

**How Many People Died from the Covid-19 Inoculations?
An Estimate Based on a Survey of the United States Population***

**Working Paper
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Abstract

This paper examines the potential fatalities and injuries from the COVID-19 inoculation using an online “Covid-19 Health Experiences Survey” administered to a representative sample of the United States (US) population. The sample is composed of 3,000 respondents balanced on age, gender, and income to the extent possible. The survey was administered in December 2021, collecting information regarding respondents’ experiences with the COVID-19 illness and the COVID-19 inoculation as well as COVID-19 health experiences within respondents’ social circles. The survey also collected respondent socioeconomic information. Assuming all the responses represent a causal relationship between recorded deaths and the inoculations, I estimate that 308,000 people may have died from the COVID-19 inoculation in the US. Removing deaths that might have happened regardless of the inoculation yields an estimate of 294,000 fatalities. I also analyze the factors that influence the likelihoods of being inoculated, experiencing an adverse event, and knowing someone who was injured by the COVID-19 inoculation.

Keywords: COVID-19, Vaccine, Inoculation, Fatalities, Injuries

JEL Classification: I10, I18

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1. Introduction

Since the COVID-19 inoculation¹ program began in December 2020, the Vaccine Adverse Events Reporting System (VAERS) has received an enormous increase in the number of reported adverse events, including more than 21,000 fatalities and more than a million total adverse events (OpenVAERS, 2022).² VAERS is co-managed by the United States (US) Centers for Disease Control (CDC) and the Food and Drug Administration (FDA). When compared to previous years, the numbers of events reported in 2021 are astounding and troubling. Reported adverse events in 2021 number many multiples of events in previous years and exceed the sum of all adverse events for all vaccine types for all years since VAERS began collecting reports in 1990. While VAERS provides important information, reported events, whether it be a death or injury, are not necessarily caused by the inoculation in question. To date, the US government has attributed a total of nine deaths to COVID-19 inoculation. (CDC, 2022) On the other hand, not all adverse events are reported in VAERS.

In early January 2022 CDC Director, Rochelle Walensky, testified at a Senate hearing where she was asked by Senator Tuberville (R-Alabama) about the unusually large number of reported adverse events. Walensky responded by indicating that VAERS is:

“A mandatory system of any adverse event that happens after being vaccinated...So, if you get hit by a car, tragically, after getting vaccinated, that gets reported in the vaccine

¹ As noted by Kostoff *et al.* (2021) and others, the injected material in the Covid inoculations do not prevent infections nor transmission of coronavirus. Because the definition of a vaccine is that it prevents disease and the COVID-19 inoculation does not prevent COVID-19, I use the terms “inoculated” or “inoculation” rather than “vaccine” or “vaccination” in the remainder of this paper.

² A major chasm has opened between the numbers of adverse events reported by the official VAERS website and by the OpenVAERS website, respectively. OpenVAERS builds and maintains its own database using records periodically downloaded from VAERS itself. Apparently, VAERS has been systemically deleting records from its database (see <https://vaersanalysis.info/2021/06/10/are-vaers-records-being-deleted-every-week/>). This paper relies on the data supplied by OpenVAERS as well as from VAERS.

adverse reporting VAERS system³...So the vaccines are incredibly safe," she continued. "They protect us against Omicron; they protect us against Delta; they protect us against Covid. They don't protect us against every other form of mortality out there." (Moore, 2021)

Several studies suggest that rather than over-estimating fatalities and injuries resulting from vaccination, VAERS dramatically under-reports actual fatalities and injuries resulting from vaccination. For example, an evaluation by Pantazatos and Seligmann (2021) suggests that fatalities in the US from the COVID-19 inoculation could be as high 400,000. Similarly, analyses by Rose and Crawford (2021) and Kostoff *et al.* (2021) indicate that the COVID-19 inoculation fatalities could be in the hundreds of thousands. However, a limitation of these studies is that the researchers make assumptions about the number of deaths reported in VAERS that are caused by the COVID-19 inoculation as well as about the proportion of total adverse events that are reported. All three studies point to research indicating significant under-reporting in VAERS. Bloomenthal *et al.* (2021) indicate that VAERS under-reports acute allergic reactions to the mRNA COVID-19 vaccines by a factor of 50 to 123 times. Research by Pantazatos and Seligmann (2021) suggest under-reporting of fatalities by a factor of 20. Analysis by Lazarus *et al.* (2010) indicates that just 1% of all adverse events are reported in VAERS.

There are thus disparate views regarding the number of fatalities and injuries that may have resulted from the nationwide (and global) COVID-19 inoculation program. OpenVAERS (2022) reports more than 21,000 inoculation-associated fatalities. However, as of February 2022 government authorities have recognized nine fatalities to the COVID-19 inoculation. (CDC, 2022) On the other hand, other researchers point to the number of COVID-19 inoculation-caused

³ To my knowledge, there are no cases in the VAERS reporting system of someone getting hit by a car and it being reported as a "vaccine death."

fatalities that could be in the hundreds of thousands. There is an urgent need to resolve this discrepancy.

The purpose of the present paper is to examine potential fatalities and injuries from an online “COVID-19 Health Experiences Survey” of the US population. The sample is composed of 3,000 respondents balanced on age, gender, and income to the extent possible. The survey was administered between December 18 and December 23, 2021, collecting information on the respondents’ experiences with COVID-19 illness and the COVID-19 inoculation, as well as experiences with the COVID-19 illnesses and COVID-19 inoculation within respondents’ social circles. The survey also collected respondent economic and demographic information as well as information regarding respondent perceptions of COVID-19 policies such as lockdowns and mandatory vaccination.

As a prelude to the full analysis, I find that 35% of respondents indicated that they knew at least one person who had experienced a significant health problem due to the COVID-19 illness. One-hundred and fifty of these respondents indicated that the person they knew best within their social circles who had experienced a problem had died from/with COVID-19. I asked a similar question regarding whether respondents knew at least one person who experienced a significant health problem following inoculation. Twenty-four percent of respondents indicated that they knew at least one person who had experienced a severe health problem following COVID-19 inoculation. Of these respondents, 55 indicated that among the people they knew who had experienced a health issue following inoculation, the person they knew best had died. Using information from the survey combined with official CDC records on the number of people who died with COVID-19, I calculate an estimated number of people in the US who may have died from the COVID-19 inoculation. According to the CDC, 839,993 people

died with COVID-19 through December 24, 2022. (Worldometer, 2022). From this baseline, survey data indicates that as many as 308,000 people may have died as a result of COVID-19 inoculation when one assumes all recorded fatalities were caused by the inoculation. If fatalities that may have occurred regardless of inoculation are removed, estimated inoculation-related fatalities are about 294,000. As with any health intervention that entails risks and potential benefits, people need as much information as possible to make the best health decisions, and any treatments must be optional. The primary goal of this paper is to share new information about the risks of the COVID-19 inoculation that both citizens and policymakers can use to make important health and health policy decisions in a rational manner.

The next section offers a discussion of the mechanisms of injury from the COVID-19 inoculations. Section 3 presents a more detailed summary of CDC data on COVID-19 fatalities and reported adverse events from the COVID-19 inoculation. Section 4 presents the survey and associated data collected from the survey. In section 5, I present analysis that generates a population-wide estimate of the COVID-19 inoculation-associated fatalities. Section 6 offers an evaluation of the determinants of the likelihood of being inoculated, being injured from the inoculation, and knowing someone who was injured from inoculation. Section 7 concludes.

2. Mechanisms of Injury From Gene Therapeutic Vaccine Technologies

There is general agreement that the COVID-19 inoculation can cause significant injury/harm. The question, however, is how often such adverse events occur. The CDC and FDA acknowledge the potential for injury, but state that such events are very rare. The three COVID-19 inoculations that have received emergency use authorization from the FDA are Janssen (JNJ), Moderna, and Pfizer/Biontech. All three inoculations are gene therapeutic treatments that reprogram inoculants' cells to produce a component of the SARS-CoV-2 coronavirus, the spike

protein. In principle, when the spike protein is produced in the body, an immune response will occur, thereby building protection against coronavirus. While federal authorities, many scientists, and vaccine companies assert that most adverse events are mild and serious problems rarely occur, many scientists and researchers in immunology and microbiology have been trying to communicate with authorities to warn them of blood clotting, bleeding (Doctors for Covid Ethics, 2021a), inflammation, and damage to organs (Bansal *et al.*, 2021; Palmer and Bhakdi, 2021), and a range of other problems that can emerge following COVID-19 inoculation.

During the October 22, 2020 meeting of the Vaccines and Related Biological Products Advisory Committee, a presentation was given which listed a range of potential adverse events (Anderson, 2020). The following list of potential health problems is taken from that presentation and is coupled with adverse events and deaths as reported in OpenVAERS (2022) as of January 14, 2022

Table 1: FDA Safety Surveillance of COVID-19 Vaccines: Draft Working List of Possible Adverse Event Outcomes with VAERS Adverse Events/Deaths

Symptom	OpenVAERS Events/Deaths
• Guillain-Barré syndrome	• 2,114/36
• Acute disseminated Encephalomyelitis	• 155/5
• Transverse myelitis	• 379/3
• Encephalitis/myelitis/encephalomyelitis/ meningoencephalitis/meningitis/encephalopathy	• 1,775/182
• Convulsions/seizures	• 13,303/394
• Stroke	• 12,628/1,157
• Narcolepsy and cataplexy	• 254/5
• Anaphylaxis	• 44,302/165
• Acute myocardial infarction (heart attack)	• 3,801/1,134
• Myocarditis/pericarditis	• 16,301/188
• Autoimmune disease	• 1,261/24
• Deaths	• 21,852
• Pregnancy and birth outcomes	• 3,486/108
• Other acute demyelinating diseases	• 290/4
• Non-anaphylactic allergic reactions	• 1,973/3
• Thrombocytopenia	• 4,580/337
• Disseminated intravascular coagulation	• 195/61

• Venous thromboembolism	• 19,665/1,124
• Arthritis and arthralgia/joint pain	• 68,496/201
• Kawasaki disease	• 67/1
• Multisystem Inflammatory Syndrome in Children	• 646/47
• Vaccine enhanced disease	• None Reported

Sources: Anderson (2020) and the CDC.

The matching between what the FDA knew in advance about the potential adverse events from the COVID-19 inoculations and what is borne out in the VAERS data is consistent. Some authorities such as CDC Director Rochelle Walensky and Anthony Fauci, Director of the National Institute of Allergy and Infectious Diseases (NIAID) have stated publicly that serious adverse events are very rare and that the inoculations are safe and effective (Moore, 2022). On the other hand, researchers such as Kostoff *et al.* (2021), Rose and Crawford (2021), and Pantazatos and Seligmann (2021) use research-based assumptions about the degree of under-reporting in VAERS to estimate the number of deaths and other adverse events from the COVID-19 inoculations. According to their calculations, fatalities could be in the hundreds of thousands.

Very recently US Senator Ron Johnson (Johnson, 2022) submitted a letter to the Department of Defense (DOD) Secretary Loyd Austin to highlight troubling reports from three DOD medical whistleblower doctors (Drs. Samuel Sigoloff, Peter Chambers, and Theresa Long) about injuries to military personnel that are potentially related to the COVID-19 inoculation. Based on data from the Defense Medical Epidemiology Database (DMED), the following medical conditions were highlighted as having increased substantially in 2021 over the five previous five-year average:

- Hypertension - 2,181% increase
- Diseases of the nervous system - 1,048% increase
- Malignant neoplasms of esophagus – 894% increase
- Multiple sclerosis - 680% increase
- Malignant neoplasms of digestive organs - 624% increase
- Guillain-Barre syndrome - 551% increase
- Breast cancer - 487% increase

- Demyelinating disease - 487% increase
- Malignant neoplasms of thyroid and other endocrine glands - 474% increase
- Female infertility - 472% increase
- Pulmonary embolism - 468% increase
- Migraines - 452% increase
- Ovarian dysfunction - 437% increase
- Testicular cancer - 369% increase
- Tachycardia - 302% increase

The DOD investigations/inquiries are just beginning.

There is a growing body of research documenting actual injuries and the potential mechanisms of injury from this new type of vaccine technology. A list of over a thousand peer-reviewed studies on COVID-19 inoculation injuries and fatalities is published at the Informed Choice Australia (2022) website. Very recently, Seneff *et al.* (2022) articulated the mechanisms for how the mRNA inoculations inhibit innate immune suppression. A summary from the abstract is presented below:

“...we present the evidence that vaccination, unlike natural infection, induces a profound impairment in type I interferon signaling, which has diverse adverse consequences to human health. We explain the mechanism by which immune cells release into the circulation large quantities of exosomes containing spike protein along with critical microRNAs that induce a signaling response in recipient cells at distant sites. We also identify potential profound disturbances in regulatory control of protein synthesis and cancer surveillance. These disturbances are shown to have a potentially direct causal link to neurodegenerative disease, myocarditis, immune thrombocytopenia, Bell’s palsy, liver disease, impaired adaptive immunity, increased tumorigenesis, and DNA damage. We show evidence from adverse event reports in the VAERS database supporting our hypothesis. We believe a comprehensive risk/benefit assessment of the mRNA vaccines excludes them as positive contributors to public health, even in the context of the Covid pandemic.”

It is beyond the scope of the present study to offer a detailed discussion of the growing scientific research documenting the underlying mechanism of harm and the adverse events from the COVID-19 inoculation. For purposes of this study, it is sufficient to demonstrate that the FDA,

CDC, vaccine companies as well as many other scientists agree that severe adverse events and death can occur following COVID-19 inoculation.

The primary issue I attempt to address in the present study is to determine the number of people who experienced adverse events, including death. The question is relevant to assessing the risk/benefit trade-off in taking the COVID-19 inoculation as well as the risks and benefits of mandating such a medical intervention. Importantly, the risk of injury from the inoculation repeats and potentially compounds with every booster shot. Given that government officials around the globe are emphasizing that regular boosters may be needed, the risks are repeated; the injuries and fatalities we identify in this survey and in other studies will compound with each round of boosters. Before presenting the survey and the associated data, it is important to review summary information on COVID-19 fatalities and COVID-19 inoculation adverse events available from the CDC.

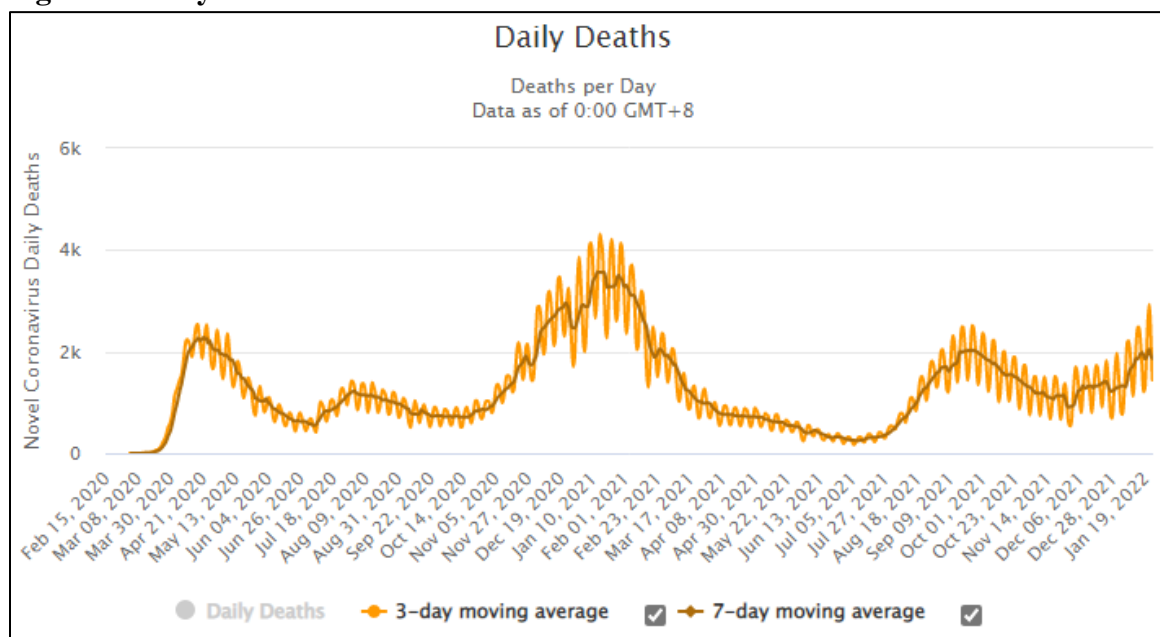
3. CDC Data on COVID-19 Fatalities and COVID-19 Vaccine Adverse Events

In this section, I present information and data on COVID-19 fatalities and COVID-19 inoculation adverse events as reported by the CDC and VAERS, respectively. This information will be used to make comparisons with the survey data as well as to draw inferences about COVID-19 inoculation-related fatalities identified in the survey to the general US population. Consider first the CDC-reported fatality data.

On March 24, 2020, the CDC substantially altered how it records cause of death for COVID-19, but only for COVID-19 and not of other causes. As discussed in Ealy *et al.* (2020), this change was enacted without peer review or consultation with the public. Essentially, the change resulted in the counting of COVID-19 fatalities as “died from” to “died with”. According to the CDC, of all the COVID-19 deaths reported under the new definition, COVID-19 is the

only cause mentioned in just 6% of cases. That is, 94% of the recorded COVID-19 fatalities had one or more comorbidities. The change in definition made it impossible to make comparisons with other causes of death and very difficult to determine what the number of deaths would have been recorded had the old definition been used, which had been in place for 17 years without major problems or concerns. For purposes of the present study, CDC data on COVID-19 fatalities based on the new definition is, nevertheless, useful in obtaining an estimate of vaccine-associated fatalities. Survey respondents will indicate that a person they knew died of (or with) COVID-19 because medical authorities are required to follow the CDC guidelines and thus will tell loved ones that the cause of death was COVID-19, regardless of comorbidities or other considerations. Thus, survey responses regarding COVID-19 fatalities should reflect the CDC definition and counts of COVID-19 fatalities. Total COVID-19 fatalities as reported by the CDC since the crisis began through December 24, 2021 was 839,993. (Worldometer, 2022). The graph in Figure 1 illustrates the evolution of reported fatalities over time.

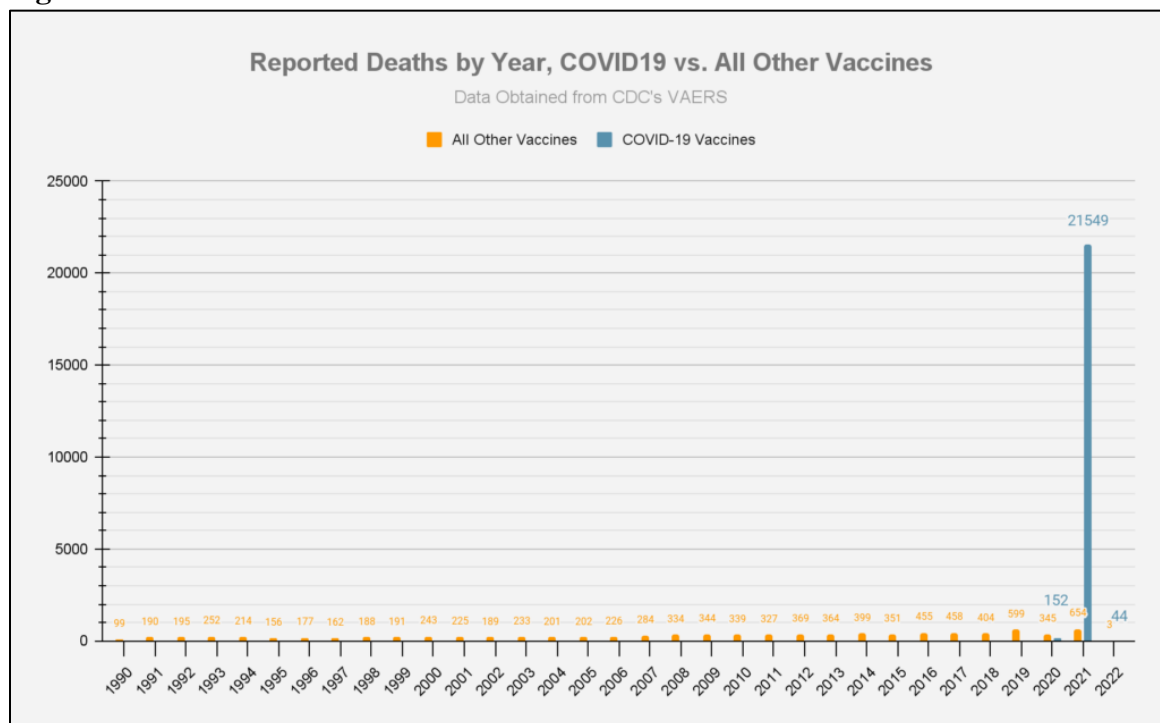
Figure 1: Daily COVID-19 Fatalities Over Time



Source: Worldometer (2022)

Turning to what publicly available data we have on COVID-19 inoculation adverse events, consider the Vaccine Adverse Events Reporting System (VAERS) (VAERS, 2022). Figures 1–3 below provide summaries of reported COVID-19 vaccine-associated fatalities from OpenVAERS (2022) from December 2020 through January 7, 2022.⁴ Figure 2 provides a summary of reported COVID-19 inoculated fatalities compared to all other reported vaccine fatalities since reporting began in 1990. While we cannot be certain that all fatalities reported over time are caused by vaccines, the massive increase that occurred in 2021 offers evidence that something has changed. Yet, to date federal authorities have only attributed nine fatalities to the COVID-19 inoculations. (CDC, 2022) Figure 2 shows that most reported fatalities occur shortly following the date of inoculation.

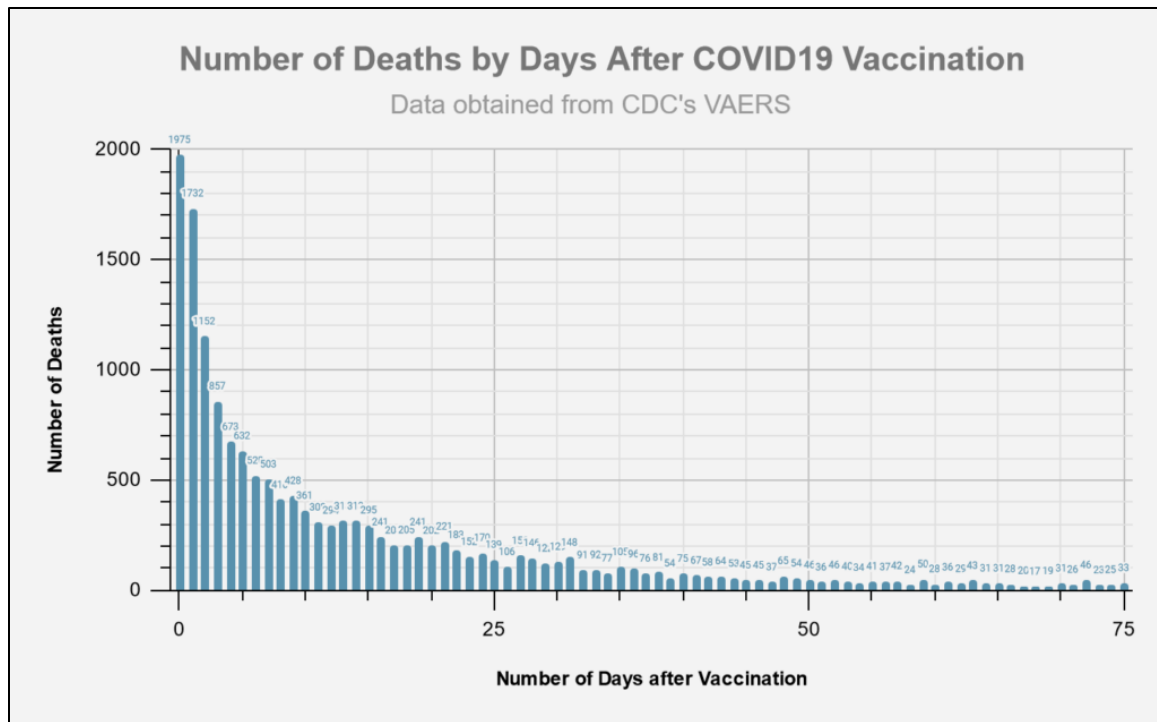
Figure 2: VAERS COVID-19 Vaccine Fatalities



Source: VAERS (2022)

Figure 2: Deaths by Days After COVID-19 Vaccination

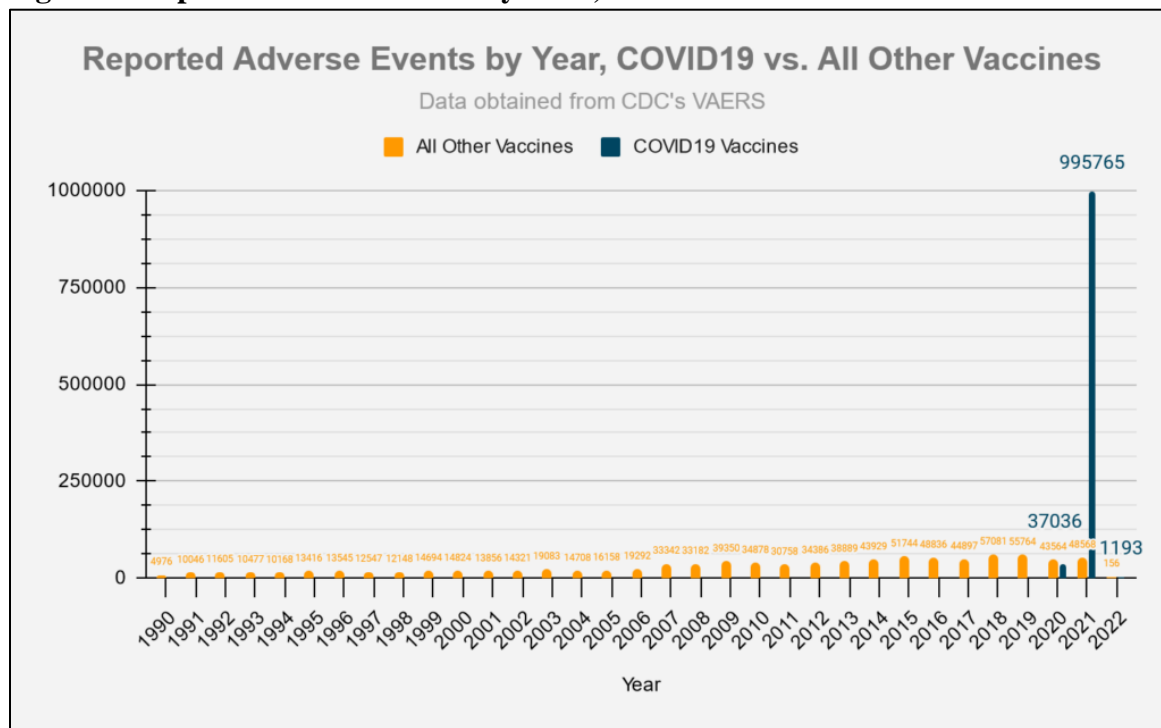
⁴ Open VAERS is a private organization that posts publicly available CDC/FDA data of injuries reported post-vaccination. Reports are not proof of causality.



Source: VAERS (2022)

Finally, Figure 3 shows that the number of reported adverse events for the COVID-19 inoculations is about one million, far exceeding the sum of previous reported events for all other vaccines since reporting began in 1990.

Figure 3: Reported Adverse Event by Year, COVID-19 vs. All Other Vaccination



Source: VAERS (2022)

A key element of the information presented above is the ratio of reported COVID-19 inoculation-associated fatalities to reported fatalities from the COVID-19 illness. This ratio is $\frac{21,549}{839,993} = 0.026$. However, the CDC eliminated a large number of adverse events. According to current VAERS, fatalities in the US states are 8,023. Based on current VAERS data, the ratio is $\frac{8,023}{839,993} = 0.0096$. As a baseline for comparison with the survey, if the CDC VAERS data accurately portray what is happening, then the ratio of COVID-19 vaccine fatalities to COVID-19 fatalities should be in the range of 0.009 to 0.026. If these data are accurate, the ratio obtained from a survey of 3,000 people should be a very small number (perhaps even zero) due to the relatively small number of reported deaths from COVID-19 inoculation. Next, we present the COVID-19 Health Experiences Survey and data.

4. National Survey of COVID-19 Health Experiences and Survey Data

The National Survey of COVID-19 Health Experiences was administered online between December 18 and 23, 2021. The survey instrument and recruitment protocol were approved by the Institutional Review Board (IRB) of the author's institution. The sample is nationally representative, obtained by Dynata, the world's largest first-party data platform.⁵ Tsai *et al.* (2018) summarize the advantages of the opt-in sampling approach where respondents are high quality, diverse, and have community norms of honesty and accuracy. The Dynata survey group is balanced on age, gender, and income to the extent possible. A pretest helped to finalize the survey design.

Before discussing the survey, it is necessary to acknowledge some the challenges and limitations associated with using a survey in the context of collecting COVID-19 health information, particularly for what has now become a very politicized topic. First, though a person may be offering truthful information, every person interprets events with some bias. For example, a respondent who self identifies as a Republican may offer a report that is different than a person who identifies as a Democrat. Each respondent has a unique perception based on history, beliefs, culture, family background, etc. As discussed later, I offer some analysis and evidence that this is the case with this survey.

Second, though a person may believe and report that someone they know died from the inoculation, that does not mean that the inoculation was the cause of death. For example, as shown in the summary statistics and in Appendix 3, a number of respondents indicated that a person they know had a heart attack after being inoculated. It is possible that the person had a heart attack that was unrelated to the inoculation. The coincident timing of the heart attack and the inoculation could be by chance.

⁵ See Shupp *et al.* (2020) for an example of using this type of online survey to examine health-related issues.

Here, I offer some evaluation to assess the degree to which reported adverse events was causally related to inoculation. Three commonly reported inoculation-related adverse events (and deaths) in the survey are heart attacks, strokes/blood clots. The average age of a person in the dataset who experienced a heart attack or stroke/blood clot after being inoculated is about 40 years of age⁶, and the average age of death is 48. The incidence of heart attacks (myocardial infarction) for people of age 48 is about 17 per 100,000, and the incidence of strokes and blood clots is very low—near zero for this age group. (CDC Wonder, 2022) Heart attacks, strokes and blood clots are also commonly reported causes of death in the VAERS data. From the survey, about 48% of respondents reported being inoculated. I assume the same proportion applies to those in respondents' social circles. The estimated number of people in respondents' social circles is about 30,000.⁷ To calculate an estimate of the number of fatalities that might have occurred regardless of inoculation status, I multiple 17 by the proportion of people who are inoculated (0.48) and the proportion of people in social circles out of 100,000 (0.30). The estimated number of fatalities that might have occurred regardless of inoculation is $17 \times 0.48 \times 0.3 = 2.44$ people. This figure will be used later as part of the evaluation.

The survey also asks for information about the size of one's social circle where the respondent would know a person well enough to be aware health issues, the average of which is 10 people. With a survey of 3,000, the sum of all the people in the respondents' social networks is about 30,000. With a death rate of 26 per 100,000 for these health conditions for the 40-year-old age group, in this survey about 7.8 of the deaths would have occurred regardless of inoculation. This information will be used in the evaluation later. I now present the survey.

⁶ The average age of a stroke or first heart attack in the general population is over 65 years old.

⁷ After removing outliers where respondents indicated that they more than 400 people well enough to be aware of significant health changes, the average size of social circles is about 10 people. Ten people multiplied by the number of respondents (3,000) yields 30,000.

The survey is composed of five sets of questions: 1) Questions about respondents' experiences with COVID-19 illness; 2) Questions about respondents' experiences with COVID-19 inoculation; 3) Questions about experiences with COVID-19 illness in respondents' social circles; 4) Questions about experiences with COVID-19 inoculation in respondents' social circles; and 5) questions to obtain economic and demographic information, as well as views on a range of COVID-19 policies such as lockdowns and vaccine mandates. This last set of questions gather standard socioeconomic information about the respondent (gender, age, race, income, education, and political affiliation). The survey is available in Appendix 1.

While the experiences of respondents regarding the COVID-19 illness or the COVID-19 inoculations offer useful information, such information is incomplete. For example, if a potential respondent died due to COVID-19 or the COVID-19 inoculation, that person could not participate in the survey. Similarly, if someone is very ill due to COVID-19 or the COVID-19 inoculation, then that person is less likely to participate in this type of survey. While all sets of questions offer useful data, the most important information comes from the questions about the experiences of those within respondents' social circles. COVID-19 illness or COVID-19 inoculation health experiences within social circles, whether a fatality or severe health problem, can be reported by respondents. Below, I summarize all the survey data, but I focus attention on questions regarding the health experiences of those in respondents' social circles.

Survey Data

Table 2 offers a summary of questions answered of all respondents; Table 3 summarizes findings for those who had been sick with COVID-19; Table 4 summarizes data for respondents who had been inoculated; Table 5 presents summary information for those who reported that they knew at least one person in their social circles who had experienced a significant health

problem as a result of the COVID-19 illness; and Table 6 presents summary statistics for respondents who knew at least one person in their social circles who had experienced a significant health problem following inoculation.

Upon inspection of the survey (see Appendix 1), the reader will see that the questions regarding experiences with both the COVID-19 illness and the COVID-19 vaccine are open ended, designed to allow respondents to offer their assessment without any leading information. The responses are translated based on the science regarding the COVID-19 illness and the COVID-19 inoculation. For example, it may be that the respondent indicated that a person in their social circle died from a stroke or a heart attack post-inoculation. Given that heart attacks and stroke are listed as potential vaccine side effects, it is reasonable to think that such events were caused by the inoculation and not a random occurrence. In a number of cases, respondents indicated that a person in their social circles died shortly after inoculation but did not provide detail regarding the fatality. In these cases, is it not possible to know whether those persons died of other causes or the deaths were caused by the inoculation, except to trust the judgment of respondents. However, as discussed earlier, the average age of the those who are reported as having experienced heart attacks, strokes, and blood clots is about 40 years of age—much younger than occurrences in the general population, where the average age is over 65. Finally, from the earlier discussion about the death rates for the 40-year-old age group, it is possible to reduce the number of fatalities that might have occurred in the absence of inoculation and recalculate estimated fatalities from inoculation.

Consider first Tables 2, 3, and 4, which report summary statistics for the questions about the COVID-19 health experiences of respondents. Table 2 contains responses to questions that all respondents answered. Table 3 provides responses from those who indicated they were ill

from COVID-19, and Table 4 reports responses to questions for those who were inoculated. There were 3,000 fully completed surveys after removing the 216 respondents (6.5%) who opted out of the survey by not consenting to participate and 105 incomplete surveys (3.2%).⁸ As with all surveys, potential bias can be introduced when some participants choose not to participate. However, with about 10% opting out of or not completing the survey, any bias that may be introduced is likely to be minor. Of those who agreed to participate, 25% reported having had COVID-19, about 56% of which were diagnosed via the PCR test or rapid test. Thirty-two percent indicated that the primary way they were diagnosed was via symptoms. Three percent indicated that they were ill from COVID-19 in 2019, 23% indicated that they had contracted COVID-19 in 2020, and 75% indicated they had contracted COVID-19 in 2021. About 83% indicated that they had fully recovered within one to three weeks, but 17% indicated that it took four weeks or more to recover. Twenty-eight percent of respondents indicated that they had lingering health issues in the wake of COVID-19; most said they had lingering respiratory/breathing or taste/smell issues that are likely to resolve over time. However, about 7% indicated that they had experienced more severe health issues as a result of COVID-19.

⁸ Thirty additional respondents did not answer the question about race. In portions of the evaluation where race is considered, there are 2,970 observations.

Table 2: Summary Statistics - All Respondents

Survey

Question #	Question	Obs	Min	Max	Mean	Std. Dev.
Q1	Q1.- Have you had COVID-19? (yes=1, no=0)	3000	0	1	0.250	0.433
Q10	Q10.- Alternative treatments are ineffective (yes=1, no=0)	3000	0	1	0.267	0.443
	Q10.- Alternative treatments are effective (yes=1, no=0)	3000	0	1	0.286	0.452
	Q10.- I do not know if alternative treatments are effective (yes=1, no=0)	3000	0	1	0.447	0.497
Q11	Q11.- Have you been inoculated against COVID-19? (yes=1, no=0)	3000	0	1	0.476	0.500
Q18	Q18.- Social circle with health issues after COVID-19 infection (yes=1, no=0)	3000	0	1	0.351	0.477
Q22	Q22.- Social circle with health issues after COVID-19 vaccine (yes=1, no=0)	3000	0	1	0.236	0.425
Q26	Q26.- Age between 18-24 (yes=1, no=0)	3000	0	1	0.173	0.378
	Q26.- Age between 25-29 (yes=1, no=0)	3000	0	1	0.108	0.310
	Q26.- Age between 30-34 (yes=1, no=0)	3000	0	1	0.102	0.302
	Q26.- Age between 35-39 (yes=1, no=0)	3000	0	1	0.091	0.288
	Q26.- Age between 40-44 (yes=1, no=0)	3000	0	1	0.086	0.281
	Q26.- Age between 45-49 (yes=1, no=0)	3000	0	1	0.087	0.281
	Q26.- Age between 50-54 (yes=1, no=0)	3000	0	1	0.073	0.261
	Q26.- Age between 55-59 (yes=1, no=0)	3000	0	1	0.085	0.278
	Q26.- Age between 60-64 (yes=1, no=0)	3000	0	1	0.064	0.245
	Q26.- Age between 65-69 (yes=1, no=0)	3000	0	1	0.058	0.233
	Q26.- Age between 70-74 (yes=1, no=0)	3000	0	1	0.045	0.207
	Q26.- Age between 75-89 (yes=1, no=0)	3000	0	1	0.022	0.147
	Q26.- Age between 80-84 (yes=1, no=0)	3000	0	1	0.004	0.063
	Q26.- Age between 85-89 (yes=1, no=0)	3000	0	1	0.001	0.026
	Q26.- Age 90 or more (yes=1, no=0)	3000	0	1	0.002	0.045
	Q27.- Less than high school (yes=1, no=0)	3000	0	1	0.045	0.207
	Q27.- High school/GED (yes=1, no=0)	3000	0	1	0.282	0.450
	Q27.- Some college (yes=1, no=0)	3000	0	1	0.240	0.427
Q27	Q27.- 2-year college degree (yes=1, no=0)	3000	0	1	0.111	0.315
	Q27.- 4-year college degree (yes=1, no=0)	3000	0	1	0.182	0.386
	Q27.- Master's degree (yes=1, no=0)	3000	0	1	0.095	0.293
	Q27.- Doctoral degree (yes=1, no=0)	3000	0	1	0.019	0.138
	Q27.- Professional degree (JD, MD) (yes=1, no=0)	3000	0	1	0.027	0.161

Q28	Q28.- White/Caucasian (yes=1, no=0)	2970	0	1	0.638	0.481
	Q28.- African American (yes=1, no=0)	2970	0	1	0.175	0.380
	Q28.- Hispanic (yes=1, no=0)	2970	0	1	0.084	0.277
	Q28.- Asian (yes=1, no=0)	2970	0	1	0.038	0.192
	Q28.- Native American/Pacific Islander (yes=1, no=0)	2970	0	1	0.029	0.168
	Q28.- Other/more than one race (yes=1, no=0)	2970	0	1	0.036	0.186
Q29	Q29.- Gender (yes=1, no=0)	2840	0	1	0.458	0.498
Q30	Q30.- Urban (yes=1, no=0)	3000	0	1	0.321	0.467
	Q30.- Suburban (yes=1, no=0)	3000	0	1	0.459	0.498
	Q30.- Rural (yes=1, no=0)	3000	0	1	0.220	0.414
Q31	Q31.- Less than \$10,000 (yes=1, no=0)	3000	0	1	0.126	0.332
	Q31.- \$10,000 - \$14,999 (yes=1, no=0)	3000	0	1	0.081	0.273
	Q31.- \$15,000 - \$19,999 (yes=1, no=0)	3000	0	1	0.061	0.240
	Q31.- \$20,000 - \$24,999 (yes=1, no=0)	3000	0	1	0.075	0.263
	Q31.- \$25,000 - \$34,999 (yes=1, no=0)	3000	0	1	0.100	0.300
	Q31.- \$35,000 - \$49,999 (yes=1, no=0)	3000	0	1	0.117	0.322
	Q31.- \$50,000 - \$74,999 (yes=1, no=0)	3000	0	1	0.153	0.360
	Q31.- \$75,000 - \$99,999 (yes=1, no=0)	3000	0	1	0.108	0.310
	Q31.- \$100,000 - \$149,999 (yes=1, no=0)	3000	0	1	0.103	0.304
	Q31.- \$150,000 - \$199,999 (yes=1, no=0)	3000	0	1	0.041	0.199
	Q31.- \$200,000 or more (yes=1, no=0)	3000	0	1	0.035	0.184
Q38	Q38. Mainstream News Sources (yes=1, no=0)	3000	0	1	0.570	0.495
	Q38. Alternative News Sources (yes=1, no=0)	3000	0	1	0.362	0.481
	Q38. Peer Reviewed Scientific Literature (yes=1, no=0)	3000	0	1	0.194	0.396
	Q38. Official Government Sources Such as the U.S. (CDC) (yes=1, no=0)	3000	0	1	0.371	0.483
Q39	Q39. Democrat (yes=1, no=0)	3000	0	1	0.333	0.471
	Q39. Republican (yes=1, no=0)	3000	0	1	0.302	0.459
	Q39. Independent/Other (yes=1, no=0)	3000	0	1	0.365	0.482
Q32	Q32. Social circle - # of people the respondent knows who would have a significant health condition (yes=1, no=0)	2518	0	400	10.092	21.186
	Average age	3000	21	90	42.853	16.804
	Average income	3000	10000	200000	59048.9	50814.5

About 27% of respondents who reported a history of COVID-19 indicated that they used medication as treatment for COVID-19, and 19% indicated that they used alternative medications such as ivermectin and hydroxychloroquine (HCQ) to treat the illness.⁹ Among those who used alternative medications, 77% indicated that they believe the alternative medications helped them recover. Of those who took alternative treatments, only one indicated that he/she had experienced long-term negative consequences from COVID-19.

⁹ See <https://c19early.com/> for a real-time analysis of studies on early treatment including ivermectin and HCQ. In many studies and peer reviews a large majority indicate positive effects. See for example, Luce *et al.* (2022)

Table 3 - Summary Statistics for Respondents Who Were Sick With COVID-19

Survey

Question #	Question	Obs	Min	Max	Mean	Std. Dev.
Q2	PCR Test (yes=1, no=0)	750	0	1	0.223	0.416
	Rapid Test (yes=1, no=0)	750	0	1	0.236	0.425
	COVID-19 Symptoms (yes=1, no=0)	750	0	1	0.320	0.467
Q3	Year of COVID-19 infection	583	2019	2021	2020.7	0.488
Q4	Less than a week (yes=1, no=0)	750	0	1	0.247	0.431
	Less than two weeks (yes=1, no=0)	750	0	1	0.360	0.480
	Less than three weeks (yes=1, no=0)	750	0	1	0.217	0.413
	Four weeks or more (yes=1, no=0)	750	0	1	0.176	0.381
Q5	Lingering health issues after COVID-19 infection (yes=1, no=0)	750	0	1	0.284	0.451
	Severe lingering health issues after COVID-19 infection (yes=1, no=0)	188	0	1	0.931	0.254
	Not severe lingering health issues after COVID-19 infection (yes=1, no=0)	188	0	1	0.069	0.254
Q6	Medication as treatment for COVID-19 (yes=1, no=0)	750	0	1	0.271	0.445
Q7	Use of alternative medication (yes=1, no=0)	750	0	1	0.189	0.392
Q8	Hydroxychloroquine (yes=1, no=0)	142	0	1	0.542	0.500
	Ivermectin (yes=1, no=0)	142	0	1	0.317	0.467
	Other alternative medication (yes=1, no=0)	142	0	1	0.141	0.349
Q9	Did the alternative medication help you to recover? (yes=1, no=0)	142	0	1	0.761	0.428

About 48% of the sample indicated that they had been inoculated, which is significantly less than the official statistics on inoculation rates, which indicate that 76% of the US population has received at least one dose (USAFacts, 2022). Of those who indicated that they have been inoculated, 18% indicated that they had contracted COVID-19 before they were inoculated, 12% indicated that they had contracted COVID-19 after inoculation, and 70% indicated that they had not yet been ill from COVID-19. Summary statistics also include information about those who had received the first, second, and booster doses from the Janssen, Moderna, and Pfizer vaccines. However, accurate information on the inoculation options was not collected for almost half of the sample due to a problem with the survey.¹⁰

¹⁰ The problem was related to forcing choice on that question. The issue was identified and resolved about half-way through the survey. This is the only question on the survey that was affected.

Table 4: Summary Statistics for Respondents Who Experienced Issue With Covid-Inoculation

Survey Question #	Question	Obs	Min	Max	Mean	Std. Dev.
Q12	The COVID-19 infection occurred before the inoculation (yes=1, no=0)	1429	0	1	0.178	0.383
	The COVID-19 infection occurred after the inoculation (yes=1, no=0)	1429	0	1	0.127	0.333
	I have not had COVID-19 (yes=1, no=0)	1429	0	1	0.694	0.461
Q13	1st dose Pfizer (yes=1, no=0)	1053	0	1	0.345	0.476
	2nd dose Pfizer (yes=1, no=0)	1053	0	1	0.383	0.486
	3rd dose Pfizer (yes=1, no=0)	1053	0	1	0.190	0.392
	1st dose Moderna (yes=1, no=0)	963	0	1	0.279	0.449
	2nd dose Moderna (yes=1, no=0)	963	0	1	0.349	0.477
	3rd dose Moderna (yes=1, no=0)	963	0	1	0.173	0.379
	1st dose Johnson & Johnson (yes=1, no=0)	687	0	1	0.143	0.350
	2nd dose Johnson & Johnson (yes=1, no=0)	687	0	1	0.058	0.234
	3rd dose Johnson & Johnson (yes=1, no=0)	687	0	1	0.036	0.187
	1st dose I do not remember (yes=1, no=0)	619	0	1	0.053	0.225
	2nd dose I do not remember (yes=1, no=0)	619	0	1	0.065	0.246
	3rd dose I do not remember (yes=1, no=0)	619	0	1	0.042	0.201
Q14	Health issues after the vaccine (yes=1, no=0)	1429	0	1	0.160	0.367
	Severe health issues after the vaccine (yes=1, no=0)	179	0	1	0.151	0.359
	Less severe health issues after the vaccine (yes=1, no=0)	179	0	1	0.849	0.359
Q15	1st dose - post vaccination problems lasted 0-3 Days (yes=1, no=0)	229	0	1	0.624	0.485
	1st dose - post vaccination problems lasted 4-30 Days (yes=1, no=0)	229	0	1	0.236	0.425
	1st dose - post vaccination problems lasted 30+ Days (yes=1, no=0)	229	0	1	0.231	0.423
	2nd dose - post vaccination problems lasted 0-3 Days (yes=1, no=0)	229	0	1	0.467	0.500
	2nd dose - post vaccination problems lasted 4-30 Days (yes=1, no=0)	229	0	1	0.354	0.479
	2nd dose - post vaccination problems lasted 30+ Days (yes=1, no=0)	229	0	1	0.253	0.436
	3rd dose - post vaccination problems lasted 0-3 Days (yes=1, no=0)	229	0	1	0.563	0.497
	3rd dose - post vaccination problems lasted 4-30 Days (yes=1, no=0)	229	0	1	0.175	0.381
	3rd dose - post vaccination problems lasted 30+ Days (yes=1, no=0)	229	0	1	0.310	0.464

Q16	Condition reported to a doctor (yes=1, no=0)	229	0	1	0.445	0.498
Q17	The health event was reported to the CDC Adverse Event Reporting System (yes=1, no=0)	102	0	1	0.167	0.375
	The health event was not reported to the CDC Adverse Event Reporting System (yes=1, no=0)	102	0	1	0.490	0.502
	I do not know if the health event was reported to the CDC Adverse Event Reporting System (yes=1, no=0)	102	0	1	0.343	0.477

Of those who indicated that they had been inoculated, 16% indicated that they had experienced a health problem following inoculation. The full set of respondent comments describing the nature of the health issues is available from the author upon request. A variety of issues were reported, including three blood clots (including a pulmonary embolism), two neurological problems, seven heart-related problems such as tachycardia, heart palpitations, a heart irregularity, and a heart attack. In 45% of the cases, the condition was reported to a doctor and among those, 49% believe the adverse event was reported to VAERS.

Thus far, I have summarized the COVID-19 health experiences of respondents, which offer very useful information. About 1% of inoculated respondents experienced a potentially life-threatening or life-shortening adverse event. However, we also know that these reports represent only a partial picture. Table 5 offers a summary of information on the health experiences of those in respondents' social circles who experienced significant health problems after contracting COVID-19. Thirty-five percent of respondents reported that they knew at least one person in their social circles who had experienced significant health problems after they had been ill from COVID-19. In many cases, respondents reported something that might be characterized as “long covid” or continuing respiratory problems. However, 150 people (15%) reported that the person they knew best died from/with COVID-19. The average age of the person who had experienced the problem was 43, and the age distribution is reported in Table 5. Of those who reported knowing at least one person who had experienced a problem, 39% reporting knowing just one person, 37% two people, 16% three people, and 9% more than three people. The survey asks respondents to describe the health condition of the person they know best. A word-cloud generated from respondent comments regarding the nature of problems is presented in Appendix 2, and the full set of respondent comments are also available in Appendix 2. The most common

words used to describe problems were breathing, covid, taste, smell, died, death, problems, issues, and fever.

Table 5: Summary Statistics for COVID-19 Problems in Social Circles

Survey Question #	Question	Obs	Min	Max	Mean	Std. Dev.
Q19	One person had a health issue after the COVID-19 infection (yes=1, no=0)	1052	0	1	0.388	0.487
	Two people had a health issue after the COVID-19 infection (yes=1, no=0)	1052	0	1	0.365	0.482
	Three people had a health issue after the COVID-19 infection (yes=1, no=0)	1052	0	1	0.155	0.362
	More than three people had a health issue after the COVID-19 infection (yes=1, no=0)	1052	0	1	0.092	0.289
Q20	Social circle - death after COVID-19 (yes=1, no=0)	1009	0	1	0.149	0.356
	Social circle - severe issues after COVID-19 (yes=1, no=0)	1009	0	1	0.349	0.477
	Social circle - less severe issues after COVID-19 (yes=1, no=0)	1009	0	1	0.509	0.500
Q21	Age under 18 (yes=1, no=0)	1052	0	1	0.050	0.219
	Age between 18-24 (yes=1, no=0)	1052	0	1	0.127	0.334
	Age between 25-29 (yes=1, no=0)	1052	0	1	0.111	0.315
	Age between 30-34 (yes=1, no=0)	1052	0	1	0.088	0.284
	Age between 35-39 (yes=1, no=0)	1052	0	1	0.106	0.307
	Age between 40-44 (yes=1, no=0)	1052	0	1	0.103	0.304
	Age between 45-49 (yes=1, no=0)	1052	0	1	0.063	0.243
	Age between 50-54 (yes=1, no=0)	1052	0	1	0.088	0.284
	Age between 55-59 (yes=1, no=0)	1052	0	1	0.069	0.254
	Age between 60-64 (yes=1, no=0)	1052	0	1	0.061	0.239
	Age between 65-69 (yes=1, no=0)	1052	0	1	0.046	0.209
	Age between 70-74 (yes=1, no=0)	1052	0	1	0.038	0.191
	Age between 75-89 (yes=1, no=0)	1052	0	1	0.019	0.137
	Age between 80-84 (yes=1, no=0)	1052	0	1	0.014	0.119
	Age between 85-89 (yes=1, no=0)	1052	0	1	0.008	0.087
	Age 90 or more (yes=1, no=0)	1052	0	1	0.009	0.092
	Average age of people with after COVID-19 issues	1052	18	90	42.761	17.769

Turning to questions regarding health problems emerging in social circles after COVID-19 inoculation (see Table 6), about 24% of respondents indicated that they knew at least one person in their social circles who had experienced a significant health problem after inoculation. Fifty-five respondents reported that the person they knew best who had experienced an inoculation-related problem had died. The average age of the person who had experienced the problem was 39. Of those who reported knowing at least one person who had experienced a problem, 42% reporting knowing just one person, 35% two people, 13% three people, and 10% more than three people. The survey asks respondents to describe the health condition of the person they know best who had experienced a problem. Reported were 55 deaths, 40 heart-related problems, 24 cases of blood clots or strokes, a variety of neurological problems, allergic reactions, COVID-19, and other illnesses. Three respondents indicated that they knew someone who had caught COVID-19 after inoculation and died. A word-cloud generated from respondent comments regarding the nature of problems are presented in Appendix 3 and the full set of comments are also available in Appendix 3. The most common words used to describe health problems after inoculation are heart, covid, died, fever, blood, sick, breathing, problems, and vaccine.

Table 6: Summary Statistics for COVID-19 Inoculation Problems in Social Circles

Survey Question #	Question	Obs	Min	Max	Mean	Std. Dev.
Q23	One person had health issues after COVID-19 infection (yes=1, no=0)	709	0	1	0.422	0.494
	Two people had health issues after COVID-19 infection (yes=1, no=0)	709	0	1	0.346	0.476
	Three people had health issues after COVID-19 infection (yes=1, no=0)	709	0	1	0.138	0.345
	More than three people had health issues after COVID-19 infection (yes=1, no=0)	709	0	1	0.094	0.293
Q24	Death after the vaccine (yes=1, no=0)	661	0	1	0.083	0.276
	Severe health condition after the vaccine (yes=1, no=0)	660	0	1	0.297	0.457
	Less severe health condition after the vaccine (yes=1, no=0)	660	0	1	0.626	0.484
	Heart condition after the vaccine (yes=1, no=0)	660	0	1	0.061	0.239
	Blood condition after the vaccine (yes=1, no=0)	660	0	1	0.036	0.187
	Nervous condition after the vaccine (yes=1, no=0)	660	0	1	0.023	0.149
	Covid related conditions after the vaccine (yes=1, no=0)	660	0	1	0.064	0.244
Q25	Age under 18 (yes=1, no=0)	709	0	1	0.054	0.225
	Age between 18-24 (yes=1, no=0)	709	0	1	0.155	0.362
	Age between 25-29 (yes=1, no=0)	709	0	1	0.135	0.342
	Age between 30-34 (yes=1, no=0)	709	0	1	0.126	0.332
	Age between 35-39 (yes=1, no=0)	709	0	1	0.113	0.317
	Age between 40-44 (yes=1, no=0)	709	0	1	0.097	0.297
	Age between 45-49 (yes=1, no=0)	709	0	1	0.072	0.259
	Age between 50-54 (yes=1, no=0)	709	0	1	0.047	0.211
	Age between 55-59 (yes=1, no=0)	709	0	1	0.056	0.231
	Age between 60-64 (yes=1, no=0)	709	0	1	0.041	0.198
	Age between 65-69 (yes=1, no=0)	709	0	1	0.034	0.181
	Age between 70-74 (yes=1, no=0)	709	0	1	0.037	0.188
	Age between 75-89 (yes=1, no=0)	709	0	1	0.016	0.124
	Age between 80-84 (yes=1, no=0)	709	0	1	0.010	0.099
	Age between 85-89 (yes=1, no=0)	709	0	1	0.001	0.038
	Age 90 or more (yes=1, no=0)	709	0	1	0.007	0.084
	Average age	709	18	90	39.381	16.800

While the reported health impacts from COVID-19 and the COVID-19 inoculation offer important information, a primary objective of this study is to estimate the number of inoculation-induced fatalities that may have occurred in the US population. Below, I discuss the method used to obtain an estimate of the population-wide COVID-19 inoculation-related fatalities using the survey data in combination with CDC data on COVID-19 fatalities.

5. Population-wide Estimate of COVID-19 Inoculation-Associated Fatalities

In this section of the paper, I propose an approach for estimating the number of COVID-19 inoculation-related fatalities since the rollout of the COVID-19 inoculation program in the US. The discussion begins with a review of the CDC data on COVID-19 fatalities.

CDC Data COVID-19 Fatalities and VAERS Data on Vaccine-associated Fatalities

As presented earlier, according to the CDC, reported vaccine-associated fatalities from VAERS in 2021 for the US states and the District of Columbia was 8,023 in 2021. CDC data also show 839,993 reported fatalities attributed to COVID-19 since the crisis began. The ratio of reported vaccine-associated fatalities to reported COVID-19 fatalities is $\frac{8,023}{839,993} = 0.0096$. The CDC notes that all deaths reported in VAERS are not necessarily caused by the vaccines. To date, the CDC has attributed nine fatalities to COVID-19 inoculations. (CDC, 2022) The CDC also acknowledges that not all vaccine adverse events are necessarily reported in VAERS.

Data on COVID-19 Fatalities and Inoculation-related Fatalities Reported in an Online Survey of the US Population

In the survey, 24% of respondents indicated yes to the following question:

Has anyone in your social circles (family, friends, church, work colleagues, social networks, etc.) experienced a significant health problem after they received the Covid vaccination?

In a follow-up question, respondents were asked:

Of the people you know who experienced a health problem after being vaccinated, think about the one you know BEST. Please describe the health condition experienced by that person.

Respondents reported a range of adverse events, including heart attacks, blood clots and strokes, neurological problems, allergic reactions, and so on. Responses also indicated that 55 people died following inoculation. In many cases, the explanations offered are consistent with the previously outlined potential mechanisms of harm from the inoculation, such as heart attack, blood clot, or stroke. Appendix 3 provides respondent descriptions of these impacts in a word-cloud along with the full set of comments.

The survey also included parallel questions about significant harm from the COVID-19 illness:

Has anyone in your social circles (family, friends, church, work colleagues, social networks, etc.) experienced a significant health problem after they had been ill from Covid (but not from the vaccine)?

Of the people you know who experienced a health problem after being sick from Covid (but not from the vaccine), think about the one you know BEST. Please describe the health condition experienced by that person.

Thirty-five percent of respondents indicated that they knew someone who had experienced significant health problems from COVID-19. Respondents indicated that they knew of 150 of people who had died from/with COVID-19. Respondent descriptions are provided in a word-cloud (Appendix 2) with the full set of respondent comments available from the author upon request. From these data, the ratio of COVID-19 vaccine deaths to COVID-19 illness deaths of the people respondents knew best who had problems is: $\frac{55}{150} = 0.3667$. I begin this section of the evaluation under the assumption that all the reported inoculation-related fatalities are caused by the inoculation. This assumption will be relaxed in subsequent analysis.

Some additional discussion about the reported fatalities is in order. First, consistency in the way deaths are counted across the COVID-19 illness and the COVID-19 inoculation

categories is important. The survey poses questions about the person the respondent knows best who has experienced a health problem. Sometimes the respondent discussed more than one person. In those cases where the respondent reported multiple deaths or health problems, only one death per respondent was counted across both groups. In some cases, a death associated with the inoculation was reported as the person dying from COVID-19 despite being vaccinated. This occurred in both categories. When the death was reported as a COVID-19 illness death, I counted that death as being caused by COVID-19. When the death was reported as an inoculation-related death, I counted that death as a result of inoculation. In terms of the ratio of inoculation-related fatalities to COVID-19 illness fatalities, this approach roughly cancels out as both the numerator and denominator of the ratio are affected. In one case, it was reported that a pregnant mother lost a baby; this was counted as an inoculation-related fatality. In both the COVID-19 illness and the COVID-19 inoculation fatality groups, there was a reported case of a person contracting cancer and dying. A decision was made to leave the two deaths in the dataset, one for the COVID-19 illness group and one for the COVID-19 inoculation group. An argument can be made that in both cases the emergence of cancer was the result of a weakened immune system. (Doctors for Covid Ethics, 2021; Seneff *et al.*, 2022) Again, this decision does not change the ratio by much because both the numerator and denominator are affected. In summary, where judgments had to be made about the counting of fatalities, consistency in treatment across the two groups was a priority.

Comparison of CDC Reporting With Online Survey Results

The initial comparison of the ratio of COVID-19 inoculation-associated deaths to fatalities attributed to COVID-19 reveal a significant difference: The ratio from the survey is much higher than the CDC ratio. If the CDC data are accurate, then the survey should only have

a very small number of reported inoculation-related fatalities, perhaps none. However, the survey indicates a much higher ratio.

$$\text{CDC Ratio} = 0.0096$$

$$\text{Survey Ratio} = 0.3667$$

To offer a more formal evaluation, I test the following null hypothesis (H_0) that the true ratio, X , is equal to the CDC ratio, which is in turn equal to the survey ratio:

$$\text{True Ratio (X)} = \text{CDC Ratio} = \text{Survey Ratio}$$

The alternative hypothesis H_a is that the survey ratio is greater than the CDC ratio:

$$\text{True Ratio (X)} = \text{CDC Ratio} < \text{Survey Ratio}$$

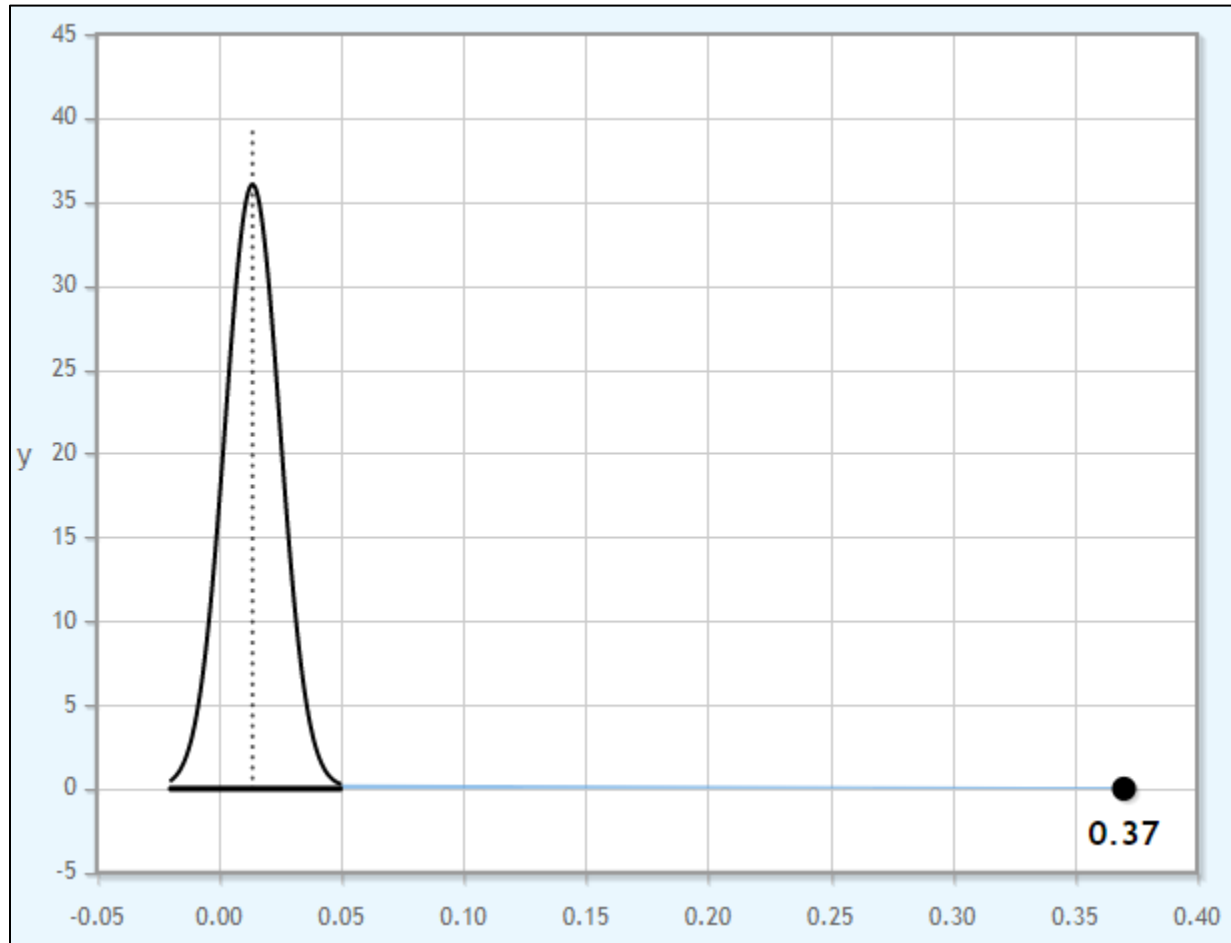
To test this hypothesis, I collect state-by-state CDC data on reported inoculation-associated deaths and COVID-19 attributed fatalities. The mean and standard deviation of the ratio of vaccine-attributed fatalities to COVID-19-attributed fatalities is:

$$\text{Mean of State-by-State Ratio (u)} = 0.0136$$

$$\text{Standard Deviation of State-by-State Ratio (}\sigma\text{)} = 0.0111$$

If the state-by-state ratio is normally distributed with a mean (u) = 0.0136 and standard deviation (σ) = 0.0111, it is possible to examine the probability that the Survey Ratio > CDC Ratio= X [$P(\text{CDC Ratio} > 0.3667)$]. From the calculation, and as shown in Figure 4 below, $P(\text{CDC Ratio} > 0.3667) = 0$. With the corresponding Z-score = 31.81, the null hypothesis is rejected.

Figure 4: Distribution of the State-by-State Ratio of COVID-19 Vaccine Fatalities to COVID-19 Illness Fatalities



In contrast, if the experiences reflected in the survey are the true ratio, then it is possible to calculate and estimate the number of vaccine-attributed fatalities. To do this we assume the CDC estimate of COVID-19-attributed fatalities is an appropriate baseline. As discussed earlier in the paper, this assumption is appropriate because respondents will be told by medical authorities that the cause of death was COVID-19 in accordance with CDC guidelines.

$$\text{Survey Ratio} = \frac{55}{150} \qquad \text{Population Ratio} = \frac{y}{839,993}$$

Solving for the estimated number of true vaccine-associated fatalities, y , yields 307,997 deaths attributable to the COVID-19 vaccines.

While this point estimate is informative, it is also important to generate a confidence interval around the point estimate. To do this, I use the bootstrap method, which is a non-parametric approach that does not assume an underlying distribution of the data. The procedure is as follows. First, resample the original dataset with replacement to get the same number of "pseudo-observations." With this approach some of the original observations will be counted multiple times. This new dataset will be another pseudo-survey sample. I then recalculate the point estimate with the new pseudo-survey sample. I repeat the process 1,000 times and compute the 95th percentile confidence interval. The interval range for the ratio is 0.256 and 0.466, which translates to 215,018 and 391,401 COVID-19 inoculation-related fatalities in the US population through December 2021 for the lower and upper bounds, respectively.

In addition to calculating the number fatalities, it is also possible to estimate the total number of other adverse events. From Table 3, there were 196 “severe” reported adverse events such as heart attacks; blood clots and strokes; and neurological problems, including paralysis; among people who respondents knew. There were 415 “less severe” events reported such as a headache, feeling tired, or feeling ill or nauseated. The ratio of estimated fatalities in the population to fatalities in the survey is $= \frac{307,997}{55}$. This ratio can be used to calculate the number of “severe” adverse events and “less severe” adverse events:

$$\text{Fatality Ratio} = \frac{307,997}{55}$$

$$\text{Severe Adverse Event Ratio} = \frac{a}{196}$$

$$\text{Fatality Ratio} = \frac{307,997}{55}$$

$$\text{Less Severe Adverse Event Ratio} = \frac{b}{415}$$

Solving for the estimated number of “severe” adverse events, a , yields about 1.1 million events in the US population, many of whom are likely to have reduced lifespans. Similarly, solving for “less severe” adverse events, b , yields about 2.3 million adverse events attributable to the COVID-19 inoculations. Together, fatalities, severe injuries, and less severe injuries tally to

about 3.7 million people nationwide. No effort was made to estimate the impact on personal and family finances of these adverse events and fatalities. However, historical vaccine injury has demonstrated that the financial consequences of such death and illness often has a significant impact on the wider family.

The evaluation thus far has assumed that the reported inoculation-related fatalities and injuries are due to the inoculation. Here, I relax that strong assumption and examine estimated fatalities under a range of scenarios. As discussed earlier, the perceptions of respondents can be biased. To examine potential bias, consider reported inoculation-related fatalities for Democrats, Republicans, and Independents which are 7, 29, and 19 fatalities, respectively. It is notable that Democrats report far fewer fatalities than Republicans, suggesting politicization of the issue. We can recalculate estimated nationwide fatalities with scenarios where Democrats, Republicans, and Independents are presumed to offer a truer or a more observant sense of what is happening on the ground by superimposing deaths reported by one political affiliation on the other political categories. If Democrats offer a clearer assessment, the estimated fatalities are about 118,600. If Republicans are more perceptive, then the estimated fatalities are 487,200. Basing the calculations on the perceptions of Independents generates estimated fatalities of 319,200.

It is also possible to reduce the number of reported fatalities by the number of expected fatalities that might have occurred anyway. As discussed earlier, an estimated 2.44 fatalities might have occurred from heart attacks, strokes, and blood clots regardless of inoculation status, which are commonly reported causes of death following inoculation. If we subtract those fatalities from the total reported inoculation-related fatalities, the new nationwide estimate is 294,300 fatalities.

6. Who Is Being Inoculated and Injured or Knows Others Who Have Been Injured from the Inoculation?

In this section of the paper, I offer an evaluation of the factors associated with the following: 1) the likelihood of being inoculated; 2) the likelihood of experiencing an injury from inoculation; and 3) the likelihood of knowing someone who has been injured by the inoculation.¹¹ Consider first the probit inoculation decision regression, which is represented by:

$$Inoculation_i = \begin{cases} 1 & \text{if } X_i\beta + u_i \geq 0 \\ 0 & \text{if } X_i\beta + u_i < 0 \end{cases}$$

where $Inoculation_i$ indicates whether the respondent is inoculated (yes=1, no=0), X_i is a vector of respondent characteristics (age, gender, political affiliation (Democrat, Republican, Independent), living environment (urban, suburban, rural), race (Caucasian, African American, Hispanic, Asian, Native American/Pacific Islander, Other) educational attainment, sources of information about Covid (mainstream news, alternative news/other, peer-reviewed scientific literature, official government sources), COVID-19 illness problems in social circles, and COVID-19 inoculation problems in social circles). Several socioeconomic and other factors reflect personal risk/benefit assessments such as personal and cultural health experiences, knowledge, and information sources, and thus may be associated with determining the decision to be inoculated.

These factors include one's socioeconomic characteristics such as age, income, education, and race. For example, older people are at greater risk of severe disease and death from COVID-19 and thus may be more inclined to accept treatments such as the COVID-19 inoculation. Given the history of medical experimentation on African American populations (Gamble, 1993), African American respondents may be less likely to be inoculated. Similarly,

¹¹ Other researchers such as Kilgore *et al.* (2021) have used online survey tools to evaluate COVID-19 inoculation hesitancy. In subsequent research I will examine this likelihood in greater depth, and I will examine the determinants of the likelihood of getting sick from COVID-19, having significant health issues from the COVID-19 illness, and knowing someone who has experienced significant health problems in the wake of COVID-19 illness.

one's sources of information influence one's decision to be inoculated. Primary news outlets and official government sources have emphasized the idea that the new type of gene therapeutic inoculation is safe and effective. However, alternative sources of news have emphasized the concerns about the safety of the new technology being used. Thus, I expect associations between news source and a respondent's likelihood of inoculation. Last, if respondents observed major health issues arise from the COVID-19 illness within their social circles, then inoculation might be more likely; the perceived benefits of avoiding COVID-19 through inoculation would be higher. On the other hand, if respondents observed major health issues following COVID-19 inoculation within their social circles, then inoculation would be less likely; the perceived risks of inoculation are heightened by knowing that someone in your social network had been harmed.

I also estimate probit regressions to identify factors associated with the likelihood that a respondent experienced a significant negative health impact from COVID-19 inoculation. I also identify the factors associated with the likelihood that a respondent knows someone who has experienced a significant adverse event from COVID-19 inoculation. The factors included in these probit regressions match the inoculation decision regression except that they exclude the variables that capture the COVID-19 health experiences within their social circles. While this evaluation offers a useful examination of patterns, caution is warranted with interpretation in that observed correlations may not necessarily be causal.

The probit regressions for the inoculation decision, having had an adverse event from inoculation, and knowing someone who experienced an adverse event are shown in Table 7. Note that coefficient estimates presented here have been converted to marginal effects, so that one can more clearly see the magnitudes of the effects in terms of the change in probability associated with each variable. Starting with socioeconomic factors, those who are older are more

likely to be inoculated, but less likely to know someone who has been injured from inoculation. Respondents with higher income are also more likely to be inoculated. Relative to Democrats, those who self-identify as Republican are 31% less likely to be inoculated and are more likely know someone who has experienced an adverse event. Those who identify as Independent are also much less likely to be inoculated. There is little evidence that there is a significant urban-rural divide when it comes to inoculation issues. However, race is very important. African Americans, Hispanics, and Asians are much less likely to be inoculated relative to Caucasians (25% to 30% less likely). African Americans are also much more likely to report an adverse event (46% more likely) and more likely to know someone who has experienced a health problem post-inoculation. Higher education attainment is associated with a higher likelihood of inoculation. Also, those with doctoral or professional degrees are 85% and 74% more likely to report that they knew someone who has experienced a health problem after inoculation, respectively, relative to someone who had not completed high school (the omitted category).

Information sources are also associated with the likelihood of inoculation. Those who report that they rely on mainstream news and official government sources are more likely to be inoculated. However, reliance on alternative news sources reduces the likelihood of inoculation. In addition, reliance on alternative news and peer-reviewed science increased the likelihood that a respondent would know someone who had experienced a health problem post-inoculation.

Finally, a respondent's observations within his/her social circles have a significant influence on the decision to be inoculated. Those who know someone who has experienced a significant health problem from the COVID-19 illness are more likely to be inoculated. However, those who know someone who had a health problem following inoculation have a 34% reduced probability of being inoculated.

Every time a booster shot is taken, the potential for injury is reintroduced. This information, coupled with the much larger coefficient on the variable that captures knowing someone who has been hurt by inoculation than the coefficient on the variable that captures knowing someone who has experienced a significant health problem from COVID-19 suggests that more and more people will reject the COVID-19 inoculation with each round of boosters.

Table 7: Probit Regressions on COVID-19 Inoculation (Coefficients are Marginal Effects)

Probit coefficients	Inoculated (yes=1, no=0)	Health problem since inoculation (yes=1, no=0)	Social circle - health problem after inoculation (yes=1, no=0)
Age	0.0151*** (0.00170)	-0.00335 (0.00280)	-0.0123*** (0.00183)
Combined income	0.00000321*** (0.000000571)	0.000000416 (0.000000890)	-0.000000721 (0.000000607)
Republican (yes=1, no=0)	-0.313*** (0.0676)	0.218* (0.110)	0.191** (0.0718)
Ind./Other (yes=1, no=0)	-0.283*** (0.0627)	0.00455 (0.106)	0.0558 (0.0676)
Suburban (yes=1, no=0)	-0.0192 (0.0593)	-0.116 (0.101)	0.00672 (0.0637)
Rural (yes=1, no=0)	-0.185* (0.0732)	0.233 (0.124)	0.139 (0.0775)
African Am. (yes=1, no=0)	-0.246*** (0.0740)	0.456*** (0.132)	0.189* (0.0768)
Hispanic (yes=1, no=0)	-0.263** (0.0976)	0.177 (0.189)	0.0619 (0.102)
Asian (yes=1, no=0)	-0.319* (0.133)	0.235 (0.223)	-0.232 (0.153)
Nat. Am./Pac. Is. (yes=1, no=0)	-0.146 (0.160)	0.445 (0.271)	0.132 (0.163)
Other/more than one race (yes=1, no=0)	-0.171 (0.140)	0.0336 (0.244)	-0.109 (0.148)
HS/GED (yes=1, no=0)	0.294* (0.141)	0.143 (0.379)	0.0407 (0.144)
Some college (yes=1, no=0)	0.434** (0.143)	0.343 (0.377)	0.115 (0.146)
2-year CD (yes=1, no=0)	0.466** (0.154)	0.0689 (0.394)	0.340* (0.157)
4-year CD (yes=1, no=0)	0.749*** (0.149)	0.486 (0.378)	0.163 (0.153)
Master's (yes=1, no=0)	0.634*** (0.163)	0.476 (0.391)	0.392* (0.165)

Doctoral (yes=1, no=0)	0.791*** (0.235)	0.920* (0.442)	0.856*** (0.228)
Prof. (JD, MD) (yes=1, no=0)	0.708*** (0.214)	0.559 (0.435)	0.744*** (0.210)
Mainstream (yes=1, no=0)	0.199*** (0.0557)	0.142 (0.1000)	0.0130 (0.0593)
Alternative (yes=1, no=0)	-0.243*** (0.0562)	0.180 (0.0970)	0.229*** (0.0585)
Science (yes=1, no=0)	0.0412 (0.0663)	0.166 (0.108)	0.211** (0.0675)
Gov't sources (yes=1, no=0)	0.281*** (0.0534)	-0.0453 (0.0900)	-0.0987 (0.0575)
Male (yes=1, no=0)	0.0974 (0.0519)	0.150 (0.0889)	0.00635 (0.0556)
Social circle COVID-19 health problem (yes=1, no=0)	0.164** (0.0551)		
Social circle COVID-19 inocul. problem (yes=1, no=0)	-0.338*** (0.0631)		
Constant	-1.190*** (0.168)	-1.663*** (0.395)	-0.628*** (0.172)
Observations	2813	1353	2813
Pseudo R^2	0.145	0.047	0.053

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

7. Conclusions

In this paper, I present the findings from the Survey of COVID-19 Health Experiences, which was administered to 3,000 people sampled from the US adult population. The survey provides valuable information about the perceptions and experiences of everyday people. Data on the COVID-19 illness show that many have lost loved ones. However, the survey also demonstrates that many people lost loved ones from the COVID-19 inoculations. Under the assumption that all reported inoculation-related fatalities in the survey were caused by the inoculations, calculations indicate that as many as 308,000 people may have died in the US following COVID-19 inoculation. However, not all reported inoculation-related fatalities are necessarily caused by the inoculation. If we subtract fatalities that might have occurred regardless of inoculation, estimated fatalities are about 294,000. Many of the descriptions such as “heart attack,” “stroke,” or “blood

clot” are consistent with FDA documentation about the potential risks of the COVID-19 inoculation. They are also consistent with the research and concerns of many scientists.

To offer some evaluation of potential bias present in the survey, I calculated estimated fatalities under the assumptions that the experiences of Democrats, Republicans, and Independents offer more accurate assessments of inoculation-related fatalities. Under these assumptions, estimated fatalities for Democrats, Republicans, and Independents are 118,600, 487,200, and 319,200, respectively.

The debate on the risks is not whether the COVID-19 inoculation can cause harm, but how often it occurs. Government officials state that serious adverse events are very rare. The results of this survey suggest otherwise. Is it possible that 294,000 to 308,000 fatalities resulted from the COVID-19 inoculation effort? For reference, consider excess mortality in 2021. Recently, insurance companies reported that deaths in 2021 among the working age population (18-64) were about 40% above the pre-COVID-19 annual fatalities, noting that this was a shocking three standard deviations outside the norm. The current estimate is that total fatalities in 2021 will be about 3.7 million people, which is about one million more than a typical pre-COVID-19 year. Importantly, insurance executives noted that only a portion of the excess fatalities were due to COVID-19. (Menge, 2022)

Of critical importance is the fact that potential harm is induced with every COVID-19 inoculation and the potential harm repeats with booster shots. Thus, we can expect continued injuries and fatalities with each round of boosters. In contrast, once a person recovers from COVID-19, research shows that natural immunity is strong and lasting. (Brownstone Institute, 2021). As cited earlier in this paper, the evidence continues to grow showing that treatments such as ivermectin are very effective in reducing the severity of the illness. Further, data and research

show that COVID-19 is not severe for most young people. Kostoff *et al.* (2021) ask, “Why are we vaccinating young children against COVID-19?” In the survey, the average age of someone experiencing significant problem from COVID-19 was 43, whereas the average age of a person experiencing a health problem from inoculation was 39. It appears that the policy of widespread inoculation results in a shift of risk from the older to the younger. Finally, the fact that governments around the world are now encouraging—and in many cases mandating—their citizens to take booster shots demonstrates that the COVID-19 inoculation offers only temporary protection, and that protection fades within months. Recent research by Buchan *et al.* (2022) and Hansen, *et al.* (2021) shows that the effectiveness of the inoculations is initially positive against Omicron, but then becomes negative after a few months. The evidence from this survey suggests that inoculation for the most part did not prevent people from getting COVID-19. In some cases, respondents reported that a person they knew had died from COVID-19 despite being inoculated.

The primary goal of this project was to expand the available information about the injuries and fatalities from COVID-19 inoculation through a survey to gather information based on personal experiences and perceptions. While these experiences and perceptions are imperfect because it difficult to be sure that the relationship between adverse events and inoculation is causal, and because people interpret events through their own history, culture, knowledge, and concerns, the survey provides important new information that can help shed light on what is happening. The analysis also shows that COVID-19 health experiences can and do play an important role in health decisions; my evaluation shows that as more people see COVID-19 inoculation injuries within their social circles, with each round of boosters fewer and fewer people will be inclined accept the inoculation. Currently, hundreds of millions of people in many countries are being pressured through vaccine mandates and restrictions for the uninoculated. In

cases where significant risk is present, the Nuremberg Code, international law, and national laws require full information about both the risks and the benefits of a health intervention, and potential participants in the health intervention must have the freedom to choose whether to participate without coercion.

The official position of the US government as of February 2022 is that the COVID-19 inoculations have resulted in nine fatalities. (CDC, 2022) The experiences shared by hundreds of respondents in this survey suggests that many people died or were injured following inoculation. Which data are more believable: nine fatalities or 300,000 fatalities? Using a survey such as this is normally associated with the first stage of scientific inquiry, observation. As previously discussed, surveys have limitations in measuring the impacts of health interventions. However, the information presented in this paper offers an important point of triangulation. The experiences of people captured in surveys generally should be consistent with official government data. In the case of the COVID-19 inoculation, there is a tremendous divergence which should be cause for further inquiry. My hope is that the research presented here will motivate a full and transparent examination by independent health and medical scholars to ascertain the degree of harm being caused by the COVID-19 inoculations.

Appendices

Appendix 1: National Survey of Covid Health Experiences

NATIONAL SURVEY OF COVID-19 HEALTH EXPERIENCES

Online Survey Consent Information

Purpose of Research.

You are being asked to participate in this web-based survey in order to increase our understanding of the health experiences people have had during the COVID-19 crisis period.

What You Will Do.

If you choose to participate in this research study, you will complete a 10-20 minute survey regarding your experiences during the COVID-19 crisis. You will only take this one survey.

Participation and Withdrawal.

Your participation in this research is voluntary. You have the right to refuse to participate in this survey. You may withdraw from the web-based survey in this research study at any time.

Confidentiality.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. When the results of the research are published or discussed at conferences, no information will be included that reveals your identity. Your privacy will be protected to the maximum extent allowable by law.

Potential Benefits.

The information that you provide in the surveys will help us better understand challenges people have faced during the crisis and will be used to improve pandemic responses in the future.

Potential Risks.

Remember that only the research project team will know what you have said. Results will be shared in aggregate form only without identifying who said what. The risks are therefore minimal.

Costs and Compensation for Being in the Study.

You will not incur any expenses for participating in the survey, beyond your time, assuming you have internet access. You are eligible to receive compensation for participating in the survey as defined by Survey Sampling International.

Contact Information for Questions or Concerns.

If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an injury, please contact the lead researcher: Mark Skidmore, 91 Justin S. Morrill Hall of Agriculture, Michigan State University, East Lansing, MI 48824, email mskidmor@msu.edu, tel. 517-353-9172.

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at: 517-355-2180, Fax 517-432-4503, or e-mail irb@msu.edu or regular mail at 202 Olds Hall, MSU, East Lansing, MI 48824.

After reading the above, please indicate if you consent to participate. Selecting "I Consent" indicates you are willing to participate. Selecting "I Do Not Consent" indicates you are NOT willing to participate.

☐ I Consent. (1)

☐ I Do Not Consent. (2)

*Skip To: Q2 If NATIONAL SURVEY OF COVID-19 HEALTH EXPERIENCES Online Survey Consent Information Purpose of Rese... = I Consent.
Skip To: End of Survey If NATIONAL SURVEY OF COVID-19 HEALTH EXPERIENCES Online Survey Consent Information Purpose of Rese... = I Do Not Consent.*

In the following portion of the survey, you will be asked about your health experiences during the COVID-19 crisis.

Q1 Have you had COVID-19?

☐ No. (1)

☐ Yes. (2)

*Skip To: Q2 If Have you had COVID-19? = Yes.
Skip To: Q10 If Have you had COVID-19? = No.*

Q2 Please indicate how you were diagnosed. (check all that apply)

☐

PCR Test (1)

☐

Rapid Test (2)

☐

COVID-19 Symptoms (3)

Q3 About when were you sick.

Q4 About how long did it take for you to recover?

- ☐ Less than a week. (1)
 - ☐ Less than two weeks. (2)
 - ☐ Less than three weeks. (3)
 - ☐ Four weeks or more. (indicate the number of weeks) (4)
-

Q5 Do you have any lingering health issues in the wake of your COVID-19 infection?

- ☐ No. (1)
 - ☐ Yes. (please describe below) (2)
-

Q6 Did you use any medications as treatment for COVID-19?

- ☐ No (1)
 - ☐ Yes. (please list medications below) (2)
-

Q7 Did you use alternative medications such as ivermectin or hydroxychloroquine as treatment for COVID-19?

- ☐ No. (1)
- ☐ Yes. (2)

Skip To: Q10 If Did you use alternative medications such as ivermectin or hydroxychloroquine as treatment for COV... = No.
Skip To: Q8 If Did you use alternative medications such as ivermectin or hydroxychloroquine as treatment for COV... = Yes.

Q8 Which of the following alternative treatments did you use?

- ☐ Ivermectin (1)
 - ☐ Hydroxychloroquine (2)
 - ☐ Other (please describe below) (3)
-

Q9 In your assessment, did the alternative medication you took help you recover?

- ☐ No. (1)
- ☐ Yes. (2)

Q10 Which of the following statements best describes your view of alternative COVID-19 treatments such as ivermectin or hydroxychloroquine?

- ☐ Research has shown these treatments to be ineffective for COVID-19. (1)
- ☐ Research has shown these treatments to be effective for COVID-19. (2)
- ☐ I know little about the effectiveness of these treatments for COVID-19. (3)

In the following portion of the survey, you will be asked about your experiences with COVID-19 inoculation.

Q11 Have you been inoculated against COVID-19?

- ☐ No. (1)
- ☐ Yes. (2)

Skip To: Q18 If Have you been inoculated against COVID-19? = No.
Skip To: Q12 If Have you been inoculated against COVID-19? = Yes.

Q12 Did your COVID-19 infection occur before or after inoculation?

- ☐ Before. (1)
- ☐ After. (2)
- ☐ I have not had COVID-19. (3)

Q13 Which of the three authorized vaccines did you use? (check all that apply)

	1st Dose (1)	2nd Dose (2)	3rd Dose (3)
Pfizer. (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderna. (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Johnson & Johnson.
(3)

☐☐☐

I do not remember.
(4)

☐☐☐

Q14 Have you experienced any health problems since you were vaccinated?

☐ No. (1)

☐ Yes. (Please describe below) (2)

Skip To: Q18 If Have you experienced any health problems since you were vaccinated? = No.

Skip To: Q15 If Have you experienced any health problems since you were vaccinated? = Yes. (Please describe below)

Q15 What is the timeframe of your post vaccination health problems? (check all that apply)

	0-3 Days (1)	4-30 Days (2)	30+ Days (3)
Dose 1 (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dose 2 (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dose 3 (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q16 Was the health condition reported to a doctor?

☐ No. (1)

☐ Yes. (2)

Skip To: Q18 If Was the health condition reported to a doctor? = No.

Skip To: Q17 If Was the health condition reported to a doctor? = Yes.

Q17 Was the health event reported by your doctor to the CDC Adverse Event Reporting System as a possible adverse event from vaccination?

☐ No. (1)

☐ Yes. (2)

☐ I do not know. (3)

In the following portion of the survey, you will be asked about the health experiences of those in your social circles.

Q18 Has anyone in your social circles (family, friends, church, work colleagues, social networks, etc.) experienced a significant health problem after they had been ill from COVID-19 (but not from the vaccine)?

☐ No. (1)

☐ Yes. (2)

Skip To: Q22 If Has anyone in your social circles (family, friends, church, work colleagues, social networks, etc...) = No.

Skip To: Q19 If Has anyone in your social circles (family, friends, church, work colleagues, social networks, etc...) = Yes.

Q19 Did just one person have this problem or more than one?

☐ One. (1)

☐ Two. (2)

☐ Three. (3)

☐ More than three (please indicate how many below) (4)

Q20 Of the people you know who experienced a health problem after being sick from COVID-19 (but not from the vaccine), think about the one you know BEST. Please describe the health condition experienced by that person.

Q21 About how old is the person who experienced this health condition?

☐ Under 18 years. (1)

☐ 18 to 24 years. (2)

☐ 25 to 29 years. (3)

☐ 30 to 34 years. (4)

- ☐ 35 to 39 years. (5)
- ☐ 40 to 44 years. (6)
- ☐ 45 to 49 years. (7)
- ☐ 50 to 54 years. (8)
- ☐ 55 to 59 years. (9)
- ☐ 60 to 64 years. (10)
- ☐ 65 to 69 years. (11)
- ☐ 70 to 74 years. (12)
- ☐ 75 to 79 years. (13)
- ☐ 80 to 84 years. (14)
- ☐ 85 to 89 years. (15)
- ☐ 90 years or over. (16)

Q22 Has anyone in your social circles (family, friends, church, work colleagues, social networks, etc.) experienced a significant health problem after they received the COVID-19 vaccination?

- ☐ No. (1)
- ☐ Yes. (2)

Skip To: Q26 If Has anyone in your social circles (family, friends, church, work colleagues, social networks, etc... = No.

Skip To: Q23 If Has anyone in your social circles (family, friends, church, work colleagues, social networks, etc... = Yes.

Q23 Did just one person have this problem or more than one?

- ☐ One. (1)
- ☐ Two. (2)

- ☐ Three. (3)
- ☐ More than three. (please indicate how many below) (4)
-

Q24 Of the people you know who experienced a health problem after being vaccinated, think about the one you know BEST. Please describe the health condition experienced by that person.

Q25 About how old is the person who experienced this health condition?

- ☐ Under 18 years. (1)
- ☐ 18 to 24 years. (2)
- ☐ 25 to 29 years. (3)
- ☐ 30 to 34 years. (4)
- ☐ 35 to 39 years. (5)
- ☐ 40 to 44 years. (6)
- ☐ 45 to 49 years. (7)
- ☐ 50 to 54 years. (8)
- ☐ 55 to 59 years. (9)
- ☐ 60 to 64 years. (10)
- ☐ 65 to 69 years. (11)
- ☐ 70 to 74 years. (12)
- ☐ 75 to 79 years. (13)
- ☐ 80 to 84 years. (14)

- ☐ 85 to 89 years. (15)
- ☐ 90 years or over. (16)

In this last portion of the survey, you will be asked for demographic information and your opinion on several COVID-19 policies.

Q26 What is your age?

- ☐ 18 to 24 years. (1)
- ☐ 25 to 29 years. (2)
- ☐ 30 to 34 years. (3)
- ☐ 35 to 39 years. (4)
- ☐ 40 to 44 years. (5)
- ☐ 45 to 49 years. (6)
- ☐ 50 to 54 years. (7)
- ☐ 55 to 59 years. (8)
- ☐ 60 to 64 years. (9)
- ☐ 65 to 69 years. (10)
- ☐ 70 to 74 years. (11)
- ☐ 75 to 79 years. (12)
- ☐ 80 to 84 years. (13)
- ☐ 85 to 89 years. (14)
- ☐ 90 years or over. (15)

Q27 What is the highest level of education you have completed?

- ☐ Less than High School. (1)

- ☐ High School / GED. (2)
- ☐ Some College. (3)
- ☐ 2-year College Degree. (4)
- ☐ 4-year College Degree. (5)
- ☐ Master's Degree. (6)
- ☐ Doctoral Degree. (7)
- ☐ Professional Degree. (JD, MD) (8)

Q28 What is your race?

- ☐ White/Caucasian. (1)
 - ☐ African American. (2)
 - ☐ Hispanic. (3)
 - ☐ Asian. (4)
 - ☐ Native American. (5)
 - ☐ Pacific Islander. (6)
 - ☐ Other/more than one. (7)
-

Q29 Please indicate your gender below.

Q30 Which type of community do you live in?

- ☐ Urban. (1)
- ☐ Suburban. (2)
- ☐ Rural. (3)

Q31 What is your combined annual household income?

- ☐ Less than \$10,000. (1)
- ☐ \$10,000 - \$14,999. (2)
- ☐ \$15,000 - \$19,999. (3)
- ☐ \$20,000 - \$24,999. (4)
- ☐ \$25,000 - \$34,999. (5)
- ☐ \$35,000 - \$49,999. (6)
- ☐ \$50,000 - \$74,999. (7)
- ☐ \$75,000 - \$99,999. (8)
- ☐ \$100,000 - \$149,999. (9)
- ☐ \$150,000 - \$199,999. (10)
- ☐ \$200,000 or more. (11)

Q32 Think about your social circles (family, friends, church, work colleagues, social networks, etc.). About how many people in your circles do you know well enough that you would typically learn about a significant emerging health condition? (numerical answer only please)

Q33 Please indicate your level of agreement/disagreement with the following statement: Vaccine mandates should be implemented across the nation.

- ☐ Strongly Agree. (1)
- ☐ Agree. (2)
- ☐ Neutral. (3)
- ☐ Disagree. (4)
- ☐ Strongly Disagree. (5)

Q34 Please indicate your level of agreement/disagreement with the following statement: Digital health/vaccine passports should be used to track COVID-19 vaccine status and enforce vaccine mandates.

- ☐ Strongly Agree. (1)
- ☐ Agree. (2)
- ☐ Neutral. (3)
- ☐ Disagree. (4)
- ☐ Strongly Disagree. (5)

Q35 Please indicate the reason(s) many policymakers may want to implement a digital vaccine passport system. (check all that apply)

- ☐ Systematically Monitor Vaccine Status. (1)
- ☐ Enforce Vaccine Mandates. (6)
- ☐ Facilitate the Adoption of a Digital Currency. (2)
- ☐ Control Purchases. (3)
- ☐ Control Assets. (4)
- ☐ Control Movement. (5)

Q36 Please indicate your level of agreement/disagreement with the following statement: Lockdowns are an effective policy tool for reducing COVID-19 transmission.

- ☐ Strongly Agree. (1)
- ☐ Agree. (2)
- ☐ Neutral. (3)
- ☐ Disagree. (4)
- ☐ Strongly Disagree. (5)

Q37 Please indicate your level of agreement/disagreement with the following statement: Mask mandates are an effective policy tool for reducing COVID-19 transmission.

- ☐ Strongly Agree. (1)
- ☐ Agree. (2)
- ☐ Neutral. (3)
- ☐ Disagree. (4)
- ☐ Strongly Disagree. (5)

Q38 Please indicate where you obtain news and information about COVID-19. (check all that apply)

- ☐ Mainstream News Sources. (1)
- ☐ Alternative News Sources. (2)
- ☐ Peer Reviewed Scientific Literature. (3)
- ☐ Official Government Sources Such as the U.S. Center for Disease Control (CDC). (4)
- ☐ Other (please provide information below). (5)
-

Q39 Please indicate your political affiliation.

- ☐ Democrat. (1)
- ☐ Republican. (2)
- ☐ Independent. (3)
- ☐ Other. (please indicate affiliation below) (4)
-

Q40 Please provide your five-digit zip code.

A word cloud visualization of terms related to COVID-19. The most prominent words are 'died', 'taste', 'breathing', 'covid', 'loss', 'smell', 'problems', 'issues', 'sick', 'breath', 'coughing', 'severe', 'health', 'hospitalized', 'away', 'heart', 'ventilator', 'flu', 'weeks', 'headache', 'long', 'symptoms', 'body', 'bad', 'death', 'lung', 'chest', 'cough', 'fever', 'shortness', 'hard', 'headaches', 'oxygen', 'months', 'pneumonia', 'trouble', 'time', 'person', 'lungs', 'asthma', 'pain', 'tired', 'weak', 'fatigue', 'passed', 'hospital', 'back', 'lost', 'breathe', 'days'.

These comments are intended to be provided as a separate linked document in the final published article.

They died from covid

Felt sickly for 2 days and then could not get out of bed. Called ambulance. Three days later after being on ventilator. They died.

They passed away.

Organs shut down proceeded by death

Ex-husband passed away

Respiratory problems, weakness, hospitalization.

Died from Covid

Hospitalization

Headache, cough, achy, loss of taste and smell, sneezing

They both died.

Person experienced extreme weight loss and still appears frail.

She died right after she contracted it. Don't know what the health issue was.

My son is having issues like mine. Insomnia, constant headaches, body aches, some confusion. He has a worse time concentrating.

She got very sick and suffered for a long time before she died.

Long haul covid effects. Still no taste or smell. Increasing problems with memory. Body aches and pains. These symptoms are all new since the virus.

Death

Respiratory problems, elevated temp, lethargy, listlessness, blurred vision

They had to be hospitalized

Kidneys are now giving her problems and she may need dialysis in the future.

They felt like ran over by a train, no endurance

Son in law had fever nausea and breathing problems. Lost smell and taste

The pastor but I have been watching online only. I have not been exposed

COVID

Loss of taste and smell

My son all covid symptoms

Fever, headache, and fatigue

Trouble breathing & chest pains

My grandmother suffered from breathing problems upon her infection and ultimately died from COVID.

Pneumonia

Death

Shingles

They made it through

They passed away from it

Parkinson's

Had to get rushed to the hospital, very ill and weak

Major breathing problems for which she was hospitalized

Extremely high fever after 2nd shot.

Side effects after covid. Wasn't able to recover from his chronic diseases.

Difficulty breathing

He is currently in the ICU on a ventilator due to low oxygen saturation, and he has had a stroke.

Heart issues

Edema, liver issues, swollen legs, could not sleep for days

Breathing

Stroke

Was in the hospital for 1+ months. Six months later, still unable to walk more than 100 feet at a time

death

Hospital with shortness of breath

Could not breath could walk felt fatigue hair lose vision lost organ damage insomnia

They died

Our daughter had flu like systems but fortunately it got no worse than that.

difficulty breathing

She ended up dying from COVID 19, she was my youngest sister.

Margie died from COVID-19 complications.

Shortness of breath, soreness, body pain

Light headedness memory loss

Relatives had it

Hospitalized. Intubated, died

Killed him supposedly but he had underlying sever conditions

My wife's grandfather passed away from COVID pneumonia in the early stages of the pandemic

Died

This person was in the mid-30s non-vaccinated and have past cancer problems.

Loss of breath

Loss of taste/smell

They got vaccine and ended up getting delta variant and was hospitalized for a week.

Severe breathing problems. Unfortunately, he didn't recover from it. It was my brother-in-law & he caught it while in a assisted living facility.

Still not 100%, Less stamina

No smelling or tasting

Trouble breathing

Loss of taste and smell but other symptoms were minor, much like a mild cold

In hospital for 3 months under oxygen all the time

Unusual heartbeat

Fever, loss of appetite, hospitalization, and finally death.

Contract covid then pneumonia and passed away

diabetes

Lost energy and hand shaken

One suffered fatigue more than usual

Death

They still can't taste anything

They were in a coma. They are now out of the hospital and recovering. Doing therapy.

Lingering covid symptoms

No taste

They are deaf in one ear and can't hear out of it from COVID-19

Put on a ventilator. Kidney issues. Very sick for a long time.

Breathing issues

They were bed ridden for 3 days after the second dose of the vaccine

Breathing issues

Hospitalized

Loss of taste for months

Felt weak for days and weeks after and shortness of breath could not walk far and felt very drained for weeks did not have no strength to even get up and walk to the bathroom it was very hard to get back to yourself.

He was already sick then he got COVID and died a month later it was my uncle

Strong flu-like symptoms, loss of smell and taste

My wife was sick for 3 or 4 days with it bad, my 8-year old son barely felt it for 24 hours

Trouble breathing, hospitalized

They have a headache and sore throat

Ongoing breathing problems

Covid. Bad health.

Breathing issues

Shortness of breath - still going on five months after positive test.

One of my classmates in the other classes got sick because of Covid, I think it was from his community.

Died from covid complications

Death

They were very sick and could barely do anything

Died

Severe cough and breathing problems. Also, some stomach issues

Chronic asthma, chronic tiredness and weakened immune system.

Fatigue

They died from COVID

Niece asthma and was very sick for over a week. Had antibodies treatment 2nd time

Had to go to the hospital

Serious breathing issues. Hospitalized in ICU.

Loss of hair, weak, loss of memory

They had a stuffed nose coughing and voice lost

Some people in my church died from covid 19. I'm not sure how many but more than three. I did not know them well.

Their COPD got worse.

They did not have their sense of smell for months.

Loss of appetite lung capacity decreased

He was hospitalized then died

Not being able to taste

Hair loss, weight loss, digestion issues

Weakness fatigue nauseous where the worst symptoms

Had a blood clot that led to death

They were all vaccinated but somehow got the covid. It's like regular flu
Loss of taste and smell, extreme fatigue and stomachache
Chest pain
Chest pain
Extreme fatigue. No taste or smell
On oxygen
Diabetes asthma
Cancer
They are healthy and have no health issues
No taste or smell
They got autism
All the symptoms, headaches, barely could breathe
Coughing sleeping a lot throwing up and headaches
Fatigue
Substantial lung damage
High fever, lasting symptoms
She was diabetic & unfortunately passed away because of covid
Lung problems after having covid
Ongoing breathing issues, unable to perform to the same degree as prior.
Coughing
Fatigue, aches
death
They died
They died.
fever
Nauseated dizziness bad headache headaches rash a few others
They were just tired and worn out
One has memory problems, one lost lung function she passed away eventually
Worsened COPD
Their forces were low. They lost muscle and some air they had to be rushed to the hospital.
They became weak, lost some senses, and deals with lung issues.
Memory loss
Labored breathing
They took the Covid 19 shot and got Covid 19. Ended up in the hospital and put on remdesivir and ventilator then passed away. The hospitals are killing people with these treatments.
They were very tired and other bad symptoms
Young priest at church ended up in hospital on a ventilator. He recovered, but it took a while. His age group hadn't yet been eligible for a vaccine.
Shortness of breath
The person had trouble breathing and not having any energy to do everyday tasks.
Severe shortness of breath and poor exercise tolerance for 6+months following illness.
They are still on oxygen four weeks after

They died
 Had to be quarantined and they felt miserable
 Fever and lung problems
 Yes, a rapid heartbeat
 Extended hospitalization
 She had almost bedridden for six months. Her fatigue is causing serious family issues.
 Respiratory.
 Near lung failure.
 Hospitalized, on ventilator, then died.
 Lung collapse
 Hard to breathe, resulting in death
 Headaches
 Thought they were going to die. Couldn't breathe. Smell this or taste
 Fatigue
 Very sick for a long time, then very tired after
 A niece had some symptoms of MS
 Pneumonia, blood clots, death
 Fatigue and hard time breathing
 Tiredness
 The entire family died except one died, six in total
 Low energy and trouble breathing
 Had to use oxygen machine now
 This man in his 60's developed Alzheimer's. He has been health conscious his whole adult life, eating right and exercising regularly. He was completely healthy before Covid but has declined dramatically since.
 Fatigue
 Arithmetic heart problems
 Trouble breathing low stamina and loss of weight
 Heart congestion
 This person had a fever every single day, brain fog, challenges with leg pain, headaches, weight gain, swelling and lots of other issues.
 My grandmother she got put on the ventilator machine.
 Trouble breathing
 Lungs have weakened, now has to use an inhaler
 They died
 Breathing problems- needing oxygen constantly
Death from covid.
 Severely short of breath and late onset asthma
 Body aches, extreme fatigue
 The person died
 Couldn't smell or taste
 My partner has COPD and she experienced much more severe reaction to the Covid
 My son had COVID-19, He was very congested and had a fever.

They died

Several comorbidities, he got covid after driving to Florida. Admitted to Tampa VA hospital and received multiple breathing treatments. He had DM, CHF, Pacemaker in addition to the fully vac/boosted break through case he acquired.

Trouble breathing loss of taste and smell

Long term tiredness. No energy. Long term loss of smell and taste

Coughing

The person was an older man (69 years old), he was diagnosed with covid 19 on a Saturday and died on the following Wednesday.

Lung problems

Indefinitely shortness of breath at times when doing some physical demanding moves.

Flu like conditions

Covid pneumonia

She had memory and health problems.

Heavy breathing sore throat and sleep a lot

Loss of taste and smell. Throwing up, loss of weight, lethargic

My dad was in the hospital with it, couldn't breathe

Death

Endless fatigue, diarrhea, and headache.

They were a very healthy person but since Covid started they've been hospitalized umpteen times.

Loss of taste, fever, run down feeling

Breathing issues and smell

Feeling tired and having huge headaches

He died

Flu like symptoms

Fever breathing difficult

Diminished lung capacity. Got pneumonia months later

Consistently tired

Person became very sick then died from complications

They have had chronic shortness of breath

Passed away

Bad Coughs

Worsened COPD

He got COVID & was hospitalized & passed away.

They experienced symptoms for over two weeks. They still currently cannot smell correctly after having covid.

Backaches and headaches

Cough and fatigue

Hard of breathing

Uncle was in remission from cancer, caught Covid from his son and died.

Unable to taste

Asthma complications

They died

Flu-like symptoms

It killed my grandmother

Blood clot

Loss of smell and taste

Serious COVID hospitalized and intubated but recovered with lasting problems

Loss of hair

They were coughing a lot, didn't have any taste buds.

Pneumonia. Loss of smell and taste. Cough

Blood clots

Hard to get air

My dad. He had covid and said it was the worst thing ever

They had every symptom for Covid

Flu

Hospital for almost 2 months. He then had to go to rehab. The person was not diagnosed with any health issue before getting covid. The person's breathing, kidneys, and heart were all affected. Every day was a struggle. It took 2 1/2 months to finally be discharged. Thankfully he is ok. Just frequent visits to heart and kidney doctors

Fatigue, trouble breathing

Pneumonia

Lung damage. Gets winded easily

On ventilator

They were having headaches and getting real sick

Reactivation of their lime disease

Their nose would not quit bleeding, so he was sent to the burn unit in Houston for pain medication

Trouble breathing

I really don't know coughing issues and vomit

They were very weak they didn't want to get out of bed, they could barely breathe, headaches were painful as if it were migraines, time they woke up he would fall back to sleep for hours. Couldn't get out of bed

They were isolated and were coughing n sneezing

Respiratory problem, pneumonia

Brother-in-law hospitalized and quarantined

Unable to give the full scope do the after getting sick the isolation who is done

Dizziness

Flu like symptoms with vomiting.

My immune system is all messed up

He became ill; had a hard time breathing went to the hospital died a couple days later

They were throwing up and coughing a lot

COVID was really bad about

Hospital stay required a pacemaker and traq

They were sick for quite a while

This is very bad

Couldn't taste or smell

Death

Can't taste

Loss of taste

Bad headache

Mild, flu like illness

Covid

taste, ache, fever, etc - but bad enough to go to the hospital

Died

Thumping of the ears and sharp pain shooting through the ears

They passed away from pneumonia

The individual had experienced a stroke from diabetes after having covid and before having covid their diabetes was under control. It immediately was much worse.

Cousin 47- stroke Cousin 28- blood clots Aunt 63- death Friend 41- death

Breathing/lung issues even after covid

Sob

Shortness of breath. Breathing machine. Loss of weight and appetite. Weakness, had to have therapy to get strength back. Hospital for 2 months

Hard to breathe. No taste. Very very tired

Death

My cousin had COVID a year ago and she still has vertigo and headaches she can't work yet.

Still have problems with her stamina working with day-to-day activities.

Fatigue

Permanent heart and lung damage

Loss of smell and taste for almost a year now

Death

They died

Hard breathing, couldn't talk, sweaty, chest hurt

Hair loss

Lung related issues

Breathing problem

Respiratory distress, life support, stroke

Ringing in ears

Died of heart attack

My sister-in-law died from it and two other people

Poor

They both died from it

Breathing problems

After COVID my family had chest pain

ICU and placed on ventilator

They get sudden dizzy spells.

More joint pains

Death

Death

Loss of taste and smell for months

Headache and cough

Dizziness, fever, fatigue

They will forever be changed. Cannot breathe. Wore them down. Still can't smell.

Cold, cough, loss of taste and smell

They've been in the hospital 6 months on and off the ventilator

Death

Their COPD became and is still more severe. It's been a year and half since she had it.

My pastor had a hard time breathing and was losing his stamina, but he survived.

No taste

Kidney failure

He was hospitalized for several days. The complication that arose was pneumonia.

Issues with their heart

My aunt was diagnosed with covid in March of 2020 and died from complications after 6 days

My brother became Type II diabetic after Covid.

Continued issues with their respiratory function

My sisters both

Fever, cough

General flu symptoms and lack of taste

Increased heart rate, fatigue, vertigo

Oxygen now

Loss of taste and smell for months.

Breathing issues. Sweating.

Breathing problems

Had to be admitted to ICU and put on ventilator

Developed pneumonia and passed away

Breathing issues

2 recovered and 1 died

Death

They had the same symptoms but got better more quickly.

Home sick in bed for a week. Lost taste and smell for over 6 months

Death

My uncle had two strokes from being exposed to it

Fever

My mother

They ended up recovering

Death

Just a weak immune system

Mental health and female issues

He was hospitalized with low oxygen levels

Stroke

Malnutrition

Loss of taste and cough mainly

Poor

Was elderly and in poor health. Could not recover once Covid was contracted. They passed.

They got very weak and out of control but got better thanks to God

Death

Pneumonia and breathing problems

Diabetes

Loss of taste and smell

Severe breathing issues

Joint issues

Loss of taste and fatigue

Breathing problem causing death

Heart issues developed

Friend's wife. He said she ended up in the hospital. Turned blue and stopped breathing for a bit. They had to resuscitate her back. That's all that I know.

Blood clot to heart, died but resuscitated, now has leg problems and must wear braces to walk, plus not real strong like before.

They died of covid

Covid

Traumatized

My uncle had to go on the breathing machine

Chronic back pain

Scars on lungs which cause breathing problems

Asthma developed afterwards, wheezing coughs

They are still having up and down fevers up to 100.7 and harder to breath than usual.

It was bad

They were older and seemed to have a weaker immune system. She was vomiting and couldn't get out of bed. She constantly had a fever and slept through the days.

She had a runny nose couldn't taste or smell much. She was in my household but wearing a mask really helped me out from not getting COVID

My sister died 2020 from covid in Florida. My niece was a police officer and she just died Oct 2021 covid. Her one-year old daughter was found next to her body

Sore muscles, difficult with memory

Loss of life during hospitalization due to being infected by a person who WAS inoculated

I don't really know she works at the store that I go in everyday and one day she wasn't there, and the owner said yeah she got sick with covid and a few days later we were going to her funeral is really sad.

Trouble breathing

Hair lost. Shortness of breath

Couldn't smell

She's always tired now. Some problems breathing.

Hard breathing

Died

Very tired

High blood pressure

They passed away

It was horrible vomiting I had my period

Death

Went to the hospital and died

He refused to get vaccinated and died at 73

Dementia worse

Trouble breathing

Death

Coughing

They died

Long haul covid symptoms

Compromised

High fever and chills

Not being able to breathe

Hospital and ventilator

Loss of taste or smell

My cousin died

VERY SICK AND PASSED AWAY

Difficulty breathing, loss of smell and taste! Very weak

Very bad

They never returned to normal after covid. He killed himself

Body pain

He still has a lingering cough, frequent chest and ribcage pain. Exhaustion. Muscle and joint aches.

Difficulties with breathing

That person died.

She died a year ago due to severe lung problems caused by Covid. The vaccines had not been approved at the time of her death.

My wife got it way worse than me

Pulmonary issues

Yes, he couldn't breathe barely and smell

Long hauler

Hair loss, and taste

My sister-in-law has NEVER regained her sense of smell.

My brother had hard time breathing correctly after getting sick from COVID-19 but nothing much else

Got sick and did not recover

Frequent headaches, shortness of breath

They got very sick and weak. It was horrible they were sick for a long time.

Breathing problems... Loss of taste.

This person passed away

My niece had covid and now has problems with an enlarged heart.

Bad head pain, high temperature

They were sick

People that got problem need to be in the hospital

They lost all taste. Physically exhausted. They had a hard time breathing. And a hard time thinking. They said they were affected by a mental fog.

Their health condition was really bad

They have long term covid symptoms no energy and coughing

Coma

Scary

He can't see his family for week

Fatigue

Energy, just don't seem to bounce back from covid, issues with eyes headaches

Headaches

Ongoing respiratory problems

Inability to stand for length of time

Flu

Died

Very bad and sick

Very lethargic and distressed.

Really sick

Not wanting to do anything

Heavy breathing

Died

Covid increased the affect and worsened her pneumonia

They died

They experienced illness after getting the vaccination...not after Covid

Continuing loss of taste and smell

Real sick

Her taste not come back

Body aches no sense. of smell or taste

Still lost of taste smell...weight loss, brain damage, etc.

Coughing sweaty fatigue and diarrhea

Had breathing problems

Loss of hair

Death

Death

Death

Flu like symptoms

Weak & shortness of breath

Intubated for months

His asthma got worse, and he still has not gotten back his taste

Lingering loss of taste

One person died

They died

Side effects

Death

They were very tired and moody, sleeps all day, no appetite

They passed away

Death

Death

They still have breathing problems and smell and taste problems

Multiple organ failure and septicemia

Breathing issues hospitalized

Unable to taste and smell

Loss of smell and taste

Death

They died

Died

Friend with a breathing problem

She has experienced weakness throughout her body.

Lack of oxygen. Blood clots in lungs.

Breathing issues, aches and pains

Cough and sore throat

Was hospitalized with pneumonia, made full recovery

Shortness of breath

Slow brain

Very sick

Lungs will never fully recover

Got sick and passed

Lot of cough trouble breath

My 90-year old grandma was in a nursing home and contracted it and died in May 2020.

This is a male approx. 55 years of age, good health, Caucasian male 170lbs. Normal diet good shape, fatigue, moisture in lungs almost like pneumonia symptoms.

Sick feeling

They had lack of smell and taste

They died

My younger brother had a hard time breathing and tasting after Covid 19

My friend has never gotten her taste back or it hasn't been the same since she tested positive for Covid. Covid wiped out the few people I had left.

Limited physical activity due to breathing issues

Kidney problems

My mother-in-law is a long hauler and now is experiencing pulmonary issues

My mother she had a brain bleed after she got over Covid.

Joints not working correctly. Not being able to walk correctly.

They are still having trouble with being able to do activities and breathe like they use to normally

Pneumonia

Pneumonia, coughing, trouble breathing

Nausea and headache

Dead

My auntie died

Started having real bad chest problems

Ongoing lung and breathing conditions.

They caught cancer after getting Covid.

21-year old had heart attack

Vomiting

Hard to breathe. Lungs gave out and was laid to rest.

Breathing issues

He died

Thick and heavy blood

They died.

Lost taste and smell and died.

A lot of coughing and chest pains

Heart issues, long term fatigue

They now have a harder time breathing.

Loss of taste smell and high fever

Heart problems

Loss of taste even after getting better

They were coughing a lot and had a fever and chills

Issues with breathing

Chest pain. Sinus pain. Loss of taste. Some numbness and tingling in extremities

Not good asthma

They died

They had headaches, couldn't smell and taste

Health deteriorating

Death

They passed away from it. They caught pneumonia whilst in the hospital with covid

The hospital let her leave early and her lungs collapsed

Breathing issues

Hospitalized in ICU for 14 days.

Headache and fever

They died

My son only had no smell or taste and a little achy

Very high fever always needing to puke and can't smell anything

One of the people was told she had it and she never fully recovered but she is a heavy smoker and she thinks it so much it makes her sick

They had mild symptoms they had fever, cough, and loss of taste

Lung problems

Ended up with compartment syndrome in his legs.
Breathing problems since having Covid
Enlarged heart
Breathing problems
Coughing
Breathing problems
Breathing issues
Breathing difficulties, fatigue
Drained energy, breathing difficulties, cloudy thinking
They provide best service in short period of time
They were sick
They were sick as hell
Fever, headache
He was a diabetic was completely vaccinated and caught covid and it destroyed his kidneys he now needs dialysis.
Ventilator
She was on a ventilator
Chest congestion breathing problems weak, no taste, ill feeling
Everyone I knew that had it has passed away from COVID
Heart problems blood clots
Lung pain can no long breath deep or hold her breath in. She now has asthma symptoms.
Chills, slight fever, cough, runny nose.
Trouble breathing, COPD, headaches, neurological issues
Continuous headaches and shortness of breath
Lung damage that led to death
Heart issues
Uncontrollable shaking and the sense of smell was off still
Pneumonia
Harder to breathe no energy feverish
Breathing bad and can't breathe
Olfactory loss
Never got taste back
Fever
Mainly breathing issues
They died
Death
My son's grandfather
Sore throat, loss of taste and smell
Continued exhaustion, memory issues, lung concerns
Lung disease.
Hospitalization for weeks.

He has been in hospital since 8/5. On ventilator since 8/22. Worst complication was CO2 retention, and doc says it's a miracle he survived. Has lost a devastating amount of muscle mass and has significant lung damage, but all else fine. Is now working to get off ventilator and expected home in a week to continue respiratory and physical therapy.

Trouble breathing and oxygen levels are down

They all had the vaccine

Kidney Failure

Extended amount of time of weakness and being tired.

Felt sick breathing problems

Constant fatigue

My sister had covid 19, but she was not vaccinated. Also, her husband had the virus and he was in the hospital for 4 days

Fever persisting, cough, fatigue

In the hospital for two weeks

Intestinal cramps, diarrhea, constipation

They were just sick and had a cough

They have respiratory problems now.

Sick congested chest coughing fevers

Mom had flu like symptoms after 1st dose

Stopped being active was always hurting

Sick cough sneezes no taste

Trouble breathing and fever

He passed away

Long term respiratory

Just a little sick

Unable to breathe fever

Humira

Extreme fatigue and constant brain fog

Can't breathe the same

Brain fog, not as strong, tired

He has asthma and since covid his asthma is much worse

Kidney failure and depression and stomach issues

Lungs collapsed and heart gave out

Painful

My cousin continues to feel a tightness in her chest that will not go away

This person has multiple issues that they're not being told is related to Covid but they didn't have these issues before having Covid. They have issues with equilibrium, diarrhea, and sleep issues.

Death

Death

Difficult breathing

Changes in taste and smell, breathing problems.

Slowly recovering from the virus.

Blood clots

Pneumonia

Fever, coughing fatigue no appetite

Death

Still no taste and lung problems almost a year later

They died

Post covid bronchitis

Chest pain fever

That person went through hot flashes, couldn't eat, couldn't breathe, smell or even taste. Their body was very sore they were kind of bed bound.

My aunt had covid and passed

Flu symptoms

My mother. She passed away

They were really congested couldn't breathe couldn't smell couldn't eat couldn't swallow their throat was swell

They lost their sense of smell and taste

Extreme fatigue oxygen machine now.

Memory loss

They passed away.

They have asthma and it was controlled by use of 1 inhaler before they had covid 19. Now they have to use at least 3 different inhalers as well as several times a day breathing treatments and have developed heart issues from so many inhalers.

Critical condition in ice for several months. The family was called in and told he had less than an hour to live. They removed all life support and then a miracle happened he started to recover and was able to leave the hospital a couple of weeks later and was home within two months

Some friends actually died from Covid 19

Had two people die of heartbreak

They still have a little loss of taste and smell

Sickly, I just let them be at that point.

My father has not been able to walk or eat good after getting covid. He also got the covid shot and got sick 2 days after

He ended up in the hospital on a respirator because his oxygen levels where someone they didn't think he was going to live

They began to have a weakened immune system as well as a weak body

She was always shivering even if the heater was on and she was in front of a fire, lots of sniffles and runny noses, loss of taste and smell

The person had severe symptoms and was hospitalized on a ventilator for three weeks. In the middle of his stay, the condition was so severe that arrangements were made for his death.

He had a stroke and had to be on a ventilator he was not able to come back to work

My cousin got Covid and then passed away

My fiancé was hospitalized with Covid-19

Can't smell, or taste

Difficulty breathing

Can't taste anything

They person had asthma, so it affected them way more

He had bacterial pneumonia and covid. He passed away yesterday @ the age of 51.

They had a fever

She is having liver problems

My Pap died.

Dizziness, headache, high fever

Severe flu symptoms. Still exhausted.

Never got their senses back and have chest problems now

That person had asthma and passed

Had trouble breathing right

Sick

The basic stuff but they had prior health issues

They were okay, just coughing fever and a lot of sweating

They were in the hospital for over a week

Can't taste or smell

Cannot smell

They had loss of taste

The COVID health was very serious they almost died in the hospital

Flu like symptoms

They had trouble breathing and had no sense of smell or taste

Symptoms of shortness of breath and fever

It basically destroyed his lungs. He'll never work again.

Lack of stamina. Loss of smell and taste.

They said that it was bad and they wouldn't want to go through it again, shortness of breath and stuff like that it was awful

Fever sore

They both died

Hospitalized

Not being able to taste anything but chemicals when she eats.

Really difficult to breathe

Always having a headache

They were in the hospital and breathing problems

Appendix 3: Reported COVID-19 Inoculation Deaths and Injuries in Social Circles*

Comments Provided by Respondents for the Following Question: Of the people you know who experienced a health problem after being vaccinated, think about the one you know BEST. Please describe the health condition experienced by that person.

Headache, cough

Fatigue

They got COVID

Still caught covid and got sick

Covid like symptoms shortness of breath fever body aches, etc.

Comatose after heart attack

Stroke, more heart issues, blood clots,

She had a stroke.

Death

The person got a long rash on her leg that does not go away it looks like shingles but it from the covid vaccine she had introduce in her

Close to hospitalization

My little cousin had Coronavirus

Had to be admitted into the hospital for treatment. Had a temperature and inability to build up oxygen levels until put onto the hospital oxygen system

Sick and lethargic

Arthritis, blood disorder, acne, and heart burn

Died

Fatigue and general malaise

Pain

Lung problem

Covid pneumonia sepsis after booster

Fever chills

Poor energy, achiness

Higher blood pressure, higher pulse, and vertigo.

I guess know they caught COVID-19 again and this time it had them down bad sick

They were vomiting terribly and had awful fever

Heart problems

Fever

Sleepiness, loss of appetite

He died from the shot

Blood clots, circulation problems

They had experienced a blood clot reaction with the third dose.

Fatigue and breathing issues

My grandma's heart stopped 2 days after she got the vaccine.

Flu-like

Breathing problems

Severe symptoms after both shots. Sick for 4 days each time.

Extreme side effects

Hair loss, migraine

Weakened immune system

Cancer returned in his body spread all over. Died!

They passed away from covid

Decreased lung capacity

Fatigue and 2 of them caught covid within a month of vaccination

Sore muscles

Just like a flu

Stomachache, nausea, fatigue, loss of appetite, loss of smell

Pain arm

Having seizures

Breathing

Lung problems

They got autism

Troubled breathing

My sister started having heavy periods after each covid vaccine

Sepsis

Their arm was sore

Coughing and headaches

Blood clots

Had a shingles like rash all over her face, on both sides not just one. This happened March 2021. The doctors said it was in fact from the vaccine, and to this day it hasn't been cured. Mind you, she only took the vaccine to return to in person work. She didn't want to, other than that.

Heart palpitations

Heart issues

Their pre-existing condition was triggered by the vaccine.

Death

This person's health is going downhill since the shot.

They were in poor health

The only health condition experience was my arm was kind of swollen.

Died

Respiratory

She had a stroke within days of # 2 Moderna vaccine. She has to use a walker and has speech issues. She was in her 40's. She is a registered nurse.

Hospitalized for three days with breathing and heart issues. He was required to take the shot to participate in the college world series.

Got Covid but only sniffles & cough

Shortness of breath

Alzheimer's

My friend with no preexisting heart condition died of a heart failure after the second dose.

One was sick in bed a week delirious and unable to get up eat or anything (90). The other had vaccine and that evening experienced chest pain went to ER died with "stroke" (42)

Severe heart issues. 1 hour after injection my 22-year old friend had a massive heart attack and has been hospitalized for 7 months. Was very healthy and athletic before that shot

Heart issues

Heart issues

Blood clotting causing loss of limb

Death

On several medications she didn't take before for heart and breathing problems

COVID-19

They were sick for over 2 months. Weak, could not hardly breathe.

They had headaches

Heart problems

Fever and cough.

Craps

Aching, soreness

They all experienced it before the vaccines had been available.

Breathing issues are the hardest to cope with

Shaking, muscle spasms, and headache

I don't know a lot of details, but fever, achy feeling and dizziness were mentioned as well as sluggishness.

Fortunately, none were hospitalized

Arm in pain 3 days

Swollen arms

Memory loss

Contracted cov19 after the vaccine

Body aches running nose loss of appetite

Temporary psychosis that required sedation at a mental hospital.

The shot made it worse. The lose energy and the end result was death. The shot doesn't work if it did then people would not be able to get covid.

The vaccine made them sick for a few months and even after getting better they were still kind of sick

Throwing up. Fever. Headache

Migraine and dizziness

They had nerve problems in their legs and they were weak

Migraines that never seem to go away when they almost never had one before.

Just pain: muscle pain

After getting the vaccine they started having seizures about 2 months after receiving the vaccine and never had any problems until they received the vaccine

They were bed ridden for a week with the biggest problem trying to breath with extreme fatigue

Her immune system attacked her kidneys

Fever chills aches for about 24 hours

Catches

Health problems

They died

Significant pain that was not there before

Blood clots

My great grandmother got sick after she got the shot

Skin issues

Nausea, headache

Felt like they had fever and their arm was very sore.

Pain and swelling in the arm that was injected. Also stomach pains

He had chest problems hard for him to breath and he seems his other skills are slower

Death

My daughter was ill enough to be bedridden after the first and second Moderna vaccine. It only lasted about 12 hours though.

Hospitalized and on a ventilator for 3 days.

In hospital but was out in 3 weeks

They had dizziness. Trouble with vision

Got COVID 19 and had to be hospitalized

Vomiting steady soreness

Got really sick and all most died because it is poison

They had headaches felt feverish their injection was swollen

Experience more body aches

Redness, soreness, lymphadenopathy, myalgias, fever, and headache within hours of getting booster.

Health, confusion is really bad

Getting COVID

Nausea. Heart issues high bp hard to move around

Trouble breathing

They just had a very bad flu like cold

A member of my church died from blood clot surgery less than a week after having a covid vaccine in the hospital during recovery

Vomiting, dizziness, ringing in ears for approximately 3 months

Flu like symptoms and a severe cold

They almost died

They received the vaccine and after they immediately started having health issues with headaches and shortness of breath and their immune system was compromised.

Cousin 47-stroke Cousin- blood clots Friend-death Aunt- death

Loss of taste

Both people got Covid shortly after receiving vaccine.

He died after 5 weeks, he was a diabetic and his kidneys shut down after getting COVID 15 days after vaccine

Two of our children, both nurses, suffered intense flu like symptoms

Heart problems

Got the vaccine shot and it went against the body n he's died

Death

They experienced a mild heart attack

Bruising and lung

Numbness on side of injection

They couldn't breathe for a minute and was rushed to the hospital

Blood clot

They got covid

Two months of dizziness, vertigo, anxiety, terrible sleep

Death from a heart attack after vaccination by a few weeks.

Lack of taste

Coughing fever

It was severe but so far cannot tell if it's lasting or not.

ICU. Then a deceased.

III

The same person experienced fever and extreme fatigue.

Issues with their heart

Died

No taste or smell and some breathing problems

Felt like a case of the flu

Heart attack

Death

Difficulty breaking, constant coughing and trouble breathing with fever

Soreness, short of breath, fever, body aches

Close friend began having cardiac issues after vaccination.

Anaphylactic shock twice. Nearly killed my mother.

Neurological damage and a spontaneous pneumothorax

Death

Death

Weakens immune system

Stiff neck and sickness flu symptoms and time off work and school

Hemorrhagic stroke

Not good for health

Sore and body aches

Flu symptoms for up to a full week

It made them really light-headed and passed out

Blood clots.

They started to hemorrhage and almost lost baby

Heart conditions

My father, low energy and a significant change in his health declining. Still has a rough time breathing and now uses a cpap machine.

Went to hospital with pneumonia then blood clots in legs, can walk but not far and weak.

Death

Only vaccine side effects

Scary

My cousin had an allergic reaction to the shot

My brother because he was allergic

Menstrual cycles off drastically, memory loss, post-nasal drip, prone to sinus infections

It was bad, sad and I was so sad for her

They began to have extreme head aches and stomach aches. They were extremely drowsy and weak.

Could not taste or smell things

Depression, anxiety

Loss of limbs due to receiving the original covid Vaccine...

Trouble breathing

Couldn't taste

My mother's back started hurting and now she has on again off again back problems and she's young she's in her late 30s.

They died

Spots on their face and body weakness

They got sick and got covid directly after getting the vaccine.

They still can't walk without catching their breath

Migraines

Asthma

No illness, just bad coughing

Neurological issues

They was sick for a couple of days with a swollen arm

Joint pain for months

Breathing and constant pain in arm. Constantly getting migraines

Heart and lung issues

Headaches or feeling nauseous

Horrible

They got covid 19

Throwing up

Seizure, hospitalization, life has been altered. Partially paralyzed

Myocarditis

My uncle had lung problems

They were quite gassy

They went into a cardiac arrest and passed away

Very sick

Never got over covid

They had flu like symptoms- fever, nausea, diarrhea. Pain at injection site. Tiredness. Headache

Paralyzed, waist down

She had gotten cold quicker and for three days a runny nose.

Bad breathing

Tired

Long hauler

They had the worst week/month I felt bad for them

Mini stroke

Heart palpitations Tachycardia

Illness

I know nothing more than that of the scaling skin condition

He was as ill for about 10 days

Soreness

It was horrible

Headaches, stomach pain, arms sore

Paralyzed him

It affected their energy and breathing even after they supposedly got better.

Flu like symptoms

They experience body aches, fever severe headaches low energy

Sick

The mother of friend she was vaccinated and the next day she died

She lost her baby

Very bad and sick

His heart was hearting

Healthy

Coughs

Died

One died, one had a heart attack and one had a blood clot

She had migraines and confusion about everyday things like time, if she did something she was supposed to or forgot about it...she still has confusion at times

Extreme fatigue, fever, body aches and pains, respiratory issues

Body aches, no smell or taste

Lung problems or sinuses problem as a detect result of weather changes

Developed COVID-19 sometime after receiving the vaccine

Hospitalized for a week

Death with organ failure

They got covid after taking the vaccine and have had ongoing symptoms

They died

They died

Side effects

Dizziness—vision problems

The person I know vomited and had serious migraines for about a week after both the second and third doses. Mild temperature of about 100.1

Death

She can no longer smell

Chills and fever and lots of pain

Had an allergic reaction.

Bell's palsy

Sick

Severe cough and hard to breath

Teenagers developed heart problems

Aches and pains as well as lung issues

They had some reactions

Cough trouble breathing

The lack of smell and taste

Not being able to breathe and being extremely sick overall.

They died

Had flu like symptoms for weeks

Lack of energy, and general feeling of something wasn't right

Horrible they died

The person had really bad heart problems

Swollen legs

No vomiting

Elevated heart issues, high blood pressure, previous conditions come back, death.

Throat closed

It was horrible

Numbness in parts of body

A lot of coughing and chest pains

They said they felt weaker and less efficient in working on things

Died from covid

Struggling to get up after you been vaccinated

Breathing problems

Died

Breathe problem

She has not felt the same as she did before the shot. She has most days now not feeling good and don't have as much energy as she had before.

They died.

They were sick a very long time. They found out they had an allergic reaction

Pneumonia, dehydration

Blood pressure issues and kidney issues and more issues

Caught pneumonia

They were sick for several days with flu like symptoms

No fever, sniffles, or coughing before the shot. Multiple symptoms after.

Chronic headache

Cough

Ended up dying from a reaction to the drug which caused a major heart attack

Experience soreness and pain and fatigue along with migraines for at least three days and she had to rest and was exhausted drained of energy could not continue her door dash delivery

They got pneumonia after the first shot. They got well and got the second shot and got pneumonia again and died.

Enlarged heart

Their asthma got worse. More sinus infections

Enlarged heart

Headaches

Got sick day after shot. Was in coma. Breathing difficulties, racing heart, fatigue

Died

Rash and a case of hives.

Fever

They lost their sense of smell and taste. Also know someone who got extremely sick after receiving the vaccine and they had to be hospitalized.

Hard time breathing

Tired and sleepy after shot

Blood clots

Heart problems breathing problems

One of them lost her life. The other got sick and got over then got sick 2 times after.

She got the Moderna Vaccine, and it gave her COVID-like symptoms for 3 or 4 days before it went away.

Chest pain with cough, sinus problems, Fatigue, sleepy more than 12 hrs a day, body cramps, weak muscles, headache, fever, sores in mouth and throat. Bruised easily. Major body aches and pain, stiffness.

Developed covid and died

They ran a fever. Shaking uncontrollably and jerking. Vomiting and soreness in muscles. Aches and pains

Individual experienced a mild stroke from excessive blood clotting

Heart palpitations

They ended up getting covid right after the vaccinations and lost their sense of taste

The felt weak and fatigue for days and the heartbeat was fast

Got covid

Mostly flu like symptoms and fatigue

Blood clots and suffered a stroke

Harder to breathe, have no energy feverish

Just sick for 2 weeks

Died

Heart condition. New conditions never had previous issues. One passed away

Heart failure

They got it really bad

Soreness, problems breathing sleepiness, etc.

She had shivers after the vaccine

Rash heart problems breathing problem

Had a stroke 3 weeks later

Weak, delirious

Fatigue and headaches

Had a massive heart attack.

They developed covid

Blood clots and heart problems

Blood clots

Chills

High blood pressure seizures

Made us all super sick for days.

We're hospitalized with various issues

Fever

Can't eat certain things

Vision and death

Depression digestion severe fatigue and asthma

Painful

Drug reaction from change in prescription.

High fever, weakness

High fever, coughing

Blood clots

Soreness in arm, vomiting

He did have the virus he through, he was coughing

Lung and nervous system shut down

Fever and chest pain

All standard covid symptoms

Died

Lost their taste of smell and taste

Their health dropped drastically, and they are still not better.

Heart problems & having to be on a heart monitor for a week.

Headaches.

She got covid and ended up in the hospital for 4 days.

He contracted covid 3 times after his vacations and still experiences major body pain and weakness

My sister had to be rushed to the emergency room

They got sick with all symptoms of COVID 19 eventually recovered

After getting the shot he got sick with covid. He can't walk without assistance.

They have covid

He can still feel the injection in his arm and once in a while his arm goes completely numb. He also gets rapid beating heart beats off and on throughout the week that he has never had before

Whooping cough

Stroke

Severe vomiting, diarrhea, and dizziness

They were sore for about 2 weeks and couldn't move after lying down for a long time.

Chills and fever

Aching all over

Loss of taste, smell

Extremely sick for almost a month. Caught covid real bad. Has breathing problems and got put on a machine

Breathing trouble and ventilator

COVID 19

Heart

Pain and swelling in arm

Loss of sense of smell

The health was having trouble breathing

Energy

Within after hours of being vaccinations, she became super sick fever etc. It took her days to stop feeling like pneumonia was not in her lungs.

Bell's palsy

Made them very tired and weak

Smallpox

My mom passed two weeks after receiving the vaccine. (This event was originally reported under the lasting COVID-19 illness issues.)

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