanic (78% vs. 88% non-Hispanic white) respondents were less likely to say this was true (See Table 11).

Risk of Long COVID

QUESTION: As far as you know, if you contract COVID-19, are YOU at a LOWER risk of long Covid if you've been vaccinated against COVID-19 [**CORRECT**], *a HIGHER risk of Long Covid if you've been vaccinated, about the same risk of Long Covid as you would have been had you not taken a COVID-19 vaccine, or are you not sure?*

Getting vaccinated might decrease one's chances of experiencing long Covid.[28] A majority of adults (51%) report that the risk is lower if vaccinated against COVID-19. A fifth of adults are not sure (20%) and a quarter believe that the risk is about the same for those who are vaccinated and not vaccinated. Uncertainty about the risk of long COVID and vaccination is highest among non-Hispanic Black respondents (30%). Differences in response also occur by education with less educated adults less likely to say the risk is lower. Additionally, women (47%) were significantly less likely than men (56%) to see that the risk is lower among the vaccinated (See Table 12).

[28] "COVID-19: Long COVID or post-COVID conditions." CDC.gov, Sept. 2022. and see Notarte, K. I., et al. 2022. "Impact of COVID-19 vaccination on the risk of developing long-COVID and on existing long-COVID symptoms: A systematic review)." *eClinicalMedicine* 53, 101624.

Table 12: Relative Risk of long COVID by Education, Gender, and Race

	N	A LOWER risk of long Covid if you've been vaccinated against COVID-19	A HIGHER risk of long Covid if you've been vaccinated against COVID-19	About the same risk of Long Covid	Or are you not sure?
Total	1621	51	3	25	20
Education					
High School or Less	314	44	2	29	25
Some College	442	48	5	27	20
4-Year College	378	46	3	25	16
Advanced Degree	487	66	2	16	16
Gender					
Male	784	56	2	24	18
Female	826	47	5	26	22
Race					
White (Non-Hispanic)	1067	53	2	27	18
Black (Non-Hispanic)	142	40	5	23	20
Hispanic	203	51	4	18	31
Asian/ Chinese/ Japanese	147	62	4	20	26

Source: ASAPH Survey, Aug. 2022
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Myocarditis, COVID-19, and COVID-19 Vaccines

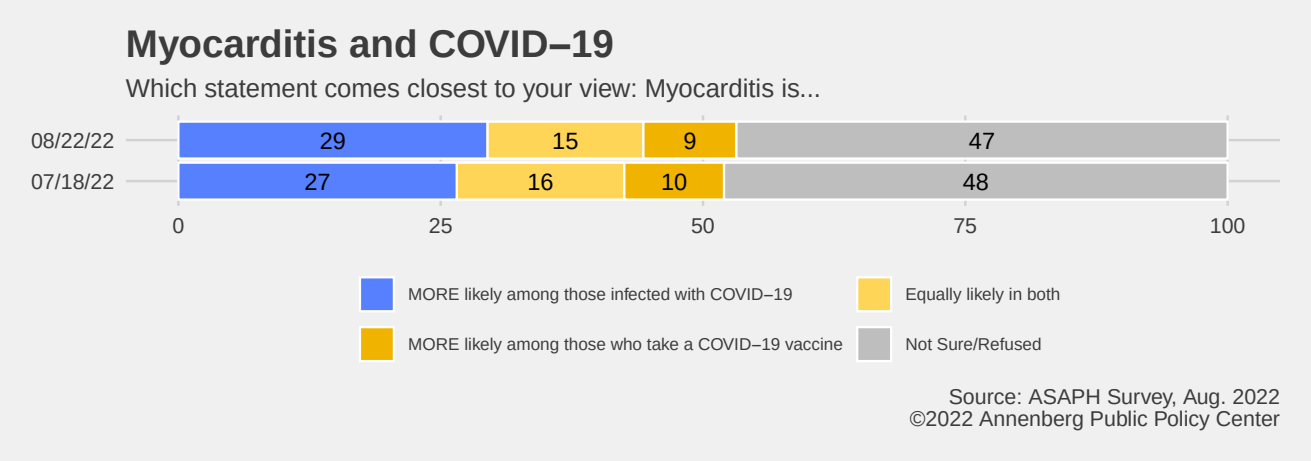
QUESTION: Myocarditis is an inflammation of the middle layer of the heart wall. Which statement comes closest to your view: Myocarditis is MORE likely among those infected with COVID-19 [**Accurate**], *Myocarditis is MORE likely among those who take a COVID-19 vaccine, Equally likely in both, Or are you not sure?*

Myocarditis is more likely after COVID-19 than after vaccination against COVID-19. There is "a rare risk for myocarditis and/or pericarditis following receipt of mRNA COVID-19 vaccines," [29] but there is a risk associated with infection with SARS-CoV-2 as well and the latter is greater than the former.[30] As shown in Figure 10, a plurality of adults (47%) are unsure whether myocarditis is more likely after COVID-19 or after COVID-19 vaccination. Among those who expressed an opinion, about three in ten (29%) know that that condition is more likely for those who get COVID-19. One in ten (9%) report that myocarditis is more likely to occur among those who take a COVID-19 vaccine. As shown in Figure 11, fifteen percent indicate that myocarditis is equally likely to occur in both scenarios.

[29] "Clinical considerations: Myocarditis and Pericarditis after Receipt of mRNA COVID-19 Vaccines Among Adolescents and Young Adults." CDC.gov, Sept. 2022.

[30] Kuehn, BM. 2022. "Cardiac Complications More Common After COVID-19 Than Vaccination." *JAMA* 327 (20): 1951 and Pantone, M., et al. 2022. "Risks of myocarditis, pericarditis, and cardiac arrhythmias associated with COVID-19 vaccination or SARS-CoV-2 infection." *Nature Medicine* 28 (2): 410–422.

Figure 11



Monkeypox Knowledge and Misinformation

Public knowledge surrounding the monkeypox virus has increased quickly over the course of this new public health crisis. These results are a credit to the efforts of public health institutions and the news media who provided the public with this critical information.

Basic Monkeypox Knowledge

While most individuals report having seen, read, or heard about monkeypox (80%), only 35% report being somewhat or very familiar with this disease. Despite this uncertainty, however, public understanding of monkeypox has improved noticeably over the past two waves of the ASAPH survey, as demonstrated in Figure 12. Between July and August of 2022, Americans became more likely to know that:

- a vaccine for monkeypox exists (34%→61%)
- monkeypox is spread through close contact with an infected person (69%→84%)
- monkeypox is less contagious than COVID-19 (36%→41%)
- COVID-19 vaccines don't increase the likelihood of getting monkeypox (67%→71%)
- COVID-19 doesn't increase the likelihood of getting monkeypox (33%→49%)
- men who have sex with men are at a higher risk of infection (33%→63%)

In August 2022, 77% knew that people with monkeypox should isolate at home until the rash is gone.

Monkeypox Misinformation

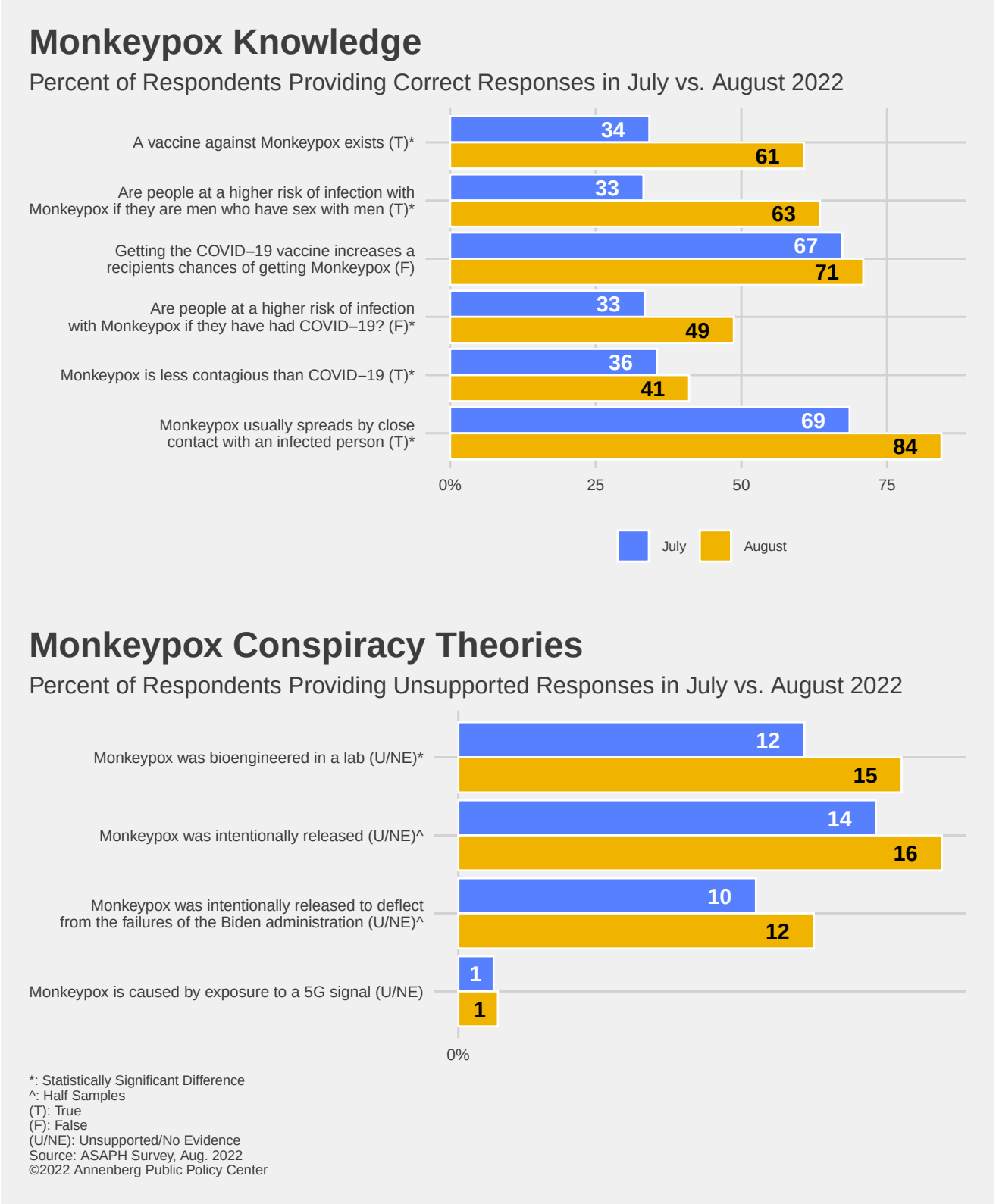
While information concerning the monkeypox public health crisis appears to be improving over this time period, acceptance of conspiracy theories about monkeypox remain largely unchanged. Between July and August of 2022, respondents became no more likely to believe that:

- monkeypox is caused by exposure to 5G signal (1%→1%)
- monkeypox was intentionally released (14%→16%)
- monkeypox was intentionally released to deflect attention from the Biden administration (10%→12%)[31]

[31] The intentional release questions were each asked of only half the sample, n=811 and n=810 respectively.

And while there was a statistically significant uptick in those believing that monkeypox was bioengineered in a lab (12%→15%) these numbers are low in absolute terms (see Figure 12).

Figure 12



*: Statistically Significant Difference
^: Half Samples
(T): True
(F): False
(U/NE): Unsupported/No Evidence
Source: ASAPH Survey, Aug. 2022
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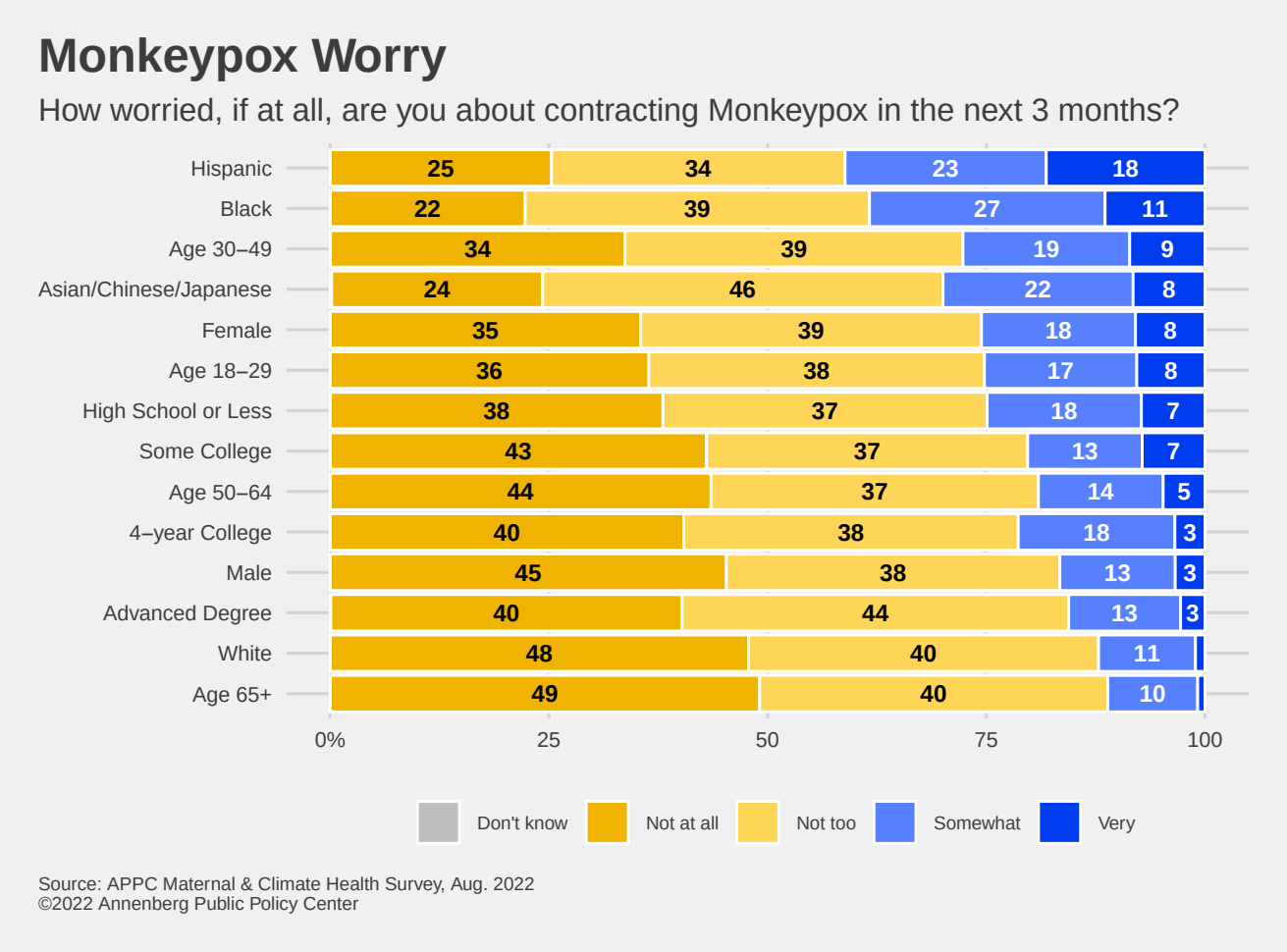
Levels of Public Worry

Increasing awareness surrounding monkeypox has not corresponded with an increase in worry about the disease. In the most recent wave of the survey, only 21% report being somewhat or very worried about contracting monkeypox in the next 3 months. Nearly three in ten respondents (27%) report that they would be not at all or not too likely to get vaccinated against monkeypox if they were exposed.

This finding may reflect how few individuals have a personal experience with the disease. Only 2% of adults report knowing someone who has contracted monkeypox.

Worry is not distributed evenly across the population (see Figure 13). Younger respondents, women, those with a high school education or less, and people of color (non-Hispanic Black, Hispanic, and Asian respondents) all report greater levels of worry. Respondents who are 18-29 years old are also much more likely to report knowing someone who has contracted monkeypox (7%), although the numbers here are still low in absolute terms. Older, college-educated, and male respondents report the highest likelihood to vaccinate if exposed (Figure 14).

Figure 13



Source: APPC Maternal & Climate Health Survey, Aug. 2022
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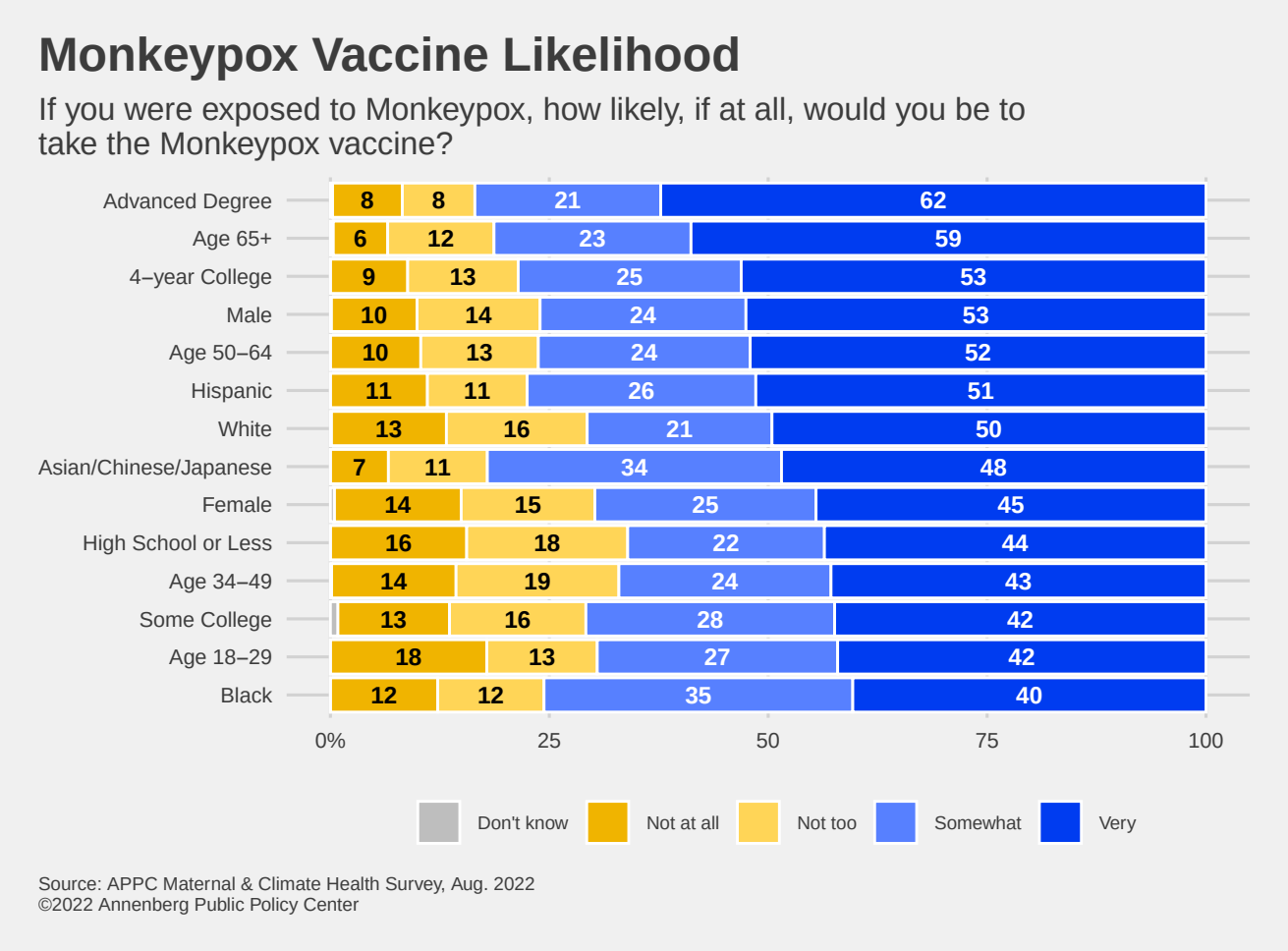
Figure 14



Source: APPC Maternal & Climate Health Survey, Aug. 2022
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Summary of Consequential Knowledge

Consequential science knowledge can protect the public from misinformation. The central contribution of the ASAPH panel is the ability to track the presence of science-consistent and -inconsistent knowledge among the public, highlight areas of uncertainty, and allow public health officials to track changes in these measures over time.

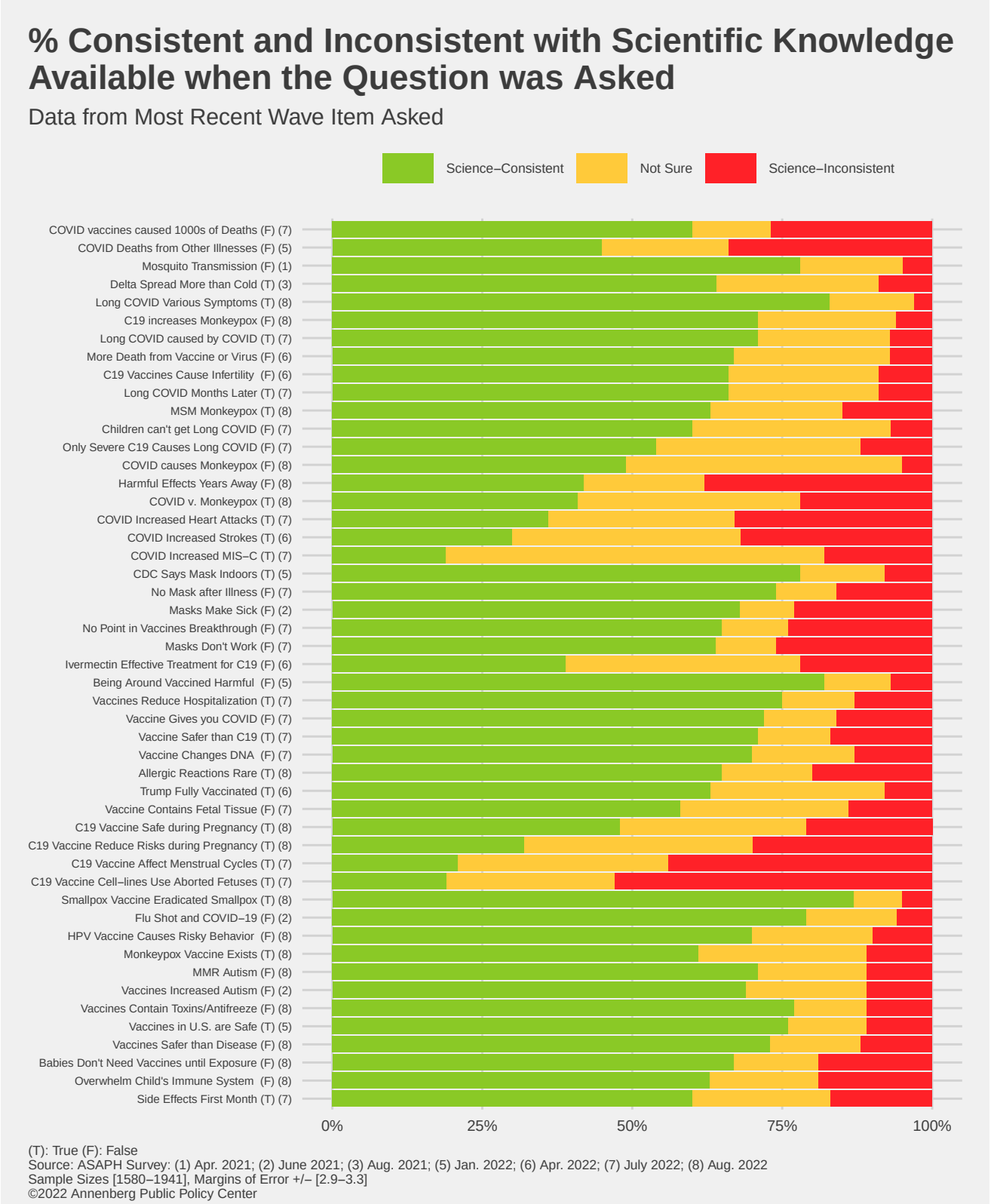
Figure 15 presents a summary of the public's understanding of 49 survey items concerning consequential public health knowledge. Descending the left side are the 49 abbreviated survey items (the full wordings for which can be found in the Appendix III) of our consequential science knowledge battery. These labels are annotated with a True or False indicator and the most recent wave in which that question was asked in the panel. For example, it is false (F) that "COVID vaccines have been responsible for thousands of deaths in the U.S." This was most recently asked in July 2022, wave (7).

Each bar presents the percentage of respondents who provided a science-consistent (in green), science-inconsistent (in red), or uncertain (in yellow) response to each of the 49 items. For example, 60% of respondents hold the science-consistent position that is definitely or probably false, that "COVID vaccines have been responsible for thousands of deaths in the U.S." Only 27% believe it to be definitely or probably true and 14% report being unsure.

The specific values for each question can be found in the Appendix II and are discussed throughout the report. This figure, however, summarizes larger trends in consequential knowledge. The large amount of green to the left in the figure below stands as a public health success. Across nearly all items, solid majorities hold science-consistent positions on issue consequential for public health. The red along the right-hand side highlights science-inconsistent beliefs among the public. While for nearly all items, science-consistent knowledge exceeds science-inconsistent beliefs, it is worrying that the largest proportions of science-inconsistent beliefs can be found among questions concerning COVID-19 vaccines' safety and efficacy. The yellow demonstrates the variation in uncertainty across these items. These respondents would be the most susceptible to additional public health messaging.

Data such as these not only register the impact of messaging by the public health community but also identify gaps in consequential knowledge in the public at large as well as in demographic subgroups.

Figure 15



(T): True (F): False
Source: ASAPH Survey: (1) Apr. 2021; (2) June 2021; (3) Aug. 2021; (5) Jan. 2022; (6) Apr. 2022; (7) July 2022; (8) Aug. 2022
Sample Sizes [1580–1941], Margins of Error +/– [2.9–3.3]
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Appendix I: Methodology

The most recent data in this report are drawn from Wave 8 of the study, conducted from August 16-22, 2022, among 1621 U.S. adults comprising 1,574 from the web and 47 by telephone. A total of 1,590 surveys were conducted in English and 31 in Spanish. 1,907 panelists were invited to complete wave 8 of the survey, so the response rate was 83.0%. The margin of sampling error for total respondents is +/-3.3 percentage points at the 95% confidence interval. The design effect (DEFF) is 1.87. See Table A for waves 1-7.

Table A - Summary of ASAPH Survey Waves

Wave	Survey	N	MOE	Deff	Fielded	Closed
A-1	ASK 1	1941	2.9	1.76	3/30/21	4/19/21
B-2	ASK 2	1719	3.2	1.83	6/9/21	6/22/21
C-3	ASK 3	1669	3.2	1.83	8/16/21	9/5/21
D-4	ASK 4	1672	3.3	1.86	11/3/21	11/9/21
E-5	ASK 5	1656	3.3	1.86	1/11/22	1/17/22
F-6	ASK 6	1638	3.3	1.87	3/29/22	4/4/22
G-7	ASK 7	1580	3.3	1.82	7/12/22	7/18/22
H-8	MH/CH 1	1621	3.3	1.87	8/16/22	8/23/22

Weighting

Data were weighted by SSRS to represent the adult (18+) population. The data were weighted by first applying a base weight then balancing the demographic profile of the sample to target population parameters.

The base weight for the SSRS Opinion Panel was the final weight from the first wave of the survey (April 2021). The base weights were then standardized and trimmed at the 2nd and 98th percentiles to prevent individual interviews from having too much influence. With the base weight applied, the probability panel was weighted to balance the demographic profile of the sample to the target population parameters.

To handle missing data among some of the demographic variables SSRS employs a technique called hot decking. Hot deck imputation replaces the missing values of a respondent randomly with another similar respondent without missing data. These are further determined by variables predictive of non-response that are present in the entire file.[32]

[32] This is conducted using an SPSS macro detailed in Myers, Teresa. 2011. "Goodbye, Listwise Deletion: Presenting Hot Deck Imputation as an Easy and Effective Tool for Handing Missing Data." *Communication Methods and Measures* 5 (4): 297–310.

Weighting was accomplished using SPSSINC RAKE, an SPSS extension module that simultaneously balances the distributions of all variables using the GENLOG procedure.

Data were weighted to distributions of: sex by age, sex by education, age by education, race/ethnicity (for Hispanic include US born and foreign born), census region, civic engagement, frequency of internet usage, population density, religion, voter registration, and party identification.

The main demographic benchmarks were obtained from the 2021 Current Population Survey (CPS). The civic engagement benchmark was derived from September 2017 CPS Volunteering and Civic Life Supplement data. The population density came from Census Planning Database 2020. The internet usage benchmark was obtained from the 2019 American Community Survey (ACS) data. Voter registration parameters come from the 2021 Aristotle RV database. Both the religion and party identification benchmarks come from Pew's 2021 National Public Opinion Reference Survey (NPORS).

These weights reflect current recommendations and best practices from SSRS. In waves 1 through 7, weights did not adjust for religion, voter registration, or party identification. Prior benchmarks for race and internet usage were less granular. Both SSRS and APPC independently analyzed the revised practices and found the differences to be small and statistically insignificant for all our questions in Waves 7 and 8.

Weighting Benchmarks

Variable	Waves 1-7	Wave 8
Sex by Age		
Male 18-24	5.70%	5.70%
Male 25-34	9.00%	9.00%
Male 35-44	8.20%	8.20%
Male 45-54	7.70%	7.70%
Male 55-64	7.90%	7.90%
Male 65+	9.90%	9.90%
Female 18-24	5.60%	5.60%
Female 25-34	8.90%	8.90%
Female 35-44	8.40%	8.40%
Female 45-54	8.00%	8.00%
Female 55-64	8.60%	8.60%
Female 65+	12.10%	12.10%
Sex by Education		
Male HS grad or less	19.50%	19.50%
Male Some college	12.70%	12.70%
Male College grad +	16.30%	16.30%
Female HS grad or less	18.40%	18.40%
Female Some college	14.40%	14.40%
Female College grad +	18.80%	18.80%
Registered Voter (18+)		
Yes	NOT USED	77.30%
Not registered no response	NOT USED	22.70%
Party ID (from Panel)		
Rep	NOT USED	27.10%
Dem	NOT USED	31.60%
Ind	NOT USED	25.40%
Other	NOT USED	15.90%
Total Ind Other	NOT USED	41.30%
Religion		
Affiliated	NOT USED	69.00%
Not affiliated	NOT USED	31.00%

Age by Education		
18-34 HS grad or less	11.20%	11.20%
18-34 Some college	9.30%	9.30%
18-34 College grad +	8.80%	8.80%
35-54 HS grad or less	10.90%	10.90%
35-54 Some college	7.90%	7.90%
35-54 College grad +	13.40%	13.40%
55+ HS grad or less	15.80%	15.80%
55+ Some college	9.90%	9.90%
55+ College grad +	12.80%	12.80%
Race/Ethnicity		
White non-Hisp	62.50%	62.50%
Black non-Hisp	12.00%	12.00%
Total Hispanic	16.90%	8.40%
Hispanic US born	8.40%	8.40%
Hispanic foreign born	8.50%	8.50%
Asian non-Hisp	NOT USED	6.10%
Other non-Hisp	8.60%	2.50%
Census Region		
Northeast	17.20%	17.20%
Midwest	20.60%	20.60%
South	38.30%	38.30%
West	23.90%	23.90%
Civic Engagement		
Not engaged	65.50%	65.50%
Civically engaged	34.50%	34.50%
Population Density		
1 Lowest 20%	20.00%	20.00%
2	20.00%	20.00%
3	20.00%	20.00%
4	20.00%	20.00%
5 Highest 20%	20.00%	20.00%
Internet User		
Yes	91.60%	NOT USED
No	8.40%	NOT USED

Internet Freq including non-internet users		
Total Almost constantly Several x day	NOT USED	82.90%
Total All others	NOT USED	17.10%

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Appendix II - ASAPH Wave 8 Summary

Topline Results

All results are presented in percentages. Some rows may not sum to 100 due to rounding. All values X.50 and greater are rounded to the nearest whole number. Superscript letters indicate statistically significant differences. For example, 28[bd] signifies that 28 is statistically different from values in waves 2-B and 4-D, as demonstrated in the topline for questions A1.

1 Confidence in Public Health Institutions

Q1.

Q1. In general, how confident, if at all, are you that the following are providing the public with trustworthy information about means of preventing and treating disease? – The U.S. Centers for Disease Control and Prevention (CDC)

Wave	N	NET Unconfident	Not at all confident	Not too confident	NET Confident	Somewhat confident	Very confident	Don't know	Refused
(H) 08/22/22	1621	25	9	16	75	41	34	0	0

A1.

A1. In general, how confident, if at all, are you that the following are providing the public with trustworthy information about means of preventing and treating COVID–19? / The U.S. Centers for Disease Control and Prevention CDC

Wave	N	NET Unconfident	Not at all confident	Not too confident	NET Confident	Somewhat confident	Very confident	Don't know	Refused
(G) 07/18/22	1580	25	8	17	75	43[c]	32[acd]	0	0
(F) 04/04/22	1638	27	9	18	73	38	35	0	0
(E) 01/22/22	1656	28[bd]	9	19	72[bd]	40	32[acd]	0	0
(D) 11/09/21	1672	23[e]	7	16	77[e]	39	38[eg]	0	0
(C) 09/05/21	1669	25	7	17	75	38[g]	37[eg]	0	0
(B) 06/22/21	1719	24[e]	7	16	76[e]	41	35	0	0
(A) 04/19/21	1941	25	7	18	75	39	36[eg]	0	0

A1B.

A1B. In general, do you trust what / The U.S. Centers for Disease Control and Prevention (CDC) has said about the coronavirus or not? If you are not aware of what they have said and have no opinion at this time, please just say so.

Wave	N	Yes, trust	No, do not trust	Not aware/No opinion	Not sure	Refused
(F) 04/04/22	818	60	26	13	0	0

A1C.

A1C. How much do you trust the following people and organizations to do the right thing to best handle the current coronavirus (COVID–19) outbreak? / The U.S. Centers for Disease Control and Prevention (CDC)

Wave	N	NET Not	Not at all	Not much	NET Some	Some	A lot	Don't know	Refused
(F) 04/04/22	820	27	9	18	73	41	32	0	0

Q2.

Q2. In general, how confident, if at all, are you that the following are providing the public with trustworthy information about means of preventing and treating disease? – The Food and Drug Administration (FDA)

Wave	N	NET Unconfident	Not at all confident	Not too confident	NET Confident	Somewhat confident	Very confident	Don't know	Refused
(H) 08/22/22	1621	24	6	18	76	47	29	0	0

A2.

A2. In general, how confident, if at all, are you that the following are providing the public with trustworthy information about means of preventing and treating COVID–19? / The Food and Drug Administration FDA

Wave	N	NET Unconfident	Not at all confident	Not too confident	NET Confident	Somewhat confident	Very confident	Don't know	Refused
(G) 07/18/22	1580	26	7	19	74	46	28[d]	0	0
(F) 04/04/22	1638	27	7	20	73	43[b]	30	0	0
(E) 01/22/22	1656	26	7	18	74	46	28	0	0
(D) 11/09/21	1672	24	6	19	76	43[b]	32[abg]	0	0
(C) 09/05/21	1669	24	6	18	76	45	31	0	0
(B) 06/22/21	1719	23	5	18	77	49[df]	28[d]	0	0
(A) 04/19/21	1941	25	6	19	75	48	28[d]	0	0

A2B.

A2B. In general, do you trust what / The Food and Drug Administration (FDA) has said about the coronavirus or not? If you are not aware of what they have said and have no opinion at this time, please just say so.

Wave	N	Yes, trust	No, do not trust	Not aware/No opinion	Not sure	Refused
(F) 04/04/22	818	54	23	23	0	0

A2C.

A2C. How much do you trust the following people and organizations to do the right thing to best handle the current coronavirus (COVID–19) outbreak? / The Food and Drug Administration (FDA)

Wave	N	NET Not	Not at all	Not much	NET Some	Some	A lot	Don't know	Refused
(F) 04/04/22	820	27	8	19	73	45	28	0	0

Q3.

Q3. In general, how confident, if at all, are you that the following are providing the public with trustworthy information about means of preventing and treating disease? – The National Institutes of Health (NIH)

Wave	N	NET Unconfident	Not at all confident	Not too confident	NET Confident	Somewhat confident	Very confident	Don't know	Refused
(H) 08/22/22	1621	22	7	15	78	45	33	0	0

A3.

A3. In general, how confident, if at all, are you that the following are providing the public with trustworthy information about means of preventing and treating COVID–19? / Dr. Anthony Fauci of the National Institutes of Health NIH

Wave	N	NET Unconfident	Not at all confident	Not too confident	NET Confident	Somewhat confident	Very confident	Don't know	Refused
(G) 07/18/22	1580	37[abc]	16[a]	21[abcd]	63[abc]	32	31[abcd]	0	0
(F) 04/04/22	1638	36[a]	16[a]	20	64[a]	30	34[a]	0	0
(E) 01/22/22	1656	35[a]	17[a]	18	65[a]	31	34[a]	0	0
(D) 11/09/21	1672	33	16[a]	17[g]	67	31	36[ag]	0	0
(C) 09/05/21	1669	32[g]	15	17[g]	68[g]	30	38[g]	0	0
(B) 06/22/21	1719	32[g]	15	17[g]	68[g]	30	38[g]	0	0
(A) 04/19/21	1941	29[efg]	12[defg]	17[g]	71[efg]	29	41[defg]	0	0

Q4.

Q4. In general, how confident, if at all, are you that the following are providing the public with trustworthy information about means of preventing and treating disease? – The U.S. Surgeon General

Wave	N	NET Unconfident	Not at all confident	Not too confident	NET Confident	Somewhat confident	Very confident	Don't know	Refused
(H) 08/22/22	1621	24	5	18	76	45	31	0	0

Q5.

Q5. In general, how confident, if at all, are you that the following are providing the public with trustworthy information about means of preventing and treating disease? – Your doctor, nurse or primary health care provider

Wave	N	NET Unconfident	Not at all confident	Not too confident	NET Confident	Somewhat confident	Very confident	I have no primary health care provider	Don't know	Refused
(H) 08/22/22	1621	6	2	5	88	39	49	5	0	0

A4.

A4. In general, how confident, if at all, are you that your doctor, nurse, or other primary health care provider is providing you with trustworthy information about means of preventing and treating COVID–19?

Wave	N	NET Unconfident	Not at all confident	Not too confident	NET Confident	Somewhat confident	Very confident	I have no primary health care provider	Don't know	Refused
(G) 07/18/22	1580	11[c]	2	9[c]	84	36	47	6	0	0
(F) 04/04/22	1638	11[c]	3	8[c]	84	36	47	6	0	0
(E) 01/22/22	1656	12[cd]	4[bd]	8[c]	82[c]	37	45[c]	6	0	0
(D) 11/09/21	1672	8[e]	1[e]	7	85	35	50	7	0	0
(C) 09/05/21	1669	8[efg]	3	5[efg]	87[be]	37	50[e]	5	0	0
(B) 06/22/21	1719	10	2[e]	7	83[c]	35	48	7	0	0

2 Beliefs in Vaccine Safety and Efficacy

Q6.

Q6. As far as you know, for each of the following vaccines, please indicate how safe, if at all, you think getting it is. – The human papillomavirus (HPV) vaccine

Wave	N	NET Unsafe	Very unsafe	Somewhat unsafe	NET Safe	Somewhat safe	Very safe	Or are you not sure?	Refused
(H) 08/22/22	1621	9	3	6	69	27	43	21	0

Q7.

Q7. As far as you know, for each of the following vaccines, please indicate how safe, if at all, you think getting it is. – The Measles, Mumps, and Rubella (MMR) vaccine

Wave	N	NET Unsafe	Very unsafe	Somewhat unsafe	NET Safe	Somewhat safe	Very safe	Or are you not sure?	Refused
(H) 08/22/22	1621	6	2	4	88	25	63	6	0

Q8.

Q8. As far as you know, for each of the following vaccines, please indicate how safe, if at all, you think getting it is. – The flu vaccine

Wave	N	NET Unsafe	Very unsafe	Somewhat unsafe	NET Safe	Somewhat safe	Very safe	Or are you not sure?	Refused
(H) 08/22/22	1621	10	3	7	85	29	56	5	0

Q9.

Q9. As far as you know, for each of the following vaccines, please indicate how safe, if at all, you think getting it is. – The COVID–19 vaccine

Wave	N	NET Unsafe	Very unsafe	Somewhat unsafe	NET Safe	Somewhat safe	Very safe	Or are you not sure?	Refused
(H) 08/22/22	1621	18	10	8	73	27	46	9	0

Q10.

Q10. As far as you know, for each of the following vaccines, please indicate how safe, if at all, you think getting it is. – The Shingles vaccine

Wave	N	NET Unsafe	Very unsafe	Somewhat unsafe	NET Safe	Somewhat safe	Very safe	Or are you not sure?	Refused
(H) 08/22/22	1621	7	2	5	79	28	51	14	0

Q11.

Q11. As far as you know, for each of the following vaccines, please indicate how safe, if at all, you think getting it is. – The pneumonia vaccine

Wave	N	NET Unsafe	Very unsafe	Somewhat unsafe	NET Safe	Somewhat safe	Very safe	Or are you not sure?	Refused
(H) 08/22/22	1621	7	2	5	80	29	51	13	0

Q12.

Q12. As far as you know, for each of the following vaccines, please indicate how effective, if at all, you think it is in preventing symptomatic disease. – The human papillomavirus (HPV) vaccine

Wave	N	NET Ineffective	Very ineffective	Somewhat ineffective	NET Effective	Somewhat effective	Very effective	Or are you not sure?	Refused
(H) 08/22/22	1621	5	2	3	66	27	39	29	0

Q13.

Q13. As far as you know, for each of the following vaccines, please indicate how effective, if at all, you think it is in preventing symptomatic disease. – The Measles, Mumps, and Rubella (MMR) vaccine

Wave	N	NET Ineffective	Very ineffective	Somewhat ineffective	NET Effective	Somewhat effective	Very effective	Or are you not sure?	Refused
(H) 08/22/22	1621	4	2	3	87	20	67	9	0

Q14.

Q14. As far as you know, for each of the following vaccines, please indicate how effective, if at all, you think it is in preventing symptomatic disease. – The flu vaccine

Wave	N	NET Ineffective	Very ineffective	Somewhat ineffective	NET Effective	Somewhat effective	Very effective	Or are you not sure?	Refused
(H) 08/22/22	1621	13	3	10	81	45	37	6	0

Q15.

Q15. As far as you know, for each of the following vaccines, please indicate how effective, if at all, you think it is in preventing symptomatic disease. – The COVID–19 vaccine

Wave	N	NET Ineffective	Very ineffective	Somewhat ineffective	NET Effective	Somewhat effective	Very effective	Or are you not sure?	Refused
(H) 08/22/22	1621	24	13	11	69	39	30	7	0

Q16.

Q16. As far as you know, for each of the following vaccines, please indicate how effective, if at all, you think it is in preventing symptomatic disease. – The Shingles vaccine

Wave	N	NET Ineffective	Very ineffective	Somewhat ineffective	NET Effective	Somewhat effective	Very effective	Or are you not sure?	Refused
(H) 08/22/22	1621	5	1	4	74	30	44	21	0

Q17.

Q17. As far as you know, for each of the following vaccines, please indicate how effective, if at all, you think it is in preventing symptomatic disease. – The pneumonia vaccine

Wave	N	NET Ineffective	Very ineffective	Somewhat ineffective	NET Effective	Somewhat effective	Very effective	Or are you not sure?	Refused
(H) 08/22/22	1621	6	1	4	74	31	43	20	0

Q18.

Q18. The vaccines given to me during my childhood protected me from diseases such as Polio and Tetanus.

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	4	1	2	90	26	65	6	0

Q19.

Q19. Vaccines in general are full of toxins and harmful ingredients like "antifreeze". [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Not sure	Refused
(H) 08/22/22	1621	77	55	21	11[a]	9[a]	2	12[a]	0
(B) 06/22/21	1719	77	54	23	10	7	2	13	0
(A) 04/19/21	1941	76	56	20	8[h]	5[h]	3	16[h]	0

See: 'What is in a Vaccine.' 2022. CDC.gov, Sept. 2022. https://www.cdc.gov/vaccines/vac–gen/additives.htm

Q20.

Q20. Vaccines given to children for diseases like measles, mumps, and rubella cause autism. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Not sure	Refused
(H) 08/22/22	1621	71	44	27	11	9	2	17	0
(B) 06/22/21	1719	74	47	27	9	7	2	18	0

See: 'Autism and Vaccines.' CDC.gov, Sept. 2022. https://www.cdc.gov/vaccinesafety/concerns/autism.html

Q21.

Q21. Getting a vaccine approved for use in the United States is safer than getting the disease. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	12	4	8	73	29	45	15	0

See: 'Overview, History, and How the Safety Process Works.' CDC.gov, Sept. 2022. https://www.cdc.gov/vaccinesafety/ensuringsafety/history/index.html

Q22.

Q22. The human papillomavirus (HPV) vaccine leads teens to engage in risky sexual behavior. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	70	45	24	10	9	1	20	0

See: Smith LM, Kaufman JS, Strumpf EC, Lévesque LE. Effect of human papillomavirus (HPV) vaccination on clinical indicators of sexual behaviour among adolescent girls: the Ontario Grade 8 HPV Vaccine Cohort Study. CMAJ. 2015 Feb 3;187(2):E74–E81. doi: 10.1503/cmaj.140900

Q23.

Q23. Use of vaccination against Smallpox is a major reason that people no longer die from Smallpox. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Not sure	Refused
(H) 08/22/22	1621	5	1	4	87	29	59	8	0
(C) 09/05/21	1669	5	2	3	85	28	57	10	0

See: 'Overview, History, and How the Safety Process Works.' CDC.gov, Sept. 2022. https://www.cdc.gov/vaccinesafety/ensuringsafety/history/index.html

Q24.

Q24. In the US, allergic reactions to authorized vaccines against COVID–19 are very rare. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Not sure	Refused
(H) 08/22/22	1621	20	9[cde]	11	65	34	31[a]	15[a]	0
(G) 07/18/22	1580	19	7	12	63	36	27[de]	18	0
(E) 01/22/22	1656	18	6[h]	12	66[a]	33	33[ag]	16[a]	0
(D) 11/09/21	1672	20	6[h]	14	64	32	32[ag]	16	0
(C) 09/05/21	1669	18	6[h]	11	66[a]	36	30[a]	16[a]	0
(B) 06/22/21	1719	21	7	14	63	32	30[a]	16	0
(A) 04/19/21	1941	20	7	12	61[ce]	35	26[bcdeh]	19[ceh]	0

Wording Change: Waves A–G did not include "In the US," in the prompt.

See: 'Overview, History, and How the Safety Process Works.' CDC.gov, Sept. 2022. https://www.cdc.gov/vaccinesafety/ensuringsafety/history/index.html

Q25.

Q25. Health officials at the U.S. Centers for Disease Control and Prevention (CDC) exaggerate the danger posed by diseases in order to get people to vaccinate. [UNSPPORTED/NO EVIDENCE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	56	31	25	35	25	10	9	0

Q26.

Q26. Harmful effects of the COVID–19 vaccines will only be apparent years from now. [UNSPPORTED/NO EVIDENCE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	42	16	26	38	29	8	20	0

Waves A–G used Strongly Agree – Strongly Disagree scale

D68.

D68. Please indicate how much you agree or disagree with each of the following statements. Harmful effects of the COVID–19 vaccines will be apparent years from now.

Wave	N	NET Disagree	Strongly disagree	Somewhat disagree	NET Agree	Somewhat agree	Strongly agree	Neither agree nor disagree	Don't know	Refused
(G) 07/18/22	1580	36	23	13	33	19	14	30	0	0
(E) 01/22/22	1656	40	24	16	31	18	13	29	1	0
(D) 11/09/21	1672	40	26	13	31	19	12	28	1	0
(C) 09/05/21	1669	38	23	15	32	18	13	30	1	0

Q27.

Q27. Vaccines are not authorized for use in the United States until after a rigorous, independent review process certifies that they are safe and effective.[ATTITUDE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	15	5	9	73	30	43	12	0

See: 'Overview, History, and How the Safety Process Works.' CDC.gov, Sept. 2022. https://www.cdc.gov/vaccinesafety/ensuringsafety/history/index.html

Q28.

Q28. COVID–19 vaccination during pregnancy is safe and effective. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	21	9	12	48	27	21	31	0

See: "COVID–19 Vaccines While Pregnant or Breastfeeding." CDC.gov, Sept. 2022. https://www.cdc.gov/coronavirus/2019–ncov/vaccines/recommendations/pregnancy.html

Q29.

Q29. Getting a COVID–19 vaccine can reduce the risk of complications that affect a pregnancy. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	30	14	16	32	20	12	38	0

See: "COVID–19 Vaccines While Pregnant or Breastfeeding." CDC.gov, Sept. 2022. https://www.cdc.gov/coronavirus/2019–ncov/vaccines/recommendations/pregnancy.html

Q30.

Q30. Please indicate whether you think getting the flu vaccine: [TRUE]

Wave	N	Increases your chances of getting the flu	Decreases your chances of getting the flu	Has no effect on your chances of getting the flu	Or are you not sure?	Refused
(H) 08/22/22	1621	8	66	15	11	0

See: "CDC Seasonal Flue Vaccine Effectiveness Studies." CDC.gov, Sept. 2022. https://www.cdc.gov/flu/vaccines–work/effectiveness–studies.htm

NEWW56/Q31.

NEWW56/Q31. The Vaccine Adverse Events Reporting System, also known as VAERS, is a system run by the U.S. Department of Health and Human Services that detects possible safety problems in US–licensed vaccines. ...have the deaths reported in the VAERS been confirmed to have been caused by the COVID–19 vaccination, or have the deaths reported in the VAERS not been confirmed to have been caused by the COVID–19 vaccination or aren't you sure? [CORRECT: NOT VERIFIED]

Wave	N	Confirmed to have been caused by the COVID–19 vaccination	Not confirmed to have been caused by the COVID–19 vaccination	Not sure	Refused
(H) 08/22/22	1621	10[e]	27[ef]	63[ef]	0
(F) 04/04/22	1638	8	22[h]	70[h]	0
(E) 01/22/22	1656	7[h]	19[h]	74[h]	0

See: "About VAERS." VAERS.HHS.gov, Sept. 2022. https://vaers.hhs.gov/about.html

POLIO1.

POLIO1. Have you been vaccinated against polio, or not, or are you not sure?

Wave	N	Yes	No	Or are you not sure?	Refused
(H) 08/22/22	1621	72	7	20	0

3 Maternal Health Battery

Q20.

Q20. Vaccines given to children for diseases like measles, mumps, and rubella cause autism. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Not sure	Refused
(H) 08/22/22	1621	71	44	27	11	9	2	17	0
(B) 06/22/21	1719	74	47	27	9	7	2	18	0

See: 'Autism and Vaccines.' CDC.gov, Sept. 2022. https://www.cdc.gov/vaccinesafety/concerns/autism.html

Q26.

Q26. Harmful effects of the COVID–19 vaccines will only be apparent years from now. [UNSPPORTED/NO EVIDENCE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	42	16	26	38	29	8	20	0

Waves A–G used Strongly Agree – Strongly Disagree scale

D68.

D68. Please indicate how much you agree or disagree with each of the following statements. Harmful effects of the COVID–19 vaccines will be apparent years from now.

Wave	N	NET Disagree	Strongly disagree	Somewhat disagree	NET Agree	Somewhat agree	Strongly agree	Neither agree nor disagree	Don't know	Refused
(G) 07/18/22	1580	36	23	13	33	19	14	30	0	0
(E) 01/22/22	1656	40	24	16	31	18	13	29	1	0
(D) 11/09/21	1672	40	26	13	31	19	12	28	1	0
(C) 09/05/21	1669	38	23	15	32	18	13	30	1	0

Q28.

Q28. COVID–19 vaccination during pregnancy is safe and effective. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	21	9	12	48	27	21	31	0

See: "COVID–19 Vaccines While Pregnant or Breastfeeding." CDC.gov, Sept. 2022. https://www.cdc.gov/coronavirus/2019–ncov/vaccines/recommendations/pregnancy.html

Q29.

Q29. Getting a COVID–19 vaccine can reduce the risk of complications that affect a pregnancy. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	30	14	16	32	20	12	38	0

See: "COVID–19 Vaccines While Pregnant or Breastfeeding." CDC.gov, Sept. 2022. https://www.cdc.gov/coronavirus/2019–ncov/vaccines/recommendations/pregnancy.html

Q32.

Q32. As far as you know, is the rate of infant mortality higher for: [CORRECT: HOME BIRTHS]

Wave	N	Home births	Hospital births	There is no "real" difference between the two	Or are you not sure?	Refused
(H) 08/22/22	1621	32	7	19	42	0

See: Grünebaum A, McCullough LB, Orosz B, Chervenak FA. 2020. "Neonatal mortality in the United States is related to location of birth (hospital versus home) rather than the type of birth attendant." Am J Obstet Gynecol 223(2). 10.1016/j.ajog.2020.01.045

Q33.

Q33. Untreated high blood pressure increases the likelihood that someone who is pregnant will have a stroke. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	5	1	4	72	49	23	23	0

See: Ford, Nicole. "Hypertensive Disorders in Pregnancy and Mortality at Delivery Hospitalization –– United States, 2017––2019." Morbidity and Mortality Weekly Report 71, no. 17 (2022): 585––591, doi:10.15585/mmwr.mm7117a1

Q34.

Q34. The imaging method known as ultrasound uses x rays to produce its images. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	54	42	12	23	14	9	23	0

See: "Ultrasound Imagining." FDA.gov, Sept. 2022.

Q35.

Q35. The breastfeeding parent and breastfed baby both benefit from breastfeeding. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	2	0	2	88	27	61	10	0

See: "About Breastfeeding." CDC.gov, Sept. 2022. https://www.cdc.gov/breastfeeding/about–breastfeeding/index.html

Q36.

Q36. The glucose tolerance drink that is used to determine whether someone has diabetes should NOT be used to detect diabetes during pregnancy. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	23	10	13	19	16	4	58	0

See: "Gestational Diabetes." CDC.gov, Sept. 2022. https://www.cdc.gov/diabetes/basics/gestational.html

Q37.

Q37. There is no safe amount of alcohol while pregnant. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	17	5	12	77	26	51	6	0

See: "Substance Use During Pregnancy." CDC.gov, Sept. 2022. https://www.cdc.gov/reproductivehealth/maternalinfanthealth/substance–abuse/ substance–abuse–during–pregnancy.htm

Q38.

Q38. How well a person takes care of their health before getting pregnant affects the health of their baby. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	6	1	4	89	37	51	6	0

See: "Before Pregnancy." CDC.gov, Sept. 2022. https://www.cdc.gov/preconception/index.html

Q39.

Q39. How well a person takes care of their health during their pregnancy affects their baby's health. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	2	1	1	95	17	77	3	0

See: "During Pregnancy." CDC.gov, Sept. 2022. https://www.cdc.gov/pregnancy/during.html

Q40.

Q40. Childhood vaccines that are given together as part of the approved vaccination schedule often cause illness by overwhelming the child's immune system. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	63	35	28	19	15	4	17	0

See: "Multiple Vaccinations at Once." CDC.gov, Sept. 2022. https://www.cdc.gov/vaccinesafety/concerns/multiple–vaccines–immunity.html

Q41.

Q41. Because babies are born with natural immunity, they don't need to be vaccinated against childhood illnesses until they are likely to be exposed to them. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	67	45	22	19	14	5	14	0

See: "Multiple Vaccinations at Once." CDC.gov, Sept. 2022. https://www.cdc.gov/vaccinesafety/concerns/multiple–vaccines–immunity.html

Q42.

Q42. Smoking during pregnancy increases the chances that the smoker's baby will be born early. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	10	2	7	64	40	24	26	0

See: "Smoking During Pregnancy." CDC.gov, September 2022. https://www.cdc.gov/tobacco/basic_information/health_effects/pregnancy/index.htm

Q43.

Q43. Smoking during pregnancy increases the chances that the smoker's baby will have birth defects. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	9	2	7	79	41	38	12	0

See: "Smoking During Pregnancy." CDC.gov, September 2022. https://www.cdc.gov/tobacco/basic_information/health_effects/pregnancy/index.htm

Q44.

Q44. Smoking during pregnancy increases the chances that the smoker's baby will die from sudden infant death syndrome (SIDS). [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	16	5	12	48	32	16	35	0

See: "Smoking During Pregnancy." CDC.gov, September 2022. https://www.cdc.gov/tobacco/basic_information/health_effects/pregnancy/index.htm

Q45.

Q45. As far as you know, does smoking during pregnancy: [CORRECT: UNDERWEIGHT]

Wave	N	Increase the chances that the smoker's baby will be overweight at birth	Increase the chances that the smoker's baby will be underweight at birth	Have no effect on the smoker's baby's weight at birth	Or are you not sure?	Refused
(H) 08/22/22	1621	1	65	3	30	0

See: "Smoking During Pregnancy." CDC.gov, September 2022. https://www.cdc.gov/tobacco/basic_information/health_effects/pregnancy/index.htm

Q46.

Q46. As far as you know, which of the following statements is the most accurate? [MOST ACCURATE: BEFORE PREGNANT]

Wave	N	Someone who wants to get pregnant should stop drinking alcohol before they are pregnant and not drink during...	Someone who wants to get pregnant should stop drinking alcohol as soon as they learn they are pregnant	Someone who wants to get pregnant should restrict their alcohol intake while pregnant to no more than two drinks a day	Or are you not sure?	Refused
(H) 08/22/22	1621	64	25	4	8	0

See: "Substance Use During Pregnancy." CDC.gov, May 2022. https://www.cdc.gov/reproductivehealth/maternalinfanthealth/substance–abuse/ substance–abuse–during–pregnancy.htm

Q47.

Q47. As far as you know, which of the following statements is the most accurate? [MOST ACCURATE: BEFORE PREGNANT]

Wave	N	Someone who wants to get pregnant should stop vaping before they are pregnant and not vape during their pregnancy	Someone who wants to get pregnant should stop vaping as soon as they learn they are pregnant	Someone who wants to get pregnant should restrict their vaping while pregnant to no more than twice a day	Or are you not sure?	Refused
(H) 08/22/22	1621	70	16	2	12	0

See: "Substance Use During Pregnancy." CDC.gov, May 2022. https://www.cdc.gov/reproductivehealth/maternalinfanthealth/substance–abuse/ substance–abuse–during–pregnancy.htm

Q48.

Q48. As far as you know, is the proportion of pregnancies in the United States that result in death of the person giving birth lower, higher, about the same as in comparable countries? [CORRECT: HIGHER]

Wave	N	Lower	Higher	About the same	Or are you not sure?	Refused
(H) 08/22/22	1621	32	20	14	33	0

See: "Declercq, Eugene and Laurie Zephyrin. 2020. "Maternal Mortality in the United States: A Primer." The Commonwealth Fund, December 2020, doi:10.26099/ta1q–mw24

Q49.

Q49. As far as you know, should a person of normal weight before pregnancy: [CORRECT: 25–35 lbs.]

Wave	N	Try not to gain weight during pregnancy	Gain between 5 and 10 pounds during pregnancy	Gain between 25 and 35 pounds during pregnancy	Or are you not sure?	Refused
(H) 08/22/22	1621	4	24	43	29	0

See: "Weight Gain During Pregnancy." CDC.gov, Sept. 2022. https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pregnancy–weight–gain.htm

Q50.

As far as you know, are infants born through Caesarian birth, also known as a C-Section, (more) likely to experience complications, (less) likely to experience complications, or just as likely to experience complications compared to infants born through vaginal birth, or are you not sure? [CORRECT: MORE LIKELY]

Wave	N	More likely	Less likely	Just as likely	Or are you not sure?	Refused
(H) 08/22/22	1621	11	13	42	34	0

See: Annibale DJ, Hulsey TC, Wagner CL, Southgate WM. 1995. "Comparative neonatal morbidity of abdominal and vaginal deliveries after uncomplicated pregnancies." Arch Pediatr Adolesc Med. 149(8):862–7. 10.1001/archpedi.1995.02170210036006

Q51.

Q51. Which statement comes closest to your view: [CORRECT: MORE]

Wave	N	Equally likely in both	Myocarditis is MORE likely among those infected with COVID–19	Myocarditis is MORE likely among those who take a COVID–19 vaccine	Not sure	Refused
(H) 08/22/22	1621	15	29	9	47	0
(G) 07/18/22	1580	16	27	10	48	0

See: "Q&A: COVID–19, Vaccines, and Myocarditis." COVID19.NIH.gov, July 2022. https://covid19.nih.gov/news–and–stories/covid–19–vaccines–myocarditis

Q52.

Q52. As far as you know, how should you ordinarily put a new baby down to sleep? [CORRECT: ON BACK]

Wave	N	On the infant's side	On infant's back	On infant's stomach	Or are you not sure?	Refused
(H) 08/22/22	1621	11	65	10	14	0

See: "Parents and Caregivers." CDC.gov, September 2022. https://www.cdc.gov/sids/Parents–Caregivers.htm

Q53.

Q53. Those who are pregnant should take a low dose supplement of vitamin C every day. [UNSPPORTED/NO EVIDENCE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	9	3	7	52	41	11	39	0

Q54.

Q54. Those who are pregnant should take a daily vitamin with 400 micrograms (mcg) of folic acid, which is a B vitamin. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	2	1	2	62	36	26	35	0

See: "During Pregnancy." CDC.gov, December 2021. https:// www.cdc.gov/pregnancy/during.html

Q55.

Q55. Those who are pregnant should take an animal–based omega three fat such as krill oil. [UNSPPORTED/NO EVIDENCE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	15	5	10	28	22	6	57	0

See: Griffin, R. Morgan. "Krill Oil." WebMD, May 2021. https://www.webmd.com/diet/supplement–guide–krill–oil

Q56.

Q56. Those who are pregnant should take a low dose supplement of iron every day. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	8	3	5	60	42	19	32	0

See: "Iron Fact Sheet for Professionals," National Institutes of Health (NIH), April 2022. https://ods.od.nih.gov/factsheets/Iron–HealthProfessional/

Q59.

Q59. As far as you know, does breastfeeding benefit the breastfed baby, the breastfeeding parent, both the breastfed baby and the breastfeeding parent, or neither, or are you not sure? [CORRECT: BOTH]

Wave	N	The baby	The parent	Both the baby and the parent	Neither	Or are you not sure?	Refused
(H) 08/22/22	1621	12	0	77	1	10	0

See: "Breastfeeding: Frequently Asked Questions (FAQs)." CDC.gov, September 2022. https://www.cdc.gov/breastfeeding/faq/index.htm#benefits

Q60.

Q60. As far as you know, does breast–milk from a vaccinated individual have benefits for the baby, have no effect on the baby, harm the baby, or are you not sure? [CORRECT: BENEFITS]

Wave	N	Benefits for the baby	Harms the baby	No effect on the baby	Or are you not sure?	Refused
(H) 08/22/22	1621	30	4	18	48	0

Q61.

Q61. Plan B is a form of emergency contraception that prevents pregnancy by delaying the release of an egg from the ovary. How familiar, if at all, are you with Plan B?

Wave	N	Not at all familiar	Not too familiar	Somewhat familiar	Very familiar	Don't know	Refused
(H) 08/22/22	1621	35	21	34	11	0	0

Q62.

Q62. If a person is pregnant, Plan B will not end the pregnancy. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	18	7	11	41	23	17	41	0

See: "Morning–after pill." The Mayo Clinic, Sept. 2022. https://www.mayoclinic.org/tests–procedures/morning–after–pill/about/pac–20394730

Q63.

Q63. Plan B does not prevent a person from contracting a sexually transmitted disease. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	7	4	3	78	14	65	15	0

See: "Morning–after pill." The Mayo Clinic, Sept. 2022. https://www.mayoclinic.org/tests–procedures/morning–after–pill/about/pac–20394730

Q64.

Q64. Plan B should be used as a person's usual means of birth control. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	65	48	17	8	5	2	27	0

See: "Morning–after pill." The Mayo Clinic, Sept. 2022. https://www.mayoclinic.org/tests–procedures/morning–after–pill/about/pac–20394730

Q65.

Q65. Being overweight can affect the effectiveness of Plan B. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	11	2	9	32	22	9	57	0

See: "Morning–after pill." The Mayo Clinic, Sept. 2022. https://www.mayoclinic.org/tests–procedures/morning–after–pill/about/pac–20394730

Q66.

Q66. Consuming a large amount of Pennyroyal oil or tea is a safe way to end a pregnancy. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	41	22	19	4	3	1	55	0

See: "Pennyroyal Oil." LiverTox: Clinical and Research Information on Drug–Induced Liver Injury. NIH National Library of Medicine, Sept. 2022. https://www.ncbi.nlm.nih.gov/books/NBK548673/

4 Climate Health Battery

Q67.

Q67. Scientists are uncertain whether human use of fossil fuels creates effects that endanger public health. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	52	35	18	22	17	4	26	0

See: Mulvey, Kathy and Seth Shulman. 2015. The Climate Deception Dossiers: Internal Fossil Fuel Industry Memos Reveal Decades of Corporate Disinformation. https://www.ucsusa.org/sites/default/files/attach/2015/07/The–Climate–Deception–Dossiers.pdf

Q68.

Q68. As far as you know, is the number of deaths associated with climate change: [CORRECT: INCREASING]

Wave	N	Decreasing	Increasing	Staying about the same	Climate change is not affecting the number of deaths	Or are you not sure?	Refused
(H) 08/22/22	1621	1	47	10	20	22	0

See: "Climate change and health." The World Health Organiztion, Oct. 2021. https://www.who.int/news–room/fact–sheets/detail/climate–change–and–health

Q69.

Q69. Which of the following statements comes closest to your view? [CORRECT: MORE]

Wave	N	There are more severe weather events now than in the past	There are fewer severe weather events now than in the past	There are roughly the same number of severe weather events now than in the past	Or are you not sure?	Refused
(H) 08/22/22	1621	65	3	21	10	0

See: "Climate change and health." The World Health Organiztion, Oct. 2021. https://www.who.int/news–room/fact–sheets/detail/climate–change–and–health

Q71.

Q71. As far as you know, which of the following method is the preferred one to help control mold? [CORRECT: SOAP AND WATER]

Wave	N	Clean moldy surfaces with water and soap	Clean the surface with undiluted bleach	Or are you not sure?	Refused
(H) 08/22/22	1621	15	67	17	1

Q72.

Q72.As far as you know, which is the better way to help prevent heat–related illnesses? [CORRECT: WATER]

Wave	N	Drink water	Drink sugary drinks	One is as good as the other in helping prevent heat–related illnesses	Or are you not sure?	Refused
(H) 08/22/22	1621	91	1	2	6	0

Q74.

Q74. As far as you know, which group is not more likely to experience negative health effects from exposure to smoke from a wildfire? [CORRECT: MIDDLE AGE]

Wave	N	Children	People with diabetes	Elderly adults	Middle aged adults	Or are you not sure?	Refused
(H) 08/22/22	1621	12	7	6	26	48	0

Q75.

Q75. As far as you know, will climate change increase, decrease, or not affect the number of people affected by illnesses such as Malaria, Lyme disease, West Nile virus, Dengue fever, and Zika virus. [CORRECT: INCREASE]

Wave	N	Increase	Decrease	Not affect	Or are you not sure?	Refused
(H) 08/22/22	1621	43	2	18	37	0

Q76.

Q76. As far as you know, is climate change: [CORRECT: INCREASING]

Wave	N	Increasing the number of children with asthma	Decreasing the number of children with asthma	Not affecting the number children with asthma	Or are you not sure?	Refused
(H) 08/22/22	1621	38	1	20	41	0

Q77.

Q77. As far as you know, in which of the following groups of people are heat–related deaths most common? [CORRECT: 65+]

Wave	N	Children	21 to 40 year olds	41 to 64 year olds	Those who are 65 years or older	Or are you not sure?	Refused
(H) 08/22/22	1621	9	4	8	62	16	0

See: "Understanding the Connections Between Climate Change and Human Health." Data and Tools, EPA.gov, December 2021. https://www.epa.gov/climate–indicators/understanding–connections–between–climate–change–and–human–health

Q70A.

Q70A. Those with low income face greater climate–change–related health risks than others. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	28	15	13	56	30	27	16	0

Q70B.

Q70B. Middle aged individuals face greater climate–change–related health risks than others. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	45	15	31	26	21	4	29	0

Q70C.

Q70C. Infants and toddlers face greater climate–change–related health risks than others. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	31	13	19	45	30	15	24	0

Q70D.

Q70D. Pregnant individuals face greater climate–change–related health risks than others. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	32	13	19	41	31	10	27	0

Q70E.

Q70E. Older individuals face greater climate–change–related health risks than others. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	22	10	12	60	37	23	17	0

Q70F.

Q70F. People who drive gas–powered cars face greater climate–change–related health risks than others. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	59	30	29	16	12	4	25	0

Q70G.

Q70G. Persons with chronic medical conditions face greater climate–change–related health risks than others. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	19	9	10	65	39	27	16	0

See: "Justice, Equity, Diversity, and Inclusion in Climate Adaptation Planning." CDC.gov, April 2022. https://www.cdc.gov/climateandhealth/JEDI.htm

Q73_1.

Q73_1. As far as you know, which of the following are signs of heat–related illness? – Nausea [TRUE]

Wave	N	NOT Selected	Selected
(H) 08/22/22	1621	21	79

Q73_2.

Q73_2. As far as you know, which of the following are signs of heat–related illness? – Hot, red, dry, or damp skin [TRUE]

Wave	N	NOT Selected	Selected
(H) 08/22/22	1621	29	71

Q73_3.

Q73_3. As far as you know, which of the following are signs of heat–related illness? – Cold, pale, and clammy skin [TRUE]

Wave	N	NOT Selected	Selected
(H) 08/22/22	1621	57	43

Q73_4.

Q73_4. As far as you know, which of the following are signs of heat–related illness? – Dizziness [TRUE]

Wave	N	NOT Selected	Selected
(H) 08/22/22	1621	14	86

Q73_5.

Q73_5. As far as you know, which of the following are signs of heat–related illness? – Hunger [FALSE]

Wave	N	NOT Selected	Selected
(H) 08/22/22	1621	94	6

5 Monkeypox Battery

MP1.

MP1. Have you seen, read, or heard anything about Monkeypox in the past month?

Wave	N	Yes	No	Don't know	Refused
(G) 07/18/22	1580	80	20	0	0

MP1A.

MP1A. How familiar, if at all, are you with Monkeypox?

Wave	N	NET Unfamiliar	Not at all familiar	Not too familiar	NET Familiar	Somewhat familiar	Very familiar	Don't know	Refused
(H) 08/22/22	1621	65	24	40	35	33	2	0	0

MP2.

MP2. How worried, if at all, are you about contracting Monkeypox in the next 3 months?

Wave	N	NET Low	Not at all worried	Not too worried	NET High	Somewhat worried	Very worried	Don't know	Refused
(H) 08/22/22	1621	79	40	39	21	16	6	0	0
(G) 07/18/22	1580	81	40	41	19	14	5	0	0

MP2A.

MP2A. Has anyone you personally known contracted Monkeypox?

Wave	N	No	1 person	2 or more people	Or are you not sure?	Refused
(H) 08/22/22	1621	96	1	1	2	0

MP4.

MP4. A vaccine against Monkeypox exists. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	11[g]	4	7[g]	61[g]	21	40[g]	28[g]	0
(G) 07/18/22	1580	15[h]	5	10[h]	34[h]	18	17[h]	51[h]	0

See: Browne, Ed. 2022. "U.S. Buys Millions of Monkeypox Vaccines As Mass. Man Infected." Newsweek. https://www.newsweek.com/monkeypox–cased–uk–massachusetts–case–vaccine–ordered–us–1708075

MP5.

MP5. Monkeypox is caused by exposure to a 5G signal. [FALSE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	82	69[g]	12	1	1	0	17	0
(G) 07/18/22	1580	78	65[h]	14	1	1	0	21	0

MP7.

MP7. Monkeypox usually spreads by close contact with an infected person. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	4	2	2	84[g]	31[g]	53[g]	11[g]	0
(G) 07/18/22	1580	6	2	4	69[h]	39[h]	29[h]	26[h]	0

See: Fiel, Ed. 2022. "Monkeypox Q&A." The Conversation. https://theconversation.com/monkeypox–qanda–how–do–you–catch–it–and–what–are–the–risks–an–expert–explains–183606

MP8.

MP8. Monkeypox was bioengineered in a lab. [UNSPPORTED/NO EVIDENCE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	57	34	23	15[g]	12	3[g]	28[g]	0
(G) 07/18/22	1580	54	30	24	12[h]	10	1[h]	34[h]	0

MP9H1.

MP9H1. Monkeypox was intentionally released. [UNSPPORTED/NO EVIDENCE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	811	60	34	26	16	12	4	24	0
(G) 07/18/22	790	56	34	22	14	12	2	30	0

MP10H2.

MP10H2. Monkeypox was intentionally released by scientists to deflect attention from the failures of the Biden administration. [UNSPPORTED/NO EVIDENCE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	810	70	53	18	12	8	3	18	0
(G) 07/18/22	790	71	50	21	10	8	2	19	0

MP11.

MP11. Getting the COVID–19 vaccine increases a recipient's chances of getting Monkeypox. [UNSPPORTED/NO EVIDENCE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	71	48	23	6	5	2	22[g]	0
(G) 07/18/22	1580	67	44	24	5	4	1	28[h]	0

MP11A.

MP11A. People with Monkeypox should isolate at home until the rash gone. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	5	1	3	77	33	44	18	0

MP12.

MP12. As far as you know: [CORRECT: LESS CONTAGIOUS]

Wave	N	Monkeypox is just about as contagious as COVID–19	Monkeypox is less contagious than COVID–19	Monkeypox is more contagious than COVID–19	Or are you not sure?	Refused
(H) 08/22/22	1621	17	41[g]	5[g]	37[g]	0
(G) 07/18/22	1580	14	36[h]	2[h]	48[h]	0

MP13B.

MP13B. As far as you know, are people at a higher risk of infection with Monkeypox if they – have had COVID–19 [FALSE]

Wave	N	Yes	No	Or are you not sure?	Refused
(H) 08/22/22	1621	5	49[g]	47[g]	0
(G) 07/18/22	1580	4	33[h]	63[h]	0

MP13C.

MP13C. As far as you know, are people at a higher risk of infection with Monkeypox if they – work with animals [TRUE]

Wave	N	Yes	No	Or are you not sure?	Refused
(H) 08/22/22	1621	12	43[g]	45[g]	0
(G) 07/18/22	1580	9	34[h]	57[h]	0

MP13D.

MP13D. As far as you know, are people at a higher risk of infection with Monkeypox if they – are men who have sex with men [TRUE]

Wave	N	Yes	No	Or are you not sure?	Refused
(H) 08/22/22	1621	63[g]	15[g]	21[g]	0
(G) 07/18/22	1580	33[h]	25[h]	41[h]	0

MP13E.

MP13E. As far as you know, are people at a higher risk of infection with Monkeypox if they – share bedding, clothing, or towels used by someone infected with Monkeypox [TRUE]

Wave	N	Yes	No	Or are you not sure?	Refused
(H) 08/22/22	1621	68	6	26	0

MP13F.

MP13F. As far as you know, are people at a higher risk of infection with Monkeypox if they – have close face to face contact with someone who is infected [TRUE]

Wave	N	Yes	No	Or are you not sure?	Refused
(H) 08/22/22	1621	67	9	24	0

VX4MP.

VX4MP. If you were exposed to Monkeypox, how likely, if at all, would you be to take the Monkeypox vaccine?

Wave	N	NET Unlikely	Not at all likely to get vaccinated	Not too likely	NET Likely	Somewhat likely	Very likely to get vaccinated	Don't know	Refused
(H) 08/22/22	1621	27	12	15	73	24	48	0	0

6 COVID-19 & Long COVID

Q51.

Q51. Which statement comes closest to your view: [CORRECT: MORE]

Wave	N	Equally likely in both	Myocarditis is MORE likely among those infected with COVID–19	Myocarditis is MORE likely among those who take a COVID–19 vaccine	Not sure	Refused
(H) 08/22/22	1621	15	29	9	47	0
(G) 07/18/22	1580	16	27	10	48	0

See: "Q&A: COVID–19, Vaccines, and Myocarditis." COVID19.NIH.gov, July 2022. https://covid19.nih.gov/news–and–stories/covid–19–vaccines–myocarditis

Q57.

Q57. One person with Long COVID may experience very different symptoms from another person who has Long COVID. [TRUE]

Wave	N	NET False	Definitely false	Probably false	NET True	Probably true	Definitely true	Or are you not sure?	Refused
(H) 08/22/22	1621	3	1	2	83	43	40	14	0

See: Diamond, Dan. 2022. "Transcript: Coronavirus: New Variants with Rochelle Walensky." The Washington Post. https://www.washingtonpost.com/washington–post–live/2022/07/22/ transcript–coronavirus–new–variants–with–rochelle–walensky/

Q58.

Q58. As far as you know, if you contract COVID–19, ARE you at... [CORRECT: LOWER RISK]

Wave	N	A LOWER risk of long Covid if you"ve been vaccinated against COVID–19	A HIGHER risk of Long Covid if you've been vaccinated	About the same risk of Long Covid as you would have been had you not taken a COVID–19 vaccine	Or are you not sure?	Refused
(H) 08/22/22	1621	51	3	25	20	0

APPENDIX III – ASAPH Wave 8 Survey Instrument

Maternal and Climate Health Questionnaire (English)

Replicate	Field Dates	Sample Size	Overall Completes
Replicate #1, #2, #3	August 16-22, 2022	N=1907	As many as possible

INFORMED CONSENT

(ASK ALL):

INTRO1. **[PN: IF CATI:** Now I**] [PN: IF WEB:** We**]** have some questions for you for a research study on issues related to current events on behalf of the Annenberg Public Policy Center of the University of Pennsylvania. Your participation in this study is completely voluntary and all responses will remain confidential in a password protected file at the University of Pennsylvania. Your individual responses will never be released as findings will be reported in the aggregate. All data we collect will be de-identified, and could be stored and distributed for future research. The information that we gather may help us to provide invaluable data on current events.

[PN: IF CATI:] If there is a question you would rather not answer, then we will move on.

[PN: IF WEB:] You can skip any question that you would rather not answer.

[PN: IF CATI:] [IF NECESSARY: If you have any questions regarding this research or with regard to your participation, you can contact Dr. Ken Winneg at the University of Pennsylvania: 215-898-2641**]**

[PN: IF WEB:] If you have any questions regarding this research or with regard to your participation, you can contact Dr. Ken Winneg at the University of Pennsylvania: 215-898-2641.

[END TIMER]
[START TIMER]

[PN: INCLUDE A RANDOM HALF SAMPLE PROGRAMMING VARIABLE '**RESPONSEROT**'
IF RESPONSEROT=1, THEN ALWAYS SHOW RESPONSES IN ORDER IF RESPONSES ARE ROTATED
IF RESPONSEROT=2, THEN ALWAYS SHOW RESPONSES IN REVERSE ORDER IF RESPONSES ARE ROTATED]

TRUST BATTERY

Q1-Q5.
(ASK ALL)
(PN: RANDOMIZE ITEMS; ROTATE ORDER OF RESPONSES 1-4/4-1; INCLUDE RANDOMIZATION IN DATA FILE)
In general, how confident, if at all, are you that the following are providing the public with trustworthy information about means of preventing and treating disease?

[PN: IF WEB:] (INSERT ITEM)

[PN: IF CATI:] First, **(INSERT ITEM)**. How confident, if at all, are you that each of the following is providing the public with trustworthy information about means of preventing and treating disease (READ LIST)

[PN: IF CATI: Next, **(INSERT ITEM)**.
(READ IF NECESSARY: How confident, if at all, are you that **(INSERT ITEM)** is providing the public with trustworthy information about means of preventing and treating diseases? Are you: (READ LIST))**]**

1 Not at all confident
2 Not too confident
3 Somewhat confident
4 Very confident
(PN: Q5 ONLY) 5 **[PN: IF CATI:]** (DO NOT READ) I have no primary health care provider
(PN: Q5 ONLY) 5 **[PN: IF WEB:]** I have no primary health care provider
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q1. The U.S. Centers for Disease Control and Prevention (CDC)
Q2. The Food and Drug Administration (FDA)
Q3. The National Institutes of Health (NIH)
Q4. The U.S. Surgeon General
Q5. Your doctor, nurse or primary health care provider

Q6-Q11.
(ASK ALL)
(PN: RANDOMIZE ITEMS; ROTATE ORDER OF RESPONSES 1-4/4-1; INCLUDE RANDOMIZATION IN DATA FILE)
As far as you know, for each of the following vaccines, please indicate how **safe**, if at all, you think getting it is.

[PN: IF WEB:] (INSERT ITEM)

[PN: IF CATI:] First, **(INSERT ITEM)**. How **safe**, if at all, you think getting it is? (READ LIST)

[PN: IF CATI: Next, **(INSERT ITEM)**.
(READ IF NECESSARY: How **safe**, if at all, you think getting **(INSERT ITEM)** is? (READ LIST))**]**

1 Very unsafe
2 Somewhat unsafe
3 Somewhat safe
4 Very safe
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q6. The human papillomavirus **[PN: IF CATI: (PRONO: pa-puh-LOW-muh virus)]** (HPV) vaccine
Q7. The Measles, Mumps, and Rubella (MMR) vaccine
Q8. The flu vaccine
Q9. The COVID-19 vaccine
Q10. The Shingles vaccine
Q11. The pneumonia vaccine

Q12-Q17.
(ASK ALL)
(PN: RANDOMIZE ITEMS IN SAME ORDER AS Q6-Q11; ROTATE ORDER OF RESPONSES 1-4/4-1)
As far as you know, for each of the following vaccines, please indicate how **effective**, if at all, you think it is in preventing symptomatic disease.

[PN: IF WEB:] (INSERT ITEM)

[PN: IF CATI:] First, **(INSERT ITEM)**. How **effective**, if at all, you think getting it is in preventing symptomatic disease? (READ LIST)

[PN: IF CATI: Next, **(INSERT ITEM)**.
(READ IF NECESSARY: How **effective**, if at all, you think getting **(INSERT ITEM)** is in preventing symptomatic disease? (READ LIST)**]**

1 Very ineffective
2 Somewhat ineffective
3 Somewhat effective
4 Very effective
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q12. The human papillomavirus (HPV) vaccine
Q13. The Measles, Mumps, and Rubella (MMR) vaccine
Q14. The flu vaccine
Q15. The Covid-19 vaccine
Q16. The Shingles vaccine
Q17. The pneumonia vaccine

Q18-Q29.
(ASK ALL)
(PN: FOR WEB SHOW 'Please indicate if you believe the statement below is true, false, or if you aren't sure.' ON EVERY SCREEN)
(PN: FOR CATI SHOW "Now I'm going to read you some statements. For each one, please tell me if you believe it is true, false, or if you aren't sure."
(PN: RANDOMIZE ITEMS; ROTATE RESPONSE OPTIONS 1-4/4-1; INCLUDE RANDOMIZATION VARIABLE IN DATASET; DO NOT ROTATE VERBIAGE IN QUESTION STEM)
(PN: ADD SEPARATE TIMING MODULE AROUND EVERY ITEM IN THIS SERIES)

[PN: IF WEB: Please indicate if you believe the statement below is true, false, or if you aren't sure.**]**

[PN: IF CATI: Now I'm going to read you some more statements. For each, please tell me if you believe it is true, false, or if you aren't sure.**]**

[PN: IF WEB: (INSERT ITEM)]

[PN: IF CATI: The first statement is: **(INSERT ITEM)**. Is this statement: (READ LIST)**]**

[PN: IF CATI: The next statement is: **(INSERT ITEM)**.
(READ IF NECESSARY: Is this statement: (READ LIST)**]**

1 Definitely false
2 Probably false
3 Probably true
4 Definitely true
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q18. The vaccines given to me during my childhood protected me from diseases such as Polio and Tetanus.
Q19. Vaccines in general are full of toxins and harmful ingredients like "antifreeze." **(FALSE)**
Q20. Vaccines given to children for diseases like measles, mumps, and rubella cause autism **(FALSE)**
Q21. Getting a vaccine approved for use in the United States is safer than getting the disease **(TRUE)**
Q22. The human papillomavirus (HPV) vaccine leads teens to engage in risky sexual behavior **(FALSE)**
Q23. Use of vaccination against Smallpox is a major reason that people no longer die from Smallpox **(TRUE)**
Q24. In the US, allergic reactions to authorized vaccines against COVID-19 are very rare **(TRUE)**
Q25. Health officials at the U.S. Centers for Disease Control and Prevention (CDC) exaggerate the danger posed by diseases in order to get people to vaccinate **(UNSUPPORTED/NO EVIDENCE)**
Q26. Harmful effects of the COVID-19 vaccines will only be apparent years from now. **(UNSUPPORTED/NO EVIDENCE)**
Q27. Vaccines are not authorized for use in the United States until after a rigorous, independent review process certifies that they are safe and effective. **(ATTITUDE)**
Q28. COVID-19 vaccination during pregnancy is safe and effective **(TRUE)**
Q29. Getting a COVID-19 vaccine can reduce the risk of complications that affect a pregnancy **(TRUE)**

Q30.
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
Please indicate whether you think getting the **flu** vaccine:

[PN: IF CATI: [READ LIST]**]**

1 Increases your chances of getting the flu
2 Decreases your chances of getting the flu
3 Has no effect on your chances of getting the flu
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q31.
{WAVE: W5,W6 – NEWW56}
(ASK ALL)
The Vaccine Adverse Events Reporting System, also known as VAERS, is a system run by the U.S. Department of Health and Human Services that detects possible safety problems in US-licensed vaccines.

As far as you know, have the deaths reported in the Vaccine Adverse Events Reporting System (VAERS) been confirmed to have been caused by the COVID-19 vaccination, or have the deaths reported in the Vaccine Adverse Events Reporting System (VAERS) not been confirmed to have been caused by the COVID-19 vaccination or aren't you sure?

1 Confirmed to have been caused by the COVID-19 vaccination
2 Not confirmed to have been caused by the COVID-19 vaccination **(CORRECT)**
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q32.
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
As far as you know, is the rate of infant mortality higher for:

1 Home births **(CORRECT)**
2 Hospital births
3 There is no “real” difference between the two
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q33-Q44.
(ASK ALL)
(PN: FOR WEB SHOW 'Please indicate if you believe the statement below is true, false, or if you aren't sure.' ON EVERY SCREEN)
(PN: FOR CATI SHOW "Now I'm going to read you some statements. For each one, please tell me if you believe it is true, false, or if you aren't sure."
(PN: RANDOMIZE ITEMS; ROTATE RESPONSE OPTIONS 1-4/4-1; INCLUDE RANDOMIZATION VARIABLE IN DATASET; DO NOT ROTATE VERBIAGE IN QUESTION STEM)
(PN: ADD SEPARATE TIMING MODULE AROUND EVERY ITEM IN THIS SERIES)

[PN: IF WEB: Please indicate if you believe the statement below is true, false, or if you aren't sure.**]**

[PN: IF CATI: Now I'm going to read you some more statements. For each, please tell me if you believe it is true, false, or if you aren't sure.**]**

[PN: IF WEB: (INSERT ITEM)]

[PN: IF CATI: The first statement is: **(INSERT ITEM)**. Is this statement: (READ LIST)**]**

[PN: IF CATI: The next statement is: **(INSERT ITEM)**.

(READ IF NECESSARY: Is this statement: (READ LIST)**]**

1 Definitely false
2 Probably false
3 Probably true
4 Definitely true
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q33. Untreated high blood pressure increases the likelihood that someone who is pregnant will have a stroke **(TRUE)**
Q34. The imaging method known as ultrasound uses x rays to produce its images **(FALSE)**
Q35. The breastfeeding parent and breastfed baby both benefit from breastfeeding **(TRUE)**
Q36. The glucose tolerance drink that is used to determine whether someone has diabetes should NOT be used to detect diabetes during pregnancy **(FALSE)**
Q37. There is no safe amount of alcohol while pregnant **(TRUE)**
Q38. How well a person takes care of their health before getting pregnant affects the health of their baby **(TRUE)**
Q39. How well a person takes care of their health during their pregnancy affects their baby's health. **(TRUE)**
Q40. Childhood vaccines that are given together as part of the approved vaccination schedule often cause illness by overwhelming the child's immune system **(FALSE)**
Q41. Because babies are born with natural immunity, they don't need to be vaccinated against childhood illnesses until they are likely to be exposed to them **(FALSE)**
Q42. Smoking during pregnancy increases the chances that the smoker's baby will be born early **(TRUE)**
Q43. Smoking during pregnancy increases the chances that the smoker's baby will have birth defects **(TRUE)**
Q44. Smoking during pregnancy increases the chances that the smoker's baby will die **from sudden infant death syndrome (SIDS)** **(TRUE)**

Q45.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
As far as you know, does smoking during pregnancy:

[PN: IF CATI: [READ LIST]**]**

1 Increase the chances that the smoker's baby will be overweight at birth
2 Increase the chances that the smoker's baby will be underweight at birth **(CORRECT)**
3 Have no effect on the smoker's baby's weight at birth
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

[PN: RANDOMIZE ORDER OF Q46/Q47; INCLUDE RANDOMIZATION VARIABLE IN DATASET]

Q46.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-3/3-1)
As far as you know, which of the following statements is the most accurate?

[PN: IF CATI: [READ LIST]**]**

1 Someone who wants to get pregnant should stop drinking **alcohol** before they are pregnant and not drink during their pregnancy **(MOST ACCURATE)**
2 Someone who wants to get pregnant should stop drinking **alcohol** as soon as they learn they are pregnant
3 Someone who wants to get pregnant should restrict their **alcohol** intake while pregnant to no more than two drinks a day
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q47.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-3/3-1)
As far as you know, which of the following statements is the most accurate?

[PN: IF CATI: [READ LIST]**]**

1 Someone who wants to get pregnant should stop **vaping** before they are pregnant and not vape during their pregnancy **(MOST ACCURATE)**
2 Someone who wants to get pregnant should stop **vaping** as soon as they learn they are pregnant
3 Someone who wants to get pregnant should restrict their **vaping** while pregnant to no more than twice a day
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q48.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1; ROTATE ITEMS IN PARENS IN SAME ORDER)
As far as you know, is the proportion of pregnancies in the United States that result in death of the person giving birth (lower), (higher), about the same as in comparable countries?

[PN: IF CATI: [READ LIST]**]**

1 Lower
2 Higher **(CORRECT)**
3 About the same
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q49.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-3/3-1)
As far as you know, should a person of normal weight before pregnancy:

[PN: IF CATI: [READ LIST]**]**

1 Try not to gain weight during pregnancy
2 Gain between 5 and 10 pounds during pregnancy
3 Gain between 25 and 35 pounds during pregnancy **(CORRECT)**
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q50.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1; ROTATE ITEMS IN PARENS IN SAME ORDER)
As far as you know, are infants born through Caesarian **[PN: IF CATI: (PRONO: si-zer-ee-en)]** birth, also known as a C-Section, (more) likely to experience complications, (less) likely to experience complications, or just as likely to experience complications compared to infants born through vaginal birth, or are you not sure?

1 More likely **(CORRECT)**
2 Less likely
3 Just as likely
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q51.
{WAVE:W7 – D59B}
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
Myocarditis **[PN: IF CATI: (PRONO: MY-OH-CAR-DIE-TIS)]** is an inflammation of the middle layer of the heart wall.

Which statement comes closest to your view:

[PN: IF CATI: [READ LIST]**]**

1 Myocarditis is MORE likely among those infected with COVID-19 **(CORRECT)**
2 Myocarditis is MORE likely among those who take a COVID-19 vaccine
3 Equally likely in both
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q52.
(ASK ALL)
(RANDOMIZE RESPONSE OPTIONS 1-3; INCLUDE RANDOMIZATION VARIABLE IN DATASET)
As far as you know, how should you ordinarily put a new baby down to sleep?

[PN: IF CATI: [READ LIST]**]**

1 On the infant's side
2 On infant's back **(CORRECT)**
3 On infant's stomach
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q53-Q57.
(ASK ALL)
(PN: FOR WEB SHOW 'Please indicate if you believe the statement below is true, false, or if you aren't sure.' ON EVERY SCREEN)
(PN: FOR CATI SHOW "Now I'm going to read you some statements. For each one, please tell me if you believe it is true, false, or if you aren't sure."
(PN: RANDOMIZE ITEMS; ROTATE RESPONSE OPTIONS 1-4/4-1; INCLUDE RANDOMIZATION VARIABLE IN DATASET; DO NOT ROTATE VERBIAGE IN QUESTION STEM)
(PN: ADD SEPARATE TIMING MODULE AROUND EVERY ITEM IN THIS SERIES)
[PN: IF WEB: Please indicate if you believe the statement below is true, false, or if you aren't sure.**]**

[PN: IF CATI: Now I'm going to read you some more statements. For each, please tell me if you believe it is true, false, or if you aren't sure.**]**

[PN: IF WEB: **(INSERT ITEM)**]

[PN: IF CATI: The first statement is: **(INSERT ITEM)**. Is this statement: (READ LIST)**]**

[PN: IF CATI: The next statement is: **(INSERT ITEM)**.
(READ IF NECESSARY: Is this statement: (READ LIST)**]**

1 Definitely false
2 Probably false
3 Probably true
4 Definitely true
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q53. Those who are pregnant should take a low dose supplement of vitamin C every day **(UNSUPPORTED)**
Q54. Those who are pregnant should take a daily vitamin with 400 micrograms (mcg) of folic acid, which is a B vitamin **(TRUE)**
Q55. Those who are pregnant should take an animal-based omega three fat such as krill oil **(UNSUPPORTED)**
Q56. Those who are pregnant should take a low dose supplement of iron every day **(TRUE)**
Q57. One person with Long COVID may experience very different symptoms from another person who has Long COVID. **(TRUE)**

Q58.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
As far as you know, if you contract COVID-19, are **YOU** at…

[PN: IF CATI: [READ LIST]**]**

1 A LOWER risk of long Covid if you've been vaccinated against COVID-19 **(TRUE)**
2 A HIGHER risk of Long Covid if you've been vaccinated
3 About the same risk of Long Covid as you would have been had you not taken a COVID-19 vaccine
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q59.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
As far as you know, does breastfeeding benefit the breastfed baby, the breastfeeding parent, both the breastfed baby and the breastfeeding parent, or neither, or are you not sure?

1 The baby
2 The parent
3 Both the baby and the parent **(CORRECT)**
4 Neither
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q60.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
As far as you know, does breast-milk from a vaccinated individual have benefits for the baby, have no effect on the baby, harm the baby, or are you not sure?

1 Benefits for the baby **(CORRECT)**
2 Harms the baby
3 No effect on the baby
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q61.
(ASK ALL)
Plan B is a form of emergency contraception that prevents pregnancy by delaying the release of an egg from the ovary.

How familiar, if at all, are you with Plan B?

[PN: IF CATI: [READ LIST]**]**

1 Not at all familiar
2 Not too familiar
3 Somewhat familiar
4 Very familiar
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q62-Q66.
(ASK ALL)
(PN: FOR WEB SHOW 'Please indicate if you believe the statement below is true, false, or if you aren't sure.' ON EVERY SCREEN)
(PN: FOR CATI SHOW "Now I'm going to read you some statements. For each one, please tell me if you believe it is true, false, or if you aren't sure."
(PN: RANDOMIZE ITEMS; ROTATE RESPONSE OPTIONS 1-4/4-1; INCLUDE RANDOMIZATION VARIABLE IN DATASET; DO NOT ROTATE VERBIAGE IN QUESTION STEM)
(PN: ADD SEPARATE TIMING MODULE AROUND EVERY ITEM IN THIS SERIES)
[PN: IF WEB: Please indicate if you believe the statement below is true, false, or if you aren't sure.**]**

[PN: IF CATI: Now I'm going to read you some more statements. For each, please tell me if you believe it is true, false, or if you aren't sure.**]**

[PN: IF WEB: **(INSERT ITEM)**]

[PN: IF CATI: The first statement is: **(INSERT ITEM)**. Is this statement: (READ LIST)**]**

[PN: IF CATI: The next statement is: **(INSERT ITEM)**.
(READ IF NECESSARY: Is this statement: (READ LIST)**]**

1 Definitely false
2 Probably false
3 Probably true
4 Definitely true
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q62. If a person is pregnant, Plan B will not end the pregnancy **(TRUE)**
Q63. Plan B does not prevent a person from contracting a sexually transmitted disease **(TRUE)**
Q64. Plan B should be used as a person's usual means of birth control **(FALSE)**
Q65. Being overweight can affect the effectiveness of Plan B **(TRUE)**
Q66. Consuming a large amount of Pennyroyal oil or tea is a safe way to end a pregnancy **(TRUE)**

CLIMATE HEALTH BATTERY

Q67.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-4/4-1; DO NOT ROTATE VERBIAGE IN QUESTION STEM)
(PN: ADD SEPARATE TIMING MODULE AROUND EVERY ITEM IN THIS SERIES)
[PN: IF WEB: Please indicate if you believe the statement below is true, false, or if you aren't sure.**]**

[PN: IF CATI: Now I'm going to read you a statement. Please tell me if you believe it is true, false, or if you aren't sure.**]**

(INSERT ITEM).

[PN: IF CATI: Is this statement: (READ LIST)**]**

1 Definitely false
2 Probably false
3 Probably true
4 Definitely true
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q67. Scientists are uncertain whether human use of fossil fuels creates effects that endanger public health. **(FALSE)**

Q68.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
As far as you know, is the number of deaths associated with climate change:

[PN: IF CATI: (READ LIST)**]**

1 Decreasing
2 Increasing **(CORRECT)**
3 Staying about the same
4 Climate change is not affecting the number of deaths
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q69.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
Which of the following statements comes closest to your view?

[PN: IF CATI: (READ LIST)**]**

1 There are more severe weather events now than in the past **(ACCURATE)**
2 There are fewer severe weather events now than in the past
3 There are roughly the same number of severe weather events now than in the past
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q70A-Q70F.
(ASK ALL)
(PN: FOR WEB SHOW 'Please indicate if you believe the statement below is true, false, or if you aren't sure.' ON EVERY SCREEN)
(PN: FOR CATI SHOW "Now I'm going to read you some statements. For each one, please tell me if you believe it is true, false, or if you aren't sure."
(PN: RANDOMIZE ITEMS; ROTATE RESPONSE OPTIONS 1-4/4-1; INCLUDE RANDOMIZATION VARIABLE IN DATASET; DO NOT ROTATE VERBIAGE IN QUESTION STEM)
(PN: ADD SEPARATE TIMING MODULE AROUND EVERY ITEM IN THIS SERIES)
[PN: IF WEB: Please indicate if you believe the statement below is true, false, or if you aren't sure.**]**

[PN: IF CATI: Now I'm going to read you some more statements. For each, please tell me if you believe it is true, false, or if you aren't sure.**]**

[PN: IF WEB: **(INSERT ITEM)**]

[PN: IF CATI: The first statement is: **(INSERT ITEM)**. Is this statement: (READ LIST)**]**

[PN: IF CATI: The next statement is: **(INSERT ITEM)**.
(READ IF NECESSARY: Is this statement: (READ LIST)**]**

1 Definitely false
2 Probably false
3 Probably true
4 Definitely true
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q70A. Those with low income face greater climate-change-related health risks than others **(TRUE)**
Q70B. Middle aged individuals face greater climate-change-related health risks than others **(FALSE)**
Q70C. Infants and toddlers face greater climate-change-related health risks than others **(TRUE)**
Q70D. Pregnant individuals face greater climate-change-related health risks than others **(TRUE)**
Q70E. Older individuals face greater climate-change-related health risks than others **(TRUE)**
Q70F. People who drive gas-powered cars face greater climate-change-related health risks than others **(FALSE)**
Q70G. Persons with chronic medical conditions face greater climate-change-related health risks than others **(TRUE)**

Q71.
(PN: RANDOMIZE RESPONSE OPTIONS 1-2; INCLUDE RANDOMIZATION VARIABLE IN DATASET)
As far as you know, which of the following method is the preferred one to help control mold?

[PN: IF CATI: (READ LIST)**]**

1 Clean moldy surfaces with water and soap **(PREFERRED)**
2 Clean the surface with undiluted bleach
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q72.
(PN: RANDOMIZE RESPONSE OPTIONS 1-2; INCLUDE RANDOMIZATION VARIABLE IN DATASET)
As far as you know, which is the better way to help prevent heat-related illnesses?

[PN: IF CATI: (READ LIST)**]**

1 Drink water **(TRUE)**
2 Drink sugary drinks **(FALSE)**
3 One is as good as the other in helping prevent heat-related illnesses
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q73.
(PN: ALLOW MULTIPLE RESPONSES; CODES 997 AND 998 EXCLUSIVE)
(PN: RANDOMIZE RESPONSE OPTIONS 1-5; INCLUDE RANDOMIZATION VARIABLE IN DATASET)
As far as you know, which of the following are signs of heat-related illness?

[PN: IF CATI: (READ LIST; PAUSING AFTER EACH TO ALLOW R TO SAY YES OR NO. IF R SAYS 'NO' TO ALL, SELECT 'NONE OF THE ABOVE')**]**

[PN: IF WEB: *(Select all that apply)***]**

1 Nausea **(TRUE)**
2 Hot, red, dry, or damp skin **(TRUE)**
3 Cold, pale, and clammy skin **(TRUE)**
4 Dizziness **(TRUE)**
5 Hunger **(FALSE)**
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q74.
(ASK ALL)
(PN: RANDOMIZE RESPONSE OPTIONS 1-4; INCLUDE RANDOMIZATION VARIABLE IN DATASET)
As far as you know, which group is **not** more likely to experience negative health effects from exposure to smoke from a wildfire?

[PN: IF CATI: (READ LIST)**]**

1 Children
2 People with diabetes
3 Elderly adults
4 Middle aged adults **(CORRECT)**
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q75.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
As far as you know, will climate change increase, decrease, or not affect the number of people affected by illnesses such as Malaria **[PN: IF CATI: (PRONO: muh-leh-ree-uh)]**, Lyme disease **[PN: IF CATI: (PRONO: lime-disease)]**, West Nile virus, Dengue fever **[PN: IF CATI: (PRONO: deng-gay fever)]**, and Zika virus **[PN: IF CATI: (PRONO: zee·kuh virus)]**?

1 Increase **(CORRECT)**
2 Decrease
3 Not affect
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q76.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-2/2-1)
As far as you know, is climate change:

[PN: IF CATI: (READ LIST)**]**

1 Increasing the number of children with asthma **(CORRECT)**
2 Decreasing the number of children with asthma
3 Not affecting the number children with asthma
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

Q77.
(ASK ALL)
As far as you know, in which of the following groups of people are heat-related deaths most common?

[PN: IF CATI: (READ LIST)**]**

1 Children
2 21 to 40 year olds
3 41 to 64 year olds
4 Those who are 65 years or older **(CORRECT)**
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

MONKEYPOX

MP1A.
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-4/4-1)
How familiar, if at all, are you with Monkeypox?

1 Not at all familiar
2 Not too familiar
3 Somewhat familiar
4 Very familiar
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

MP2.
{WAVE:W7}
(ASK ALL)
(PN: ROTATE RESPONSE OPTIONS 1-4/4-1)
How worried, if at all, are you about contracting **Monkeypox** in the next 3 months?

[PN: IF CATI: [READ LIST]**]**

1 Not at all worried
2 Not too worried
3 Somewhat worried
4 Very worried
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

MP2A.
(ASK ALL)
Has anyone you personally known contracted Monkeypox?

[PN: IF CATI:] [IF YES: Is that 1 person, or 2 or more people?**]**

0 No
1 1 person
2 2 or more people
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

VX4MP MOVED DOWN

MP4-MP11A.
{WAVE:W7}
(MP4-MP8, MP11; ASK ALL; MP9 ASK OF RANDOM HALF SAMPLE; MP10 ASK OF RANDOM HALF SAMPLE NOT ASK MP9)
(PN: FOR WEB SHOW 'Please indicate if you believe the statement below is true, false, or if you aren't sure.' ON EVERY SCREEN)
(PN: FOR CATI SHOW "Now I'm going to read you some more statements. For each, please tell me if you believe it is true, false, or if you aren't sure." ON ITS OWN PAGE BEFORE THE FIRST ITEM)
(PN: RANDOMIZE ITEMS; ROTATE RESPONSE OPTIONS 1-4/4-1; INCLUDE RANDOMIZATION AND ROTATE IN DATA FILE; DO NOT ROTATE VERBIAGE IN QUESTION STEM)
(PN: ADD SEPARATE TIMING MODULE AROUND EVERY ITEM IN THIS SERIES)
[PN: IF WEB: Please indicate if you believe the statement below is true, false, or if you aren't sure.**]**

[PN: IF CATI: Now I'm going to read you some more statements. For each, please tell me if you believe it is true, false, or if you aren't sure.**]**

[PN: IF WEB: (INSERT ITEM)]

[PN: IF CATI: The first statement is: **(INSERT ITEM)**. Is this statement: (READ LIST)**]**

[PN: IF CATI: The next statement is: **(INSERT ITEM)**.
(READ IF NECESSARY: Is this statement: (READ LIST)**]**

1 Definitely false
2 Probably false
3 Probably true
4 Definitely true
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

MP4. A vaccine against Monkeypox exists **[TRUE]**
MP5. Monkeypox is caused by exposure to a 5G signal **[FALSE]**
NO MP6
MP7. Monkeypox usually spreads by close contact with an infected person **[TRUE]**
MP8. Monkeypox was bioengineered in a lab **[NO EVIDENCE]**
MP9H1. Monkeypox was intentionally released **[NO EVIDENCE]**

MP10H2. Monkeypox was intentionally released by scientists to deflect attention from the failures of the Biden administration **[NO EVIDENCE]**

MP11. Getting the COVID-19 vaccine increases a recipient's chances of getting Monkeypox **[NO EVIDENCE]**

MP11A. People with Monkeypox should isolate at home until the rash gone **[TRUE]**

VX4MP MOVED HERE

VX4MP.

(ASK ALL)

(PN: ROTATE RESPONSE OPTIONS 1-4/4-1)

As you may know, there is a vaccine that is approved by the Food and Drug Administration, also known as the FDA, to protect people from Monkeypox. The U.S. Centers for Disease Control and Prevention (CDC) recommends that the vaccine be given within 4 days from the date of exposure for the best chance to prevent onset of the disease.

If you were exposed to Monkeypox, how likely, if at all, would you be to take the Monkeypox vaccine?

[PN: IF CATI: [READ LIST]**]**

1 Not at all likely to get vaccinated
2 Not too likely
3 Somewhat likely
4 Very likely to get vaccinated
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

MP12.

{WAVE:W7}

(ASK ALL)

As far as you know:

[PN: IF CATI: [READ LIST]**]**

1 Monkeypox is more contagious than COVID-19
2 Monkeypox is less contagious than COVID-19 **[CORRECT]**
3 Monkeypox is just about as contagious as COVID-19
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

MP13.
{WAVE: ITEMS B- W7; ITEM E-F NEW}
(PN: RANDOMIZE ITEMS B-F; INCLUDE RANDOMIZATION VARIABLE DATASET)
As far as you know, are people at a higher risk of infection with Monkeypox if they **(INSERT ITEM)**?

1 Yes
2 No
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

NO ITEM A
b. have had COVID-19 **[FALSE]**
c. work with animals **[TRUE]**
d. are men who have sex with men **[TRUE]**
e. share bedding, clothing, or towels used by someone infected with Monkeypox **[TRUE]**
f. have close face to face contact with someone who is infected **[TRUE]**

POLIO1.
Have you been vaccinated against polio, or not, or are you not sure?

1 Yes
2 No
998 Or are you not sure?
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

DEMOGRAPHICS

[PN: INCLUDE A RANDOM HALF SAMPLE PROGRAMMING VARIABLE '**DEMREP**'
IF DEMREP=1, THEN ALWAYS ASK ABOUT DEMOCRAT BEFORE REPUBLICAN
IF DEMREP=2, THEN ALWAYS ASK ABOUT REPUBLICAN BEFORE DEMOCRAT]

PID1.
{WAVE: APPC NATIONAL W1,W5}
(ASK ALL)
(PN: ROTATE ITEMS IN PARENS AND RESPONSE OPTIONS 1-2/2-1 BASED ON DEMREP)
Do you consider yourself a (Democrat), a (Republican), an Independent, a supporter of some other party, or none of these?

1 Democrat
2 Republican
3 Independent
4 Some other party (SPECIFY)
5 None of these
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

PID3.
{WAVE: APPC NATIONAL W1,W5}
(ASK IF PID1=3,5,998,999; IF INDEPENDENT/NO PARTY/DK/REF/DECLINE)
(PN: ROTATE ITEMS IN PARENS AND RESPONSE OPTIONS 1-2/2-1 BASED ON DEMREP)
Do you think of yourself as closer to the (Democratic Party) or the (Republican Party)?

1 Closer to the Democratic Party
2 Closer to the Republican Party
3 **[PN: IF WEB:]** Neither
3 **[PN: IF CATI:]** (DO NOT READ) Neither
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

EDUC2.
{WAVE: APPC NATIONAL W1}
(ASK ALL)
What is the highest level of school you have completed or the highest degree you have received?

[PN: IF CATI: [DO NOT READ LIST]**]**

[PN: IF CATI: (INTERVIEWER NOTE: Enter code 3-HS grad if R completed training that did NOT count toward a degree)**]**

[PN: IF CATI: (INTERVIEWER NOTE: Enter code 3-HS graduate if R completed vocational, business, technical, or training courses after high school that did NOT count toward an associate degree from a college, community college or university (e.g., training for a certificate or an apprenticeship))**]**

[PN: IF WEB: *(Select: "High school graduate" if you completed training that did NOT count toward a degree.)***]**

001 Less than high school (Grades 1-8 or no formal schooling)
002 High school incomplete (Grades 9-11 or Grade 12 with NO diploma)
003 High school graduate (Grade 12 with diploma or GED certificate or vocational, business technical or other training that did not count toward a degree)
004 Some college, no degree (includes some community college)
005 Two year associate degree from a college or university
006 Four year college or university degree/Bachelor's degree (e.g., BS, BA, AB)
007 Some postgraduate or professional schooling, no postgraduate degree
008 Postgraduate or professional degree, including master's, doctorate, medical or law degree (e.g., MA, MS, PhD, MD, JD)
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

SOMECOLL1.
(ASK IF EDUC2=4; IF SOME COLLEGE)
How many semesters did you complete?

1 Less than one semester
2 One or more semester
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

[PN: IF SOMECOLL1=1 AUTOMATICALLY RECODE EDUC2=3]

INT1.
(ASK IF CATI)
(PN: IF WEB, AUTOCODE AS 1)
Do you use the internet or email, at least occasionally?

1 Yes
2 No
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

INT3.
(ASK IF INT1=2,999)
Do you access the internet on a cellphone, tablet or other mobile handled device at least occasionally?

1 Yes
2 No
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank

INTFREQ1.
(ASK IF WEB OR INT1=1 OR INT3=1)
(PN: IF INT1=2-999 AND INT3=2-999 AUTOPUNCH AS 6 'Not an internet user')
About how often do you use the internet?

[PN: IF CATI: [READ LIST]**]**

001 Almost constantly
002 Several times a day
003 About once a day
004 Several times a week
005 Less often
006 **(PN: SUPPRESS)** Not an internet user
998 **[PN: IF CATI:]** (DO NOT READ) Don't know
999 **[PN: IF CATI:]** (DO NOT READ) Refused
999 **[PN: IF WEB:]** Decline/Web blank