

Vaccine Hesitancy Findings

March 9, 2022

[File name: 1_heatmap_percent_by_yes_states.pdf](#)

Definition of document: The % of all respondents who answered “Yes” to the reason for hesitancy out of all respondents who reported some level of vaccine hesitancy over the entire study period (February 2021 to February 2022), broken down by state. Participants were able to select all reasons that applied to them.

Key takeaways:

- 1) Concern about side effects of a COVID-19 vaccine was the most cited reason for hesitancy. Respondents in Wyoming had the highest percentage reporting this reason at 13%, followed by North Dakota at 12%, and Alabama, Idaho, Mississippi, Missouri, Oklahoma, and Tennessee at 11%.
- 2) Other key reasons for hesitancy included lack of belief in a personal need for the COVID-19 vaccine, lack of trust in the government, and planning to wait and see if the vaccine is safe and getting it later.
- 3) The states that reported the highest percentage saying that they did not need a COVID-19 vaccine were similar to the concern for side effects: Wyoming at 9%, Idaho and North Dakota at 8%, and Montana and South Dakota at 7%.
- 3) The states that reported the highest percentage saying that they do not trust the government were similar to both the previous concerns: Wyoming at 11%, North Dakota at 9%, and Alabama, Idaho, Louisiana, Mississippi, Missouri, Montana, Oklahoma, South Dakota, and Tennessee at 8%.
- 4) The distribution of the percentage of respondents reporting that they planned to wait and see if the COVID-19 vaccine was safe was more homogenous than the other questions, with all states reporting between 3% and 7% hesitancy.

[File name: 2_heatmap_percent_by_yes_states_FEB21_JUL21.pdf](#)

Definition of document: The % of all respondents who answered “Yes” to the reason for hesitancy out of all respondents who reported some level of vaccine hesitancy over the first half of the study period (February 2021 through July 2021), broken down by state. Participants were able to select all reasons that applied to them.

Key takeaways:

- 1) Concern about side effects of a COVID-19 vaccine was the most cited reason for hesitancy. Respondents in Alabama, Mississippi, North Dakota, Tennessee, and Wyoming had the highest reported hesitancy at 14% followed by Arkansas, Georgia, Idaho, Kentucky, Louisiana, Missouri, and Oklahoma at 13%. These values were generally higher than for the whole time period, but not drastically so. In general, many states reported higher levels of hesitancy concerning side effects for this period compared to the full time period.
- 2) Other key reasons for hesitancy included lack of belief in a personal need for the COVID-19 vaccine, lack of trust in the government, planning to wait and see if the vaccine is safe and getting it later, lack of belief that a COVID-19 vaccine will work, and lack of trust in COVID-19 vaccines. These last two appeared to be marginally more cited in this first time period versus the entire time period.

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3) The percentages that responded waiting to see if the vaccine was safe and may get it later were broadly higher during this period when compared to the full time series, with the bulk of states (47 of 51) having percentages between 6% and 10%.

[File name: 3_heatmap_percent_by_yes_states_AUG21_FEB22.pdf](#)

Definition of document: The % of all respondents who answered “Yes” to the reason for hesitancy out of all respondents who reported some level of vaccine hesitancy over the second half of the study period (August 2021 to February 2022), broken down by state. Participants were able to select all reasons that applied to them.

Key takeaways:

- 1) Concern about side effects of a COVID-19 vaccine was still the most cited reason for hesitancy. Respondents in Wyoming had the highest reported hesitancy at 15% followed by Idaho and North Dakota at 13% and Alabama, Mississippi, Missouri, Montana, Oklahoma, and Tennessee at 12%. These values were generally higher than for the whole time period, but not drastically so.
- 2) Other key reasons for hesitancy included lack of belief in a personal need for the COVID-19 vaccine, lack of trust in the government, planning to wait and see if the vaccine is safe and getting it later, lack of belief that a COVID-19 vaccine will work, and lack of trust in COVID-19 vaccines.
- 3) The percentages that responded waiting to see if the vaccine was safe and may get it later were lower during this period when compared to the earlier time period, with the nearly all states (50 of 51) having percentages between 2% and 6%.
- 4) The percentages reporting lack of trust in the government were generally higher in this period versus the earlier time period, with Wyoming having the highest percent hesitant at 13%, followed by North Dakota at 11%, and Idaho at 10%.

[File name: 4_heatmap_percent_by_yes.pdf](#)

Definition of document: The % of all respondents who answered “Yes” to the reason for hesitancy out of all respondents who reported some level of vaccine hesitancy over the entire study period (February 2021 to February 2022), broken down by demographics. Participants were able to select all reasons that applied to them.

Key takeaways:

- 1) Concern about side effects of a COVID-19 vaccine was the most cited reason for hesitancy. Participants reporting their race and ethnicity as Non-Hispanic and Multiple Other Races had the highest hesitancy across all demographics at 17%, followed by those aged 18–24 and participants in goods-producing occupations at 15%, and participants in trade, transportation, and utilities occupations at 14%. There was a noticeable gradient in replies in both age and education, as those who were older and had more education were less likely to report this reason.

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2) Other key reasons for hesitancy included lack of belief in a personal need for the COVID-19 vaccine, lack of trust in the government, planning to wait and see if the vaccine is safe and getting it later, lack of belief that a COVID-19 vaccine will work, and lack of trust in COVID-19 vaccines.

3) Those respondents who were more likely to say that they did not trust the government were similar to those who had concern for side effects. Participants reporting their race and ethnicity as Non-Hispanic and Multiple Other Races had the highest hesitancy across all demographics at 15%, followed by participants in goods-producing occupations at 13%, and participants in trade, transportation, and utilities occupations at 11%. Males reported this as a reason twice as much as females (8% of males versus 4% of females).

4) Those respondents who were more likely to say that they did not need a COVID-19 vaccine were similar to those who had concern for side effects. Participants reporting their race and ethnicity as Non-Hispanic and Multiple Other Races had the highest hesitancy across all demographics at 12%, followed by participants in goods-producing occupations at 11%, and participants in trade, transportation, and utilities occupations at 10%. Males reported this as a reason about twice as much as females (7% of males versus 3% of females).

4) Those respondents who were more likely to say that they wanted to wait to see if a vaccine was safe and possibly get it later were younger (18–24-year-olds at 13% hesitancy and 25–34-year-olds at 9%), and reported their race and ethnicity as Non-Hispanic and Multiple Other Races (10%). Males and females answered yes to this category at approximately the same percentage.

[File name: 5_heatmap_percent_by_yes_FEB21_JUL21.pdf](#)

Definition of document: The % of all respondents who answered “Yes” to the reason for hesitancy out of all respondents who reported some level of vaccine hesitancy over the first half of the study period (February 2021 through July 2021), broken down by demographics. Participants were able to select all reasons that applied to them.

Key takeaways:

1) Concern about side effects of a COVID-19 vaccine was the most cited reason for hesitancy. Participants reporting their race and ethnicity as Non-Hispanic and Multiple Other Races and participants aged 18–24 had the highest hesitancy across all demographics at 20%, followed by participants in goods-producing occupations at 17%, and both those aged 25–34 and participants in trade, transportation, and utilities occupations at 16%. There was a noticeable gradient in replies in both age and education, as those who were older and had more education were less likely to report this reason. These values were generally higher than for the whole time period, but not drastically so.

2) Other key reasons for hesitancy included lack of belief in a personal need for the COVID-19 vaccine, lack of trust in the government, planning to wait and see if the vaccine is safe and getting it later, lack of belief that a COVID-19 vaccine will work and lack of trust in COVID-19 vaccines. During this period, it seemed like people had many more reasons for hesitancy, providing more answers, compared to the later time period where there were clearly a handful of preferred answers.

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3) Similar patterns were seen for this time period for belief that a respondent did not need the COVID-19 as for the whole time period, though values were slightly higher. Participants reporting their race and ethnicity as Non-Hispanic and Multiple Other Races and participants in goods-producing occupations had the highest hesitancy across all demographics at 13%, followed by participants in trade, transportation, and utilities occupations at 11%. Males reported this as a reason about twice as much as females (7% of males versus 4% of females).

4) Similar patterns were seen for this time period for belief that a respondent did not trust the government as for the whole time period, though values were slightly higher. Participants reporting their race and ethnicity as Non-Hispanic and Multiple Other Races had the highest hesitancy across all demographics at 16%, followed by participants in goods-producing occupations at 15%, and participants in trade, transportation, and utilities occupations as well as those aged 18–24 at 12%. Males reported this as a reason approximately 1.5 times as much as females (8% of males versus 5% of females).

5) Similar patterns were seen for this time period for the respondents who wanted to wait and see if the vaccine was safe as for the whole time period, though values were slightly higher. Participants were younger (18–24-year-olds had 18% hesitancy and 25–34-year-olds had 13%), and those who reported their race and ethnicity as Non-Hispanic and Multiple Other Races also had 13% hesitancy. Males and females answered yes to this category at approximately the same percentage.

[File name: 6_heatmap_percent_by_yes_AUG21_FEB22.pdf](#)

Definition of document: The % of all respondents who answered “Yes” to the reason for hesitancy out of all respondents who reported some level of vaccine hesitancy over the first half of the study period (August 2021 to February 2022), broken down by demographics. Participants were able to select all reasons that applied to them.

Key takeaways:

1) Concern about side effects of a COVID-19 vaccine was still the most cited reason for hesitancy. Participants reporting their race and ethnicity as Non-Hispanic and Multiple Other Races had the highest hesitancy across all demographics at 19%, followed by participants in goods-producing occupations at 18%, and both participants aged 18–24 years old and participants in trade, transportation, and utilities occupations at 16%. There was a noticeable gradient in replies in both age and education, as older participants with more education were less likely to report this reason.

2) Other key reasons for hesitancy included lack of belief in a personal need for the COVID-19 vaccine, lack of trust in the government, planning to wait and see if the vaccine is safe and getting it later, lack of belief that a COVID-19 vaccine will work, and lack of trust in COVID-19 vaccines.

3) Similar patterns were seen for this time period for belief that a respondent did not need the COVID-19 as for the whole time period. Participants reporting their race and ethnicity as Non-Hispanic and Multiple Other Races and participants in goods-producing occupations had the highest hesitancy across all demographics at 14% followed by participants in trade, transportation, and utilities occupations at 12%. Males reported this as a reason about twice as much as females (8% of males versus 4% of females).

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4) Similar patterns were seen for this time period for belief that a respondent did not trust the government as for the whole time period. Participants reporting their race and ethnicity as Non-Hispanic and Multiple Other Races had the highest hesitancy across all demographics at 17%, followed by participants in goods-producing occupations at 16%, and participants in trade, transportation, and utilities occupations at 13%. Males reported this as a reason nearly twice as much as females (9% of males versus 5% of females).

5) Similar patterns were seen for this time period for the respondents who wanted to wait and see if the vaccine was safe as for the whole time period, though values were lower. Participants were younger (18–24-year-olds at 12% hesitancy and 25–34-year-olds at 9%), and reported their race / ethnicity as Non-Hispanic and Multiple Other Races 9%. Males and females answered yes to this category at approximately the same percentage.

[File: Vaccine Hesitancy Regression Models.xlsx](#)

[Tab: Odds hesitant multivariable](#)

Definition of document: This analysis modeled the relationships for the odds of those who answered they would probably get the COVID-19 vaccine, they would probably not get the COVID-19 vaccine, or they would definitely not get the COVID-19 vaccine over those who answered that they definitely would get the COVID-19 vaccine or had an appointment scheduled to receive the vaccine. All demographic variables were modeled together, controlling for time (week of survey) and clustering by state.

Key takeaways:

- 1) Those responding to this survey had significantly increasing odds of hesitancy over time.
- 2) When compared to 18–24-year-olds, age groups over 45 years had significantly lower odds of being hesitant, while 25–34-year-olds actually had significantly higher odds of being hesitant.
- 3) Non-Hispanic Asian respondents had significantly lower odds of being hesitant compared to Hispanic respondents, while all other race and ethnicity groupings had significantly higher odds compared to Hispanic respondents.
- 4) Males had significantly lower odds of hesitancy versus females. This effect size was small (4% lower odds), but still significant
- 5) Compared to those with less education than a high school diploma, those with some college or more had significantly lower odds of vaccine hesitancy, while those with a high school diploma or GED actually had higher odds of hesitancy.
- 6) All listed occupation groupings had significantly higher odds of vaccine hesitancy than those working in the service providing occupational field.

[File: Vaccine Hesitancy Regression Models.xlsx](#)

[Tab: Odds reason dont need it multi](#)

Definition of document: This analysis modeled the relationships for the odds of those who answered that they did not need the COVID-19 vaccine (answered “Yes”) over those who answered “No” to this question. All demographic variables are modeled together, controlling for time (week of survey) and clustering by state.

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Key takeaways:

- 1) Those responding to this survey had significantly higher odds of saying they did not need the COVID-19 vaccine over time.
- 2) When compared to 18–24-year-olds, all age groups had significantly lower odds saying they did not need the COVID-19 vaccine.
- 3) Non-Hispanic Asian and Non-Hispanic Black respondents had significantly lower odds of saying they did not need the COVID-19 vaccine compared to Hispanic respondents; this was different for Non-Hispanic Black respondents who had overall higher odds of hesitancy, but lower odds of saying they did not need the COVID-19 vaccine. Non-Hispanic American Indian or Alaskan Native, Non-Hispanic Multiple other Races, and Non-Hispanic White respondents all had higher odds of saying they did not need the COVID-19 vaccine compared to Hispanic respondents.
- 4) Males had significantly higher odds of saying they did not need the COVID-19 vaccine compared to females, in contrast with their odds of being hesitant (lower). The effect size for this variable was much larger, suggesting a two-fold increase in odds compared to females.
- 5) Compared to those with less education than a high school diploma, those with any higher levels of education had higher odds of saying they did not need a COVID-19 vaccine, with a general increasing trend with increasing education levels. This was the opposite trend of overall hesitancy.
- 6) Only those in goods-producing occupations and in trade, transport, and utilities occupations had significantly higher odds of saying they did not need the COVID-19 vaccine than those working in the service providing occupational field.

[File: Vaccine Hesitancy Regression Models.xlsx](#)

[Tab: Odds reason dont trust gov mult](#)

Definition of document: This analysis modeled the relationships for the odds of those who answered that they did not trust the government (answered “Yes”) over those who answered “No” to this question. All demographic variables are modeled together, controlling for time (week of survey) and clustering by state.

Key takeaways:

- 1) Those responding to this survey had significantly higher odds of saying they did not trust the government over time.
- 2) When compared to 18–24-year-olds, age groups between 35 and 64 had lower odds of saying they did not trust the government.
- 3) Non-Hispanic Asian respondents had significantly lower odds of saying they did not trust the government compared to Hispanic respondents. Non-Hispanic American Indian or Alaskan Native, Non-Hispanic Black, Non-Hispanic Multiple other Races, and Non-Hispanic White respondents all had higher odds of saying they did not trust the government compared to Hispanic respondents.

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- 4) Males had significantly higher odds of saying they did not trust the government compared to females, in contrast with their odds of being hesitant (lower). The effect size for this variable was much larger, suggesting a 1.7-fold increase in odds compared to females.
- 5) Compared to those with less education than a high school diploma, those with a high school diploma, GED, some college, or an Associate's degree had higher odds of saying they did not trust the government. This relationship was not seen for Bachelor's degree or graduate degree education levels.
- 6) All occupations had significantly higher odds of saying they did not trust the government than those working in the service providing occupational field.

[File: Vaccine Hesitancy Regression Models.xlsx](#)

[Tab: Odds reason side effects multi](#)

Definition of document: This analysis modeled the relationships for the odds of those who answered that they were concerned about side effects of the COVID-19 vaccine (answered "Yes") over those who answered "No" to this question. All demographic variables are modeled together, controlling for time (week of survey) and clustering by state.

Key takeaways:

- 1) Those responding to this survey had significantly higher odds of saying they were concerned about side effects of the COVID-19 vaccine over time.
- 2) When compared to 18–24-year-olds, all older age groups had lower odds of saying they were concerned about side effects of the COVID-19 vaccine.
- 3) Non-Hispanic American Indian or Alaskan Native respondents had significantly lower odds of saying they were concerned about side effects of the COVID-19 vaccine compared to Hispanic respondents. This was different for Non-Hispanic American Indian or Alaskan Native respondents who overall had higher odds of hesitancy, but lower odds of saying they had concerns about side effects. Non-Hispanic Asian, Non-Hispanic Black, Non-Hispanic Multiple other Races, and Non-Hispanic White respondents all had higher odds of saying they were concerned about side effects of the COVID-19 vaccine compared to Hispanic respondents. This was different for Non-Hispanic Asian respondents who overall had lower odds of hesitancy, but higher odds of saying they had concerns about side effects.
- 4) Males had significantly lower odds of saying they were concerned about side effects of the COVID-19 vaccine compared to females, with a reduction of about 20% in odds.
- 5) Compared to those with less education than a high school diploma, those with higher education levels all had higher odds of saying they were concerned about side effects of the COVID-19 vaccine.
- 6) All occupations had significantly higher odds of saying they were concerned about side effects of the COVID-19 vaccine than those working in the service providing occupational field, a contrast to overall higher odds of general vaccine hesitancy.

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File: [Vaccine Hesitancy Regression Models.xlsx](#)

Tab: [Odds reason wait for safety mul](#)

Definition of document: This analysis modeled the relationships for the odds of those who answered that they wanted to wait and see if the vaccine was safe (answered “Yes”) over those who answered “No” to this question. All demographic variables are modeled together, controlling for time (week of survey) and clustering by state.

Key takeaways:

- 1) Those responding to this survey had significantly lower odds of saying they wanted to wait and see if the vaccine was safe over time. This was the only reason for hesitancy we looked at in depth that decreased over time.
- 2) When compared to 18–24-year-olds, all older age groups had lower odds of saying they wanted to wait and see if the vaccine was safe.
- 3) Non-Hispanic Asian and Non-Hispanic Black respondents had significantly lower odds of saying they wanted to wait to see if the vaccine was safe than Hispanic respondents. This was different for Non-Hispanic Asian respondents who overall had lower odds of hesitancy, but higher odds of saying they did not need the COVID-19 vaccine. Non-Hispanic American Indian or Alaskan Native, Non-Hispanic Multiple other Races, Non-Hispanic Native Hawaiian or Pacific Islander, and Non-Hispanic White respondents all had lower odds of saying they did not need the COVID-19 vaccine compared to Hispanic respondents. This was in contrast to the overall vaccine hesitancy for these race and ethnicity groupings who overall had higher odds of vaccine hesitancy.
- 4) Males had significantly lower odds of saying they wanted to wait and see if the vaccine was safe compared to females, with a reduction of about 28% in odds.
- 5) Compared to those with less education than a high school diploma, those with some college, an Associate’s degree, or a Bachelor’s degree had significantly higher odds of saying they wanted to wait and see if the vaccine was safe.
- 6) All occupations had significantly lower odds of saying they wanted to wait and see if the vaccine was safe than those working in the service providing occupational field.