



Vaccine Hesitancy & Approach to Action

An Anthropological Study in Southern Colorado

August 2021



FEMA

**Cover image. Vaccination mobile clinic for migrant farmworkers.
FEMA personnel helped register migrant farmworkers during mobile vaccine outreach efforts,
organized by the Pueblo County Department of Public Health & Environment and FEMA.
Photo credit: FEMA.**

Lead Authors

Katherine E. Browne, PhD, Colorado State University, Department of Anthropology/Culture and Disaster Action Network (CADAN).

Joshua Bauer, Colorado State University, Department of Anthropology.

Shadi Azadegan, MA, Colorado State University, Department of Anthropology.

Contributing Authors

Joyce Rivera-González, University of Notre Dame, Department of Anthropology/Culture and Disaster Action Network (CADAN).

Julie Maldonado, PhD, Livelihoods Knowledge Exchange Network (LiKEN)/Culture and Disaster Action Network (CADAN).

Keely Maxwell, PhD, Environmental Protection Agency/Culture and Disaster Action Network (CADAN).

Laura Olson, PhD, Georgetown University, Emergency & Disaster Management Program/Culture and Disaster Action Network (CADAN).

Acknowledgements

Funding support for this research was provided by FEMA's Higher Education Program. All conclusions herein are the responsibility of the writing team.

Table of Contents

Introduction.....	1
Purpose and Outcome	1
Project Objectives.....	1
A Note about Actionable Recommendations.....	2
A Note about Terms.....	2
Why Pueblo?	3
Goals, Value, and Methodology of Our Study	6
Research Goals and Value of this Study.....	6
Why an Anthropological Approach?.....	7
How the Principle of Equity is Centered in our Project.....	8
Pilot Testing a Methodology to Engage with Socially Marginalized Communities.....	9
Example of our Experience with Culture Brokers	10
Social and Political Context	11
Understanding Vaccine Hesitancy in the U.S. and the Mistrust of Government.....	11
State of Colorado Vaccine Progress and Southern Colorado Exception.....	13
COVIDCheck Colorado Vaccine Hesitancy and Access Survey	17
Historical Legacies of Harm to Specific Populations	17
Research Results: Five Focus Groups	19
Pueblo Rescue Mission Homeless Shelter: One Mixed-Gender Focus Group.....	19
Overview	19
Rescue Mission Residents: Messengers Who Tip the Balance Toward Vaccine Hesitancy .	19
Rescue Mission Residents Summary.....	21
Pueblo County Jail Inmates: One Male and One Female Focus Group.....	21
Overview	21
Male Inmates: Living by the Man Code in a Broken System	22
Male Inmates Summary.....	22
Female Inmates: Distrust in Institutions and Corporations	23
Female Inmates Summary.....	23
Latina Women and Latino Migrant Farmworkers—One Female and One Male Focus Group	25
Overview	25

Low Wage Latina Women: “Long-haulers” Wary of Vaccines and the Medical System	25
Latina Women Summary	26
Overview of Farmworkers	26
Latino Male Farmworkers: Breadwinners’ Fear of Losing their Job and Identity	27
Farmworkers Summary.....	27
Recommendations.....	28
Graphic Representations of this Project: From Data Collection to Recommendations.....	28
About the Tables	28
The Content of Table 1.....	28
The Content of Table 2.....	28
Recommendations for the Near-Term	40
Build on this Research Project	40
Build Vaccine Confidence	40
Build FEMA’s Capacity to Employ Culture Brokers as Facilitators.....	41
Recommendations for Longer-term Opportunities: Addressing Needs as a Basis for Equitable Outcomes.....	41
Build Equitable Approaches Across the U.S.	41
Support the FEMA Administrator’s Vision	41
Support Social Science Research	41
Recommendations for Methodological Applications: Using Culture Brokers to Build Trust in Communities.....	41
Build Capacity in the Emergency Management Sphere for 21 st Century Challenges	41
Think About Stakeholders and Vital Partnerships in a Fresh Way	41
Acknowledgments.....	42
References Cited	42

Vaccine Hesitancy & Approach to Action: An Anthropological Study in Southern Colorado¹

Introduction

On January 21, 2021, the Biden Administration published its *National Strategy for the COVID-19 Response and Pandemic Preparedness*,² which bolstered the role of the Federal Emergency Management Agency (FEMA), enhancing its ability to support U.S. states and communities fighting on the frontlines of the pandemic. Included among the new roles and responsibilities accorded to FEMA was the management, set-up, and operation of federally-supported Community Vaccination Centers (CVC's).³ In the interest of the stated goal to achieve “equitable distribution of vaccines,” these mass vaccination sites were expected to include counties with higher than average “social vulnerability” ratings. FEMA supported these sites with financial assistance, federal equipment and supplies, and agency personnel.

Purpose and Outcome

Our primary purpose in this project is to understand why socially marginalized communities generally show low vaccination rates. These communities represent some of the “gaps” in vaccine delivery that President Biden discussed in his administration’s January 2021 plan, *National Strategy for the COVID-19 Response and Pandemic Preparedness*.⁴ With this purpose, our task was to learn the specific reasons for these gaps, to document the social contexts that gave rise to different types of vaccine hesitancy, and to provide potential solutions to improve vaccine uptake. Beyond these goals, our equity-based cultural approach may offer actionable insights for a variety of other disaster management efforts.

Project Objectives

- Identify socially marginalized populations in Pueblo and community-based advocates by area.
- Apply our Culture Broker methodology to help recruit vaccine-hesitant community members to participate in focus groups and to help lead these sessions.
- Conduct original research in Pueblo using focus groups in under-resourced communities.

¹ This study has been supported financially by FEMA’s Higher Education Program and logistically by the leadership team at Region VIII Headquarters.

² [White House COVID-19](https://www.whitehouse.gov/priorities/covid-19/) (https://www.whitehouse.gov/priorities/covid-19/)

³ In Colorado, these sites are called Community Vaccination Sites (CVS's).

⁴ [National Strategy for the COVID-19 Response and Pandemic Preparedness](https://www.whitehouse.gov/wp-content/uploads/2021/01/National-Strategy-for-the-COVID-19-Response-and-Pandemic-Preparedness.pdf) (https://www.whitehouse.gov/wp-content/uploads/2021/01/National-Strategy-for-the-COVID-19-Response-and-Pandemic-Preparedness.pdf)

- Conduct secondary research to contextualize the pandemic experiences of communities represented by our focus groups in relation to their social and historical circumstances.
- Analyze research data for patterns in vaccine hesitancy in relation to larger socio-historical contexts.
- Develop actionable, context-relevant suggestions that address our research findings about barriers to vaccination.
- Prepare report about research process, findings, and recommendations.

A Note about Actionable Recommendations

The concluding section of this research report presents four sets of actionable recommendations that respond to the urgent need to increase vaccinations in this country. The first of these recommendations appear as two ready-reference tables (see page 28). These tables contain summaries of the data and action plans related to messaging and other activities that correspond to our insights.

A Note about Terms

In the field of disaster anthropology, other social science fields, and many public health programs, the use of “vulnerability” to refer to people or communities in need is considered misleading. In usage by local, state, and federal governments, “vulnerability” is typically assigned as a static “attribute” of people or communities.⁵ The effect is to describe people themselves as helpless and weak, lacking the capacity for resilience. Metrics used to “rate” social vulnerability across regions also do not consider historical contexts that contribute to existing disparities of income, basic health care, and education. In fact, communities of color have, for generations, demonstrated their stamina, resilience, and creativity in order to survive histories of bias and struggle.⁶ Referring to people as “vulnerable” directs attention to an individual deficit rather than to the systems and structures that have “made” people vulnerable.⁷ Similarly, we do not use the term “underserved” to describe such communities since this word suggests a benign gap of services that are not available to some groups. Instead, because communities of color continue to be oppressed by historical inequities and wide-ranging injustices owing to their stigmatization, in this report, we refer to such communities as “marginalized,” “under-resourced,” or “historically disadvantaged.” Although each of these terms has a specific meaning, we use them interchangeably to point out the relevance of all

⁵ See Marino & Faas 2020. [“Is Vulnerability an Outdated Concept? After Subjects and spaces.”](https://doi.org/10.1111/napa.12132) (https://doi.org/10.1111/napa.12132)

⁶ Browne 2015. *Standing in the Need: Culture, Comfort, and Coming Home after Katrina*.

⁷ Davis et al. report on “Support Strategies for Socially Marginalized Neighborhoods...” July 2021.

these meanings. These choices offer a way to be clear about the social realities we encountered that give rise to vaccine hesitancy.

Why Pueblo?

Pueblo is the poorest metropolitan area in Colorado, located about 115 miles due south of Denver. The 112,000 residents of the city include 51% who identify as Hispanic/Latinx compared to 44% who identify as White, Non-Hispanic.⁸ Nearly a quarter live below the poverty line. This rate of poverty is more than double the state average and nearly double the national average.⁹ Among the city's poor, 28% identify as Hispanic/Latinx, and 35% as Black. Further, only 14% of Puebloans hold college degrees, which is half of the national average. The steel industry that for generations thrived in the area has waned significantly in recent decades, a change that has had a tremendous impact on the city that once depended socially and economically on it.¹⁰ Presently, Pueblo's working-class residents are employed mostly in the construction, food service, and health care sectors. Still, unemployment in Pueblo is 9.4% while statewide it is only 6.2%.¹¹



Figure 1. Map of Pueblo and Colorado.

Pueblo is about 112 miles due south of Denver, along the spine of Interstate 25.

**Source: [Colorado Eldercare Planning Council](https://www.carecolorado.net/a2b_co_nonmedical_homecare.htm)
(https://www.carecolorado.net/a2b_co_nonmedical_homecare.htm)**

⁸ [U.S. Census: Pueblo City, Colorado](https://www.census.gov/quickfacts/pueblocitycolorado) (<https://www.census.gov/quickfacts/pueblocitycolorado>)

⁹ [Census Reporter, Pueblo, CO](https://censusreporter.org/profiles/16000US0862000-pueblo-co/) (<https://censusreporter.org/profiles/16000US0862000-pueblo-co/>)

¹⁰ Rees, 2021.

¹¹ [Census Reporter, Pueblo, CO](https://censusreporter.org/profiles/16000US0862000-pueblo-co/) (<https://censusreporter.org/profiles/16000US0862000-pueblo-co/>).

Part of the city’s rich and complex history dates to the dominance of 20th century mining and steel mill industries. These businesses employed the majority of Colorado workers and attracted diverse ethnic groups to the city, which quickly became known as the “Melting Pot of the West.”¹² However, unfair labor practices caused disgruntled miners to strike in 1914. This standoff led to the Ludlow Massacre in a nearby mining camp, where nineteen workers were killed by the National Guard. Generations later in 1997, the local steelworkers union struck again for the same reasons and eventually won their case before a judge. Pueblo has also been the center for Chicano activism since the 1970s, when *El Movimiento* initiated the fight for Chicano “civil rights, representation, and political power through education, culture, and the arts.”¹³ Today, Pueblo continues to struggle with socioeconomic challenges that are rooted in this history.

Distrust toward private companies and government entities can be easily traced to the impacts on ancestors of today’s low-wage workers and people of color.

Vaccine hesitancy is, in part, inseparable from histories such as these.

The COVID-19 pandemic has impacted Pueblo County (pop. 168,000) significantly. Since the beginning of the pandemic through July 24, 2021, one in nine residents in the county has been infected, with a total of 19,810 cases reported.¹⁴ According to the Pueblo County COVID-19 data dashboard, compared to the proportion of residents in the county who identify as Hispanic/Latinx (41%), a higher proportion (55%) have tested positive with the virus (see Figure 2).¹⁵

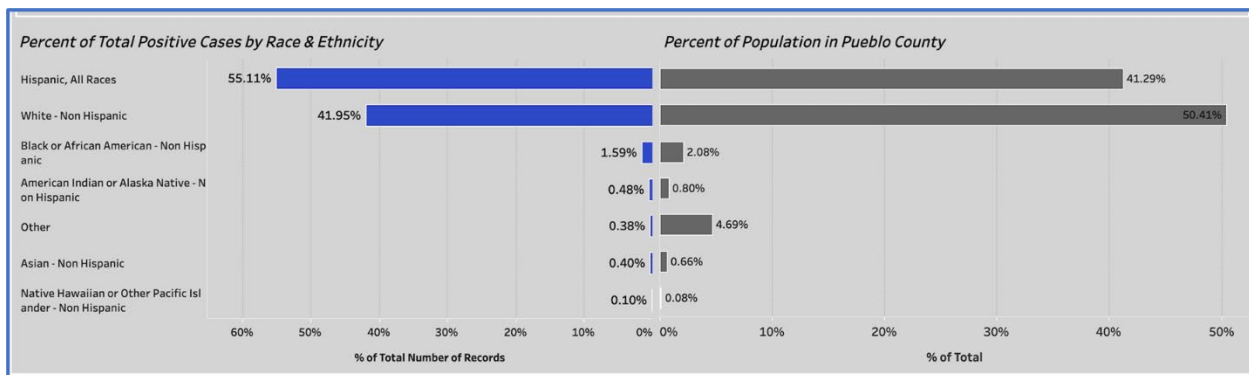


Figure 2. Total positive cases in Pueblo County by race and ethnicity.

¹² Wallace, 2015.

¹³ [Center for Health Progress. The Real History of Pueblo, Colorado](https://centerforhealthprogress.org/blog/the-real-history-of-pueblo-colorado/) (https://centerforhealthprogress.org/blog/the-real-history-of-pueblo-colorado/)

¹⁴ [The New York Times \(source data used for visualizations is supplied by the Centers for Disease Control\)](https://www.nytimes.com/interactive/2021/us/pueblo-colorado-covid-cases.html) (https://www.nytimes.com/interactive/2021/us/pueblo-colorado-covid-cases.html)

¹⁵ See Figure. [The Pueblo County COVID-19 data dashboard is compiled and updated by the Pueblo Department of Public Health & Environment](https://county.pueblo.org/public-health/pueblo-county-covid-19-case-data) (https://county.pueblo.org/public-health/pueblo-county-covid-19-case-data)

The graph above shows that Hispanics represent 41% of Pueblo County’s population, but account for 55% of those who contracted COVID-19 as of 7/27/2021. Whites, who represent 50% of the population, account for 42% of those who have contracted COVID-19).

Source: [Pueblo County Department of Public Health & Environment](https://county.pueblo.org/public-health/pueblo-county-covid-19-case-data) (<https://county.pueblo.org/public-health/pueblo-county-covid-19-case-data>)

The County’s dashboard data also indicates that Hispanics who have contracted the virus are younger (ages 20-59) and work in front line jobs that require interaction with the public (including health care, education, childcare, restaurants and food service, law enforcement and security, and construction). These disparities between their percentage of county population and the proportions they represent of all those infected echo statewide trends for Colorado. KFF (formerly known as Kaiser Family Foundation) reports that as of July 19, 2021, the Hispanic population in Colorado (22% of the state’s residents) accounts for 41% of statewide infections.¹⁶ And while infections are disproportionately high among Hispanics in Pueblo and in Colorado generally, their proportion of vaccination in both the state of Colorado and Pueblo County has remained disproportionately low through July 2021.¹⁷ Also, compared to the overall average of fully vaccinated people in Colorado (56%), the rate for vaccinated residents in Pueblo County is far behind, at 31% through July 25, 2021.¹⁸

Disparities between the area’s Hispanic population percentages and their disproportionately high rates of infection are common throughout the country. However, because the city of Pueblo and Pueblo County both have high numbers of Hispanic residents, getting the vaccine to these populations has been of special concern for Colorado. These circumstances converged to influence FEMA’s decision to establish a mass vaccination site in Pueblo.¹⁹ According to a FEMA official with experience placing vaccination sites, Pueblo County was selected due to “it being the only county in Region 8 with a population over 100,000 residents and a high Social Vulnerability Index (SVI).”²⁰ The

¹⁶ Ngudda et al. 2021: [Latest Data on COVID-19 Vaccinations by Race/Ethnicity](https://www.kff.org/coronavirus-covid-19/issue-brief/latest-data-on-covid-19-vaccinations-race-ethnicity/) (<https://www.kff.org/coronavirus-covid-19/issue-brief/latest-data-on-covid-19-vaccinations-race-ethnicity/>)

¹⁷ [However, there are some indications that the vaccination gap rate between Hispanics in the population and the proportion of Hispanics getting vaccinations is narrowing as of late July.](#) See KFF (<https://www.kff.org/coronavirus-covid-19/issue-brief/latest-data-on-covid-19-vaccinations-race-ethnicity/>)

¹⁸ [Centers for Disease Control](https://covid.cdc.gov/covid-data-tracker/#vaccinations-county-view) (<https://covid.cdc.gov/covid-data-tracker/#vaccinations-county-view>)

¹⁹ FEMA was not the first agency to deliver mass vaccinations in Pueblo. The Pueblo County Department of Public Health had organized and staffed a highly successful drive-through vaccination clinic from January through March in an old tire factory at the city mall. Their effort captured the eager eligible groups and their trusted role in the local community also contributed to a campaign that resulted in 40,000 people getting vaccinated. From that point on, the Public Health department launched a mobile clinic to provide vaccine to key under-resourced communities in the area.

²⁰ The Centers for Disease Control (CDC) use the SVI measure to assess “the degree to which a community exhibits certain social conditions, including high poverty, low percentage of vehicle access, or crowded households, may affect that community’s ability to prevent human suffering and financial loss in the event of disaster. By this SVI measure, Pueblo County is considered a “high vulnerability” county with a rating of 0.8669. Possible scores range from 0 (low vulnerability)

official stated that the city could serve as a hub for the rest of the county and deliver vaccines to much of Colorado's Southern Plains. This choice also aligned with President Biden's goal to serve areas with high "social vulnerability" to ensure they are not left out of our vaccinate efforts.

The mass vaccination site was situated on the grounds of the Colorado State Fairgrounds, an area that is surrounded by ethnically-mixed low-and moderate-income neighborhoods and offered just the kind of equitable access to the vaccine that was needed in Colorado. The site opened in mid-April 2021 and remained open for two months until it closed in mid-June 2021. Over the two months of operation, the 3,000 vaccination per day capability of the site never reached expectations. There are many reasons to explain this: most importantly, by mid-April, the majority of people who were eager to get vaccinated had already gotten their shots. In addition, beyond the city of Pueblo where the population is spread out, many low-income and rural communities were not in close proximity to the Fairgrounds, and so for those without private transportation, the site was not accessible.

The predicament in Pueblo presented a valuable opportunity to our team of anthropologists. Our goal was to locate people who were not being drawn to the mass vaccination site in Pueblo or to mobile units within or outside the city. In effect, we set out to investigate the "gaps" in vaccination efforts. Specifically, we wanted to learn directly from disadvantaged populations about their reasons for vaccine hesitancy and how the social history and contemporary context of marginalization may have shaped these outcomes. Ultimately, we wanted to understand and help address these immediate gaps and also consider longer-term solutions that could help in shaping a more equitable society.

Goals, Value, and Methodology of Our Study

Research Goals and Value of this Study

The research undertaken in this project begins with the recognition that vaccine hesitancy rates in the U.S. remain too high to achieve a rate of fully vaccinated individuals that could secure herd immunity. Current projections suggest that 70% of the population must be vaccinated in order to achieve herd immunity and slow or preclude the emergence of new variants of the SARS-CoV-2 virus.²¹ Indeed, the difficulty of halting the spread of the virus is visible in areas of the country where

to 1 (high vulnerability). [For further information, see this CDC document:](#)
(https://svi.cdc.gov/Documents/Data/2018_SVI_Data/SVI2018Documentation.pdf)

²¹ D'Souza, G. & Dowdy, D. (April 6, 2021). [What is Herd Immunity and How Can We Achieve It with COVID-19? Stopping SARS-CoV-2 will require a substantial %age of the population to be immune.](#) Johns Hopkins School of Public Health. (<https://www.jhsph.edu/covid-19/articles/achieving-herd-immunity-with-covid19.html>)

low vaccination rates are concentrated and where the new Delta variant has gained traction and is spreading rapidly.²² It is urgent that we understand and address vaccine hesitancy head on.

The broad concept of vaccine hesitancy is well understood.²³ Research done by social scientists demonstrates that people report a wide variety of reasons for their reluctance or refusal to get the vaccine as well as different degrees of attachment to their decision not to be vaccinated.²⁴ The majority of studies conducted to identify and assess the reasons that people decide against vaccination are achieved through surveys, which have some important advantages over other types of research. Well-constructed surveys are quick to administer and analyze, and when they capture representative samples of the population concerned, patterns are easily visible. However, survey methodology presents significant drawbacks, especially when contextual information is needed to understand the patterns. With a survey, respondents are typically required to answer questions that offer a set of pre-identified choices. For this reason, surveys can tell us a lot about “how many” or “what kind,” but not much about “why” or “how.”

Why an Anthropological Approach?

An anthropological methodology is ideally suited for the work of learning answers to how and why questions.

The foundational methodology of cultural anthropology is ethnography, an immersive, on-the-ground, community-based approach to learning.²⁵ Ethnographic presence and observation in places of interest allows researchers to absorb the profound importance of social context in comprehending human behavior. This study aims to expand on the prevailing survey research about vaccine hesitancy in order to seek a contextualized understanding of under-resourced populations in Pueblo that can serve as a basis for context-relevant solutions. Specifically, we applied rapid ethnographic research and focus group interviews to learn about the circumstances that give rise to peoples’ vaccine hesitancy. Our grounded, qualitative approach offers the most relevant and robust

²² Money, L. & Lin, R.G. (Jun 25, 2021). [Delta variant's biggest danger – "a pandemic of unvaccinated people"](https://www.register-herald.com/health/delta-variant-s-biggest-danger-a-pandemic-of-unvaccinated-people/article_66af19c8-d5ea-11eb-baf0-6391f3057d51.html). Los Angeles Times. (https://www.register-herald.com/health/delta-variant-s-biggest-danger-a-pandemic-of-unvaccinated-people/article_66af19c8-d5ea-11eb-baf0-6391f3057d51.html)

²³ See section on vaccine hesitancy, page 11 in this report.

²⁴ CDC (June 8-24, 2021). [Rapid COVID-19 State of Vaccine Confidence Insights Report](https://www.cdc.gov/vaccines/covid-19/downloads/SoVC_myocarditis.pdf). (https://www.cdc.gov/vaccines/covid-19/downloads/SoVC_myocarditis.pdf)

CDC (July 7, 2021). [COVID-19 State of Vaccine Confidence Insights Report. Report 11](https://www.cdc.gov/vaccines/covid-19/downloads/SoVC-report-11.pdf). (https://www.cdc.gov/vaccines/covid-19/downloads/SoVC-report-11.pdf)

²⁵ Ethnography is not only the foundational methodology of cultural anthropology, it is also a recognized approach to research across the social sciences and humanities, and in fields like nursing, business, health, and education.

methodology to match our goals and our need for collecting original data in Pueblo in a rapid, one-week timeframe.

Our research depended on four sources of data collection:

1. **Ethnographic observations of Pueblo and each of the social spaces we visited**, which included locations where we conducted individual or group interviews: the mass vaccination site at the State Fairgrounds, a Joint Vaccination Circuit (JVC) at the high school in Florence, the County Jail, the Rescue Mission homeless shelter, farms where migrant farmworkers plant and harvest vegetables, the city's soup kitchen, and a community advocacy space.
2. **Focus group interviews** among small groups of people across different types of under-resourced communities.
3. **More than 20 additional, in-depth interviews** with community advocates, public health officials, scholars at Colorado State University—Pueblo, FEMA staff, and volunteers at vaccine clinics.
4. **Archival research about historical, cultural, and economic factors** that could underlie and help explain someone's reluctance to get vaccinated.

The development of a solid qualitative methodology would help us better understand the multiple reasons for vaccine hesitancy, and the larger historical, socio-economic, and cultural contexts that affect how and why poor and marginalized populations get vaccines or not. As it turned out, this work produced valuable insights in support of FEMA's goal to equitably implement its COVID-19 mandate, aligning strongly with the agency's own objectives. Those insights include the following broad ideas, discussed in more detail in the Recommendations section of the Report:

1. In the immediate term, getting people vaccinated requires in-depth knowledge of the socioeconomic and cultural context of vaccine hesitancy. Understanding this context will help FEMA and its partners prepare more targeted and effective messaging.
2. In the longer term, better techniques for systematic and intentional listening to what people in disadvantaged and under-resourced communities experience during a pandemic or any disaster can help FEMA implement equity-centered programming and on-site interventions. As social science research shows, centering equity in disaster work entails proactively identifying and dismantling the invisible roadblocks to an equitable society.

Our small study was designed as a "listening" exercise, organized to bring residents of under-resourced groups into "focus groups" with the express intention of generating individual stories and life circumstances that help explain a person's vaccine hesitancy.

How the Principle of Equity is Centered in our Project

Equity can be defined as a system of policies, practices, interactions, cultures, and resources that are responsive to all people based on different circumstances and resource needs. Equity is both a process and an outcome. It is a process through which everyone is provided full access to information and assistance; it becomes an outcome when all people are ensured the necessary

resources that allow them to meaningfully participate, make progress, and benefit from programs and services.

Even well-intentioned public programs and services can have unintended effects, among them the exclusion of marginalized groups. We designed this project with the concept of equity at its core to foster conversations with and address the needs of socially marginalized, low-income, and minority populations. These conversations provided context-rich information about these communities' experiences with COVID-19 and their reasons for vaccine hesitancy. This valuable knowledge can better inform outreach efforts to underrepresented communities in FEMA's COVID-19 vaccination work and, beyond that, it has real implications for FEMA's disaster preparedness and response efforts.

Pilot Testing a Methodology to Engage with Socially Marginalized Communities

In this research study, we pilot tested a methodology that the Culture and Disaster Action Network (CADAN)²⁶ team has been developing. Our goal is to shape a more culturally appropriate and effective process for engaging with communities that have been left behind in a variety of ways, including basic health care. Such communities have become more visible during COVID-19 for their disproportionate numbers of cases and deaths, and for their lower than expected vaccination rates. A number of reasons contribute to these outcomes, including language barriers, barriers related to access to health care and information, the prevalence of insufficient health insurance coverage, disabilities, and co-morbidities. These problems are layered on top of systemic problems many members of marginalized groups also encounter on a daily basis as a result of their gender, race, ethnicity, religious, or cultural identity. Some of these individuals are also susceptible to social media disinformation campaigns.

Prior research findings from our CADAN team suggest that the single most effective strategy capable of facilitating exchanges with hard-to-reach communities involves the use of Culture Brokers.^{27, 28} Culture Brokers are people local to a community who can bridge the gap between official emergency management organizations and impacted communities. For this project, we applied systematic network-building to identify potential Culture Brokers, recruit those interested in supporting this project, and give them a significant role in helping recruit members of the local communities we

²⁶ CADAN is a group of social scientists, including scholars, academics, and practitioners devoted to helping disaster professionals address the first question: Who Lives Here? The mission of CADAN is to take action that can build and integrate cultural comprehension into the work of disaster risk reduction and disaster recovery. For more information, visit [CADAN](https://cultureanddisaster.org/) (https://cultureanddisaster.org/)

²⁷ Browne 2015. [Standing in the Need: Culture, Comfort, and Coming Home after Katrina](https://www.amazon.com/standing-need-culture-comfort-bookshelf/dp/1477307370/ref=tmm_pap_swatch_0?encoding=UTF8&qid=&sr=). (https://www.amazon.com/standing-need-culture-comfort-bookshelf/dp/1477307370/ref=tmm_pap_swatch_0?encoding=UTF8&qid=&sr=)

²⁸ Browne and Olson et al. [2019. Building Cultures of Preparedness](https://training.fema.gov/hiedu/docs/latest/2019_cultures_of_preparedness_report_10.22.18%20final.pdf) (https://training.fema.gov/hiedu/docs/latest/2019_cultures_of_preparedness_report_10.22.18%20final.pdf)

sought to learn from (unhoused, incarcerated people, low-income, Latinx, undocumented Spanish-speaking, etc.). These Pueblo Culture Brokers led the focus groups at the center of this project and served as trusted project leaders in the process. This pilot test in Pueblo created opportunities to interface with under-resourced communities face-to-face in order to learn about the life circumstances that shape their vaccine hesitancy.

Culture Broker credibility made it possible for outside researchers and practitioners coming into unfamiliar cultural spaces to hear and absorb meaningful insights about vaccine hesitancy.

Example of our Experience with Culture Brokers

When we reached out to the Executive Director of the homeless shelter about the possibility of conducting a focus group with residents, she agreed and expressed her own eagerness to learn more about why there were still some residents and even staff who would not get vaccinated. The next day, she recruited her vaccine-hesitant residents to participate in the focus group discussion inside the shelter. Meanwhile, outside the shelter premises that same day, the County Public Health department and FEMA were conducting a mobile vaccine clinic. The coincidence was intentional and helped raise awareness and interest in our project, a strategy that she seemed to organize for our benefit. She proved to be the ideal Culture Broker. In part, she was interested in the research findings, wanting to understand for herself why some of her residents did not want the vaccine. She was thus willing to recruit participants and lead the session using the very basic questions we had created. Her role as a Culture Broker also worked well because she had earned the trust of residents and they were comfortable discussing the questions she posed. There were laughs and there was warmth, in spite of the clear differences she and they held about the importance of the vaccine.

Though brief, this study confirmed that as trusted messengers, Culture Brokers can put community members at ease in a variety of research—or disaster management—related situations where outsiders might trigger resistance. These trusted individuals create space for the openness required to accurately document the reasons for vaccine hesitancy. Selected Culture Brokers are members of the targeted population and thus possess an already well-honed ability to communicate effectively with them. They are equally capable of communicating with external research project leads and representatives of government agencies. This comfort and fluency in both cultural settings allows these individuals to lead interviews or focus groups and broker communication with outsiders. Locating people in marginalized communities who can serve as Culture Brokers requires careful training and a systematic, evidence-based methodology, which is part of the anthropological toolkit that CADAN brought to this project.

To elaborate, we used the Culture Broker methodology to quickly locate appropriate pathways into under-resourced communities and complete five focus groups with the residents of a homeless shelter, male and female inmates at the County jail, low-income Latinx women, and male migrant farmworkers. Our approach to conducting these focus groups involved pre-fieldwork research to develop a set of contacts in each community to begin to locate potential Culture Brokers. We continued that process in the field, ultimately identifying key community members who agreed to help recruit participants and facilitate a focus group among them. Each Culture Broker received a

\$30 gift card; each participant received a \$15 gift card.²⁹ For three of our focus groups—those with shelter residents, Latino farmworkers, and Latina food service workers—we were fortunate to locate a Culture Broker who recruited participants and posed the questions during the session. We minimized participant discomfort by having only the Culture Broker and one member of our research team present to take notes. Our bilingual researcher served as the designated notetaker for the two sessions conducted in Spanish. Both our focus groups conducted in the County Jail required us to leave our phones and other gear at the door. This meant that instead of recording sessions and transcribing them later on, we relied solely on handwritten notes. No Culture Brokers were possible to recruit in this context though a longer-term project could potentially offer that possibility. Two researchers were present for both jail sessions.

The success of these efforts depended on the goodwill of local people, including local experts and community advocacy groups, who helped us make vital connections. We offer our thanks to these many individuals and organizations in our Acknowledgements section, which appears at the end of this document.

Social and Political Context

Understanding Vaccine Hesitancy in the U.S. and the Mistrust of Government

To better understand COVID-19 vaccine hesitancy, it is important to understand the complexity and multifaceted nature of vaccine antagonism. Anti-vaccine sentiment is not a novel phenomenon. Prior to the spread of COVID-19, vaccine skepticism had already become prominent during the early 2000's, after the publication of the 1998 (now-retracted) article linking the measles-mumps-rubella (MMR) vaccine to autism.³⁰

Although the majority—if not all—of vaccine-skeptics may be wary of the COVID-19 vaccine, there is a subgroup of COVID-19 vaccine skeptics that, in different circumstances, would not oppose vaccinations, and are instead skeptical of the circumstances under which *this particular vaccine* was developed and distributed. According to a KFF study, 37% of unvaccinated respondents do not think COVID-19 vaccines are safe, while 26% of unvaccinated respondents do not trust vaccines in general.³¹ Unsurprisingly, the main reason for COVID-19 vaccine skepticism among the unvaccinated is due to its novelty. Based on the KFF survey, 53% of *unvaccinated respondents* cited the vaccine's

²⁹ The value of the gift cards came recommended to us by one of the trusted community members who helped connect us to a Culture Broker. She noted that these amounts conveyed respect for people's time without becoming a financial incentive to participate.

³⁰ Smith, Tara C. 2017. "Vaccine Rejection and Hesitancy: A Review and Call to Action." *Open Forum Infectious Diseases* 4, no. 3.

³¹ Hamel and Lopes et al. 2021. "[KFF COVID-19 Vaccine Monitor: June 2021.](https://bit.ly/2VA5IPG)" KFF, Jun 30 (2021). (<https://bit.ly/2VA5IPG>).

rapid development period as *one of the reasons* they remain unvaccinated, with one out of five unvaccinated respondents reporting the vaccine's newness as *the main reason for their feeling hesitant*.³² Thus, it is important to not conflate general vaccine antagonism and COVID-19 vaccine hesitancy.

One of the main documented drivers of vaccine hesitancy—even prior to the COVID-19 pandemic—has been an overall distrust in government. In some cases, distrust reflects the American political landscape: a KFF survey cited lack of trust in the government as the reason why 38% of respondents remain unvaccinated; the majority of this subgroup were politically conservative and right-leaning voters.³³ These same individuals also tend to disregard mask-wearing mandates, as well as stay-at-home and social distancing orders.³⁴

For many Black Americans, fear or distrust of government-affiliated institutions stems from a lack of authentic measures taken to address systemic racism by healthcare providers and government officials. Histories of unethical medical studies targeting Black adults, such as the infamous U.S. Public Health Service syphilis studies at the Tuskegee Institute, are also given as reasons why many Black Americans remain wary of governmental public health initiatives.³⁵

Distrust of government as a driver for slow vaccination rates is prevalent in Latinx, Black, and Native American communities nationwide.³⁶

These same communities, alongside Asian, Native Hawaiian and Pacific Islanders (NHOPi), have been disproportionately affected by the COVID-19 pandemic, as well as by co-morbidity due to interacting chronic health conditions that are similarly and disproportionately distributed among these populations.³⁷ The indirect effects of the pandemic are also unevenly distributed among these groups. For example, Latinx households nationwide have been disproportionately affected by pandemic-related joblessness and loss of income.³⁸

³² Hamel & Lopes et al. 2021.

³³ Hamel & Lopes et al. 2021.

³⁴ Graham, David A. "[It's Not Vaccine Hesitancy. It's COVID-19 Denialism.](https://bit.ly/3kfWL8B)" *The Atlantic*, Apr 27, 2021. (<https://bit.ly/3kfWL8B>)

³⁵ Karpman, Michael, Genevieve M. Kenney, Stephen Zuckerman, Dulce Gonzalez, & Brigette Courtot. "[Confronting COVID-19 Vaccine Hesitancy among Nonelderly Adults Findings from the December 2020 Well-Being and Basic Needs Survey.](https://urbn.is/3r7UcXv)" *Robert Wood Johnson Foundation and Urban Institute* (2021). (<https://urbn.is/3r7UcXv>)

³⁶ Hamel & Lopes et al. 2021.

³⁷ Artiga, Samantha, Bradley Corallo, & Olivia Pham. "Racial Disparities in COVID-19: Key Findings from Available Data and Analysis." *KFF*, Aug 17 (2020). <https://bit.ly/3eiPqRz>.

³⁸ Kearney et al. 2021. "[Vaccine Hesitancy among Hispanic Adults.](https://bit.ly/3xSTD6B)" (<https://bit.ly/3xSTD6B>)

Among many Latinx households, a significant reason many remain unvaccinated seems to be the inability to take time off of work, or the fear of serious repercussions of taking time off to get vaccinated, such as job loss and subsequent loss of a household income.³⁹ This concern has been predominantly reported among lower-income, uninsured, and undocumented Latinx families.⁴⁰ In this same report, workers with paid time off are more likely to get vaccinated, which could be an incentive that employers could provide to encourage higher vaccination rates.⁴¹ This is particularly relevant as larger numbers of—especially undocumented—Latinxs navigate a precarious, often exploitative, job landscape. Targeting employers, rather than poorly paid employees, addresses these systemic hurdles in an equity-driven manner. Government incentives directed at employers could provide a solution.

Additionally, Latinx households are disproportionately impacted by a lack of reliable information regarding the COVID-19 vaccine, especially among Spanish-speaking Latinx populations. Many are unaware whether they are eligible to receive the vaccine, and many are afraid it will be too costly for them to afford.⁴² Many reported difficulties accessing vaccination sites as a reason why they remain unvaccinated.⁴³

It is important to note that ethnicities are not homogenous groups, and although ethnic background shapes living circumstances significantly, it is not the only component of a person's lived experiences. Overgeneralizing reasons for vaccine hesitancy "diverts attention away from social factors that research shows play a critical role in health status and outcomes."⁴⁴ Acknowledging these systems, asymmetries, and histories remains critical to understanding such complex processes as vaccine uptake and hesitancy if vaccination campaigns are to be effective and successful.

State of Colorado Vaccine Progress and Southern Colorado Exception

As of July 30th, 2021, Colorado has administered at least one dose of the COVID-19 vaccine to 3,366,057 people.⁴⁵ Almost 70% of the people who have been vaccinated in the state are White, in

³⁹ Hamel, Liz, Samantha Artiga, Alana Safarpour, Mellisha Stokes, & Mollyann Brodie. "[KFF COVID-19 Vaccine Monitor: COVID-19 Vaccine Access, Information, and Experiences Among Hispanic Adults in the U.S.](https://bit.ly/3eaVHPv)" KFF, May 13 (2021). (<https://bit.ly/3eaVHPv>)

⁴⁰ Hamel & Lopes et al. 2021.

⁴¹ Hamel & Lopes et al. 2021.

⁴² Hamel & Artiga et al. 2021.

⁴³ Hamel & Lopes et al. 2021.

⁴⁴ Sobo, Elisa J., Diana Schow, Stephanie McClure. "[US Black and Latino communities often have low vaccination rates—but blaming vaccine hesitancy misses the mark.](https://bit.ly/3hADYml)" *The Conversation*, Jul 7 (2021). (<https://bit.ly/3hADYml>)

⁴⁵ Colorado Department of Public Health & Environment (CDPHE) 2021.

proportion with the percentage of the state’s White population. In contrast, as depicted in Figure 3, Hispanic/Latinx people who make up 20% of the state’s population account for only 11% of those who have had at least one dose of the vaccination.⁴⁶

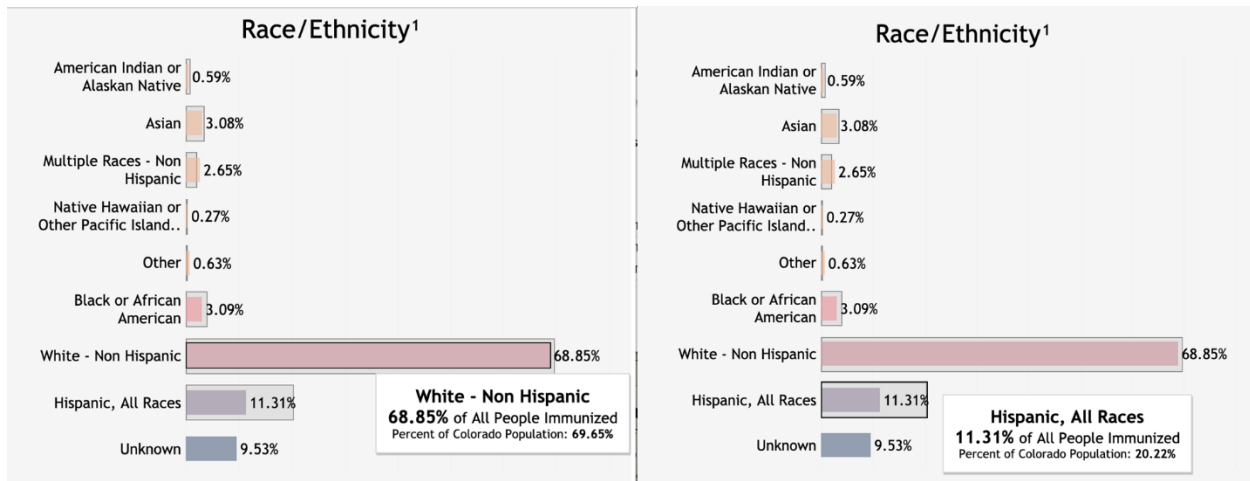


Figure 3. Total vaccinations in Colorado by race/ethnicity.

As of 7/30/2021, White Non-Hispanics represent about two-thirds of both the state’s population and the state’s vaccinations (left half of chart). Hispanics represent about 20% of Colorado’s population but just 11% of the state’s vaccinations (right half of chart).

These disparities are present in Pueblo County as well.

Source: [Colorado Department of Public Health](https://covid19.colorado.gov/vaccine-data-dashboard) (https://covid19.colorado.gov/vaccine-data-dashboard)

⁴⁶ Colorado Department of Public Health and Environment (CDPHE) 2021; Seaman 2021. [“Colorado COVID-19 vaccination data shows another layer of racial inequity.”](https://www.denverpost.com/2021/01/22/colorado-covid-19-vaccine-racial-inequity/) (https://www.denverpost.com/2021/01/22/colorado-covid-19-vaccine-racial-inequity/)

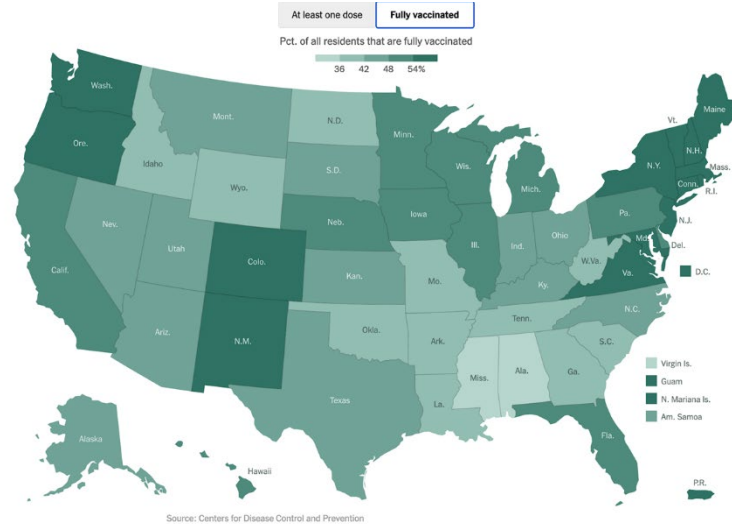


Figure 4. Percent of fully vaccinated by state.

In the US, 50% of all people have been fully vaccinated as of 8/12/2021.

In Colorado, 55.2% of the state’s population is fully vaccinated as of 8/12/2021.

**Source: [New York Times data tracker. Data source is Centers for Disease Control \(CDC\)](https://www.nytimes.com/interactive/2020/us/covid-19-vaccine-doses.html)
(<https://www.nytimes.com/interactive/2020/us/covid-19-vaccine-doses.html>)**

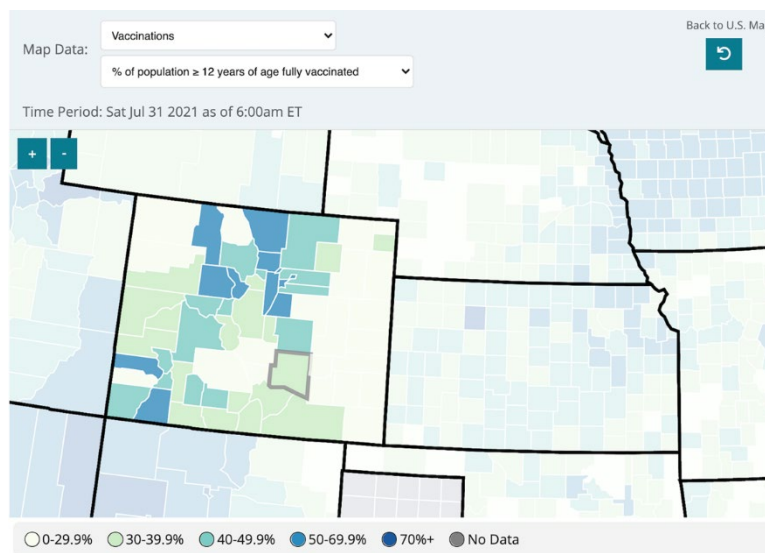


Figure 5. Proportion of fully vaccinated in Pueblo County compared to the state of Colorado.

As of 7/31/2021, the percentage of eligible people (12 and >) who were fully vaccinated in Pueblo County was only 31% compared to eligible residents statewide (54%).

Source: [Centers for Disease Control \(CDC\)](https://covid.cdc.gov/covid-data-tracker/#county-view) (<https://covid.cdc.gov/covid-data-tracker/#county-view>)

County-level data further illustrates the geographic distribution of these disparities as noted earlier (see section “Why Pueblo,” page 3). In Pueblo County, 41% of the vaccine-eligible population (age 12 or older) identifies as Hispanic, yet as of July 20, only 26% of this group is fully vaccinated.^{47, 48} Pueblo County continues to see a rise in daily COVID-19 cases and hospitalizations alongside low vaccine demand, with hospitalizations consisting overwhelmingly of unvaccinated people.⁴⁹

Vaccination Completion (First + Second Dose or Single Dose) by Race and Ethnicity

Timeframe: December 16, 2020-August 16, 2021

Data source: CIIS

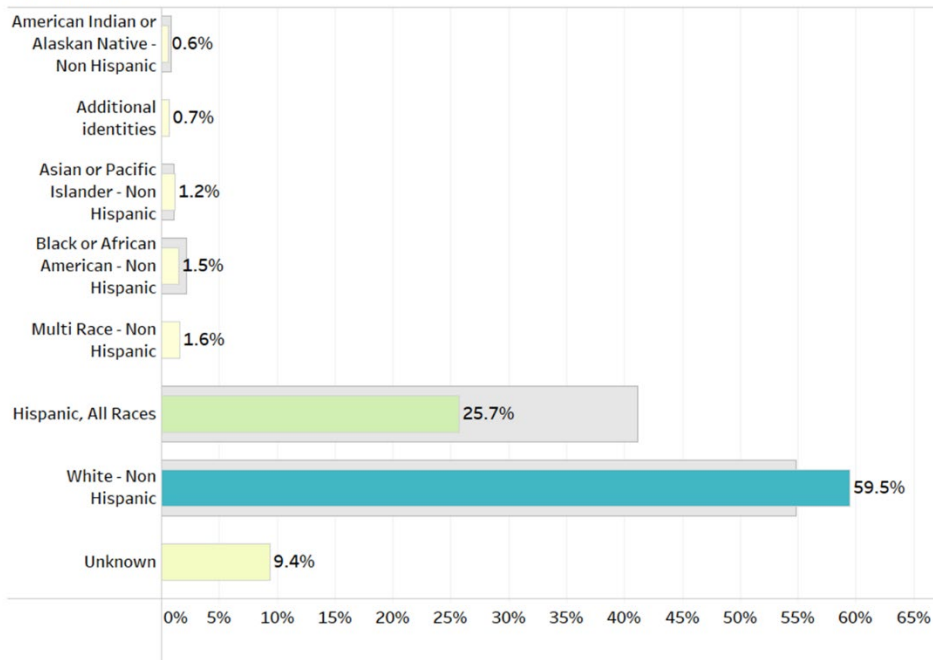


Figure 6. Fully vaccinated in Pueblo County by race/ethnicity. As of 8/16/2021, White Non-Hispanics had gotten fully vaccinated at a proportion (59%) that exceeds their approximate percentage of Pueblo County’s population (55%). In contrast, Hispanic populations that represent 41% of the county population are strongly underrepresented among the fully vaccinated (26%). Source: Custom chart provided by Anne Hill, epidemiologist at Pueblo County Department of Public Health & Environment.

⁴⁷ Colorado Immunization Information System (CIIS).

⁴⁸ By contrast, in Pueblo County, Whites (age 12 or older) constitute 55% of the population, and 49% of all people who are fully vaccinated.

⁴⁹ Hillstrom 2021. [“Despite cases increasing, COVID-19 vaccine supply ‘far outweighs’ demand in Pueblo.”](https://www.chieftain.com/story/news/2021/04/28/covid-cases-and-hospitalizations-pueblo-rise-despite-wealth-vaccine/4872382001/) (https://www.chieftain.com/story/news/2021/04/28/covid-cases-and-hospitalizations-pueblo-rise-despite-wealth-vaccine/4872382001/)

COVIDCheck Colorado Vaccine Hesitancy and Access Survey⁵⁰

Between March 24 and April 5, 2021, a Public Private Partnership in Colorado conducted a statewide survey to better understand COVID-19 vaccine hesitancy, as well as barriers and factors that work in support of vaccination.⁵¹ Across the state, 4,905 respondents representing 58 out of 64 counties (including Pueblo) informed recommendations for improving vaccine uptake, such as simplifying (or foregoing) registration, communicating side effects and logistics, and offering local vaccination sites with multilingual providers and community organizations in areas with low uptake. These survey results provide a useful starting point to begin understanding the reasons for vaccine hesitancy. **What is missing, however, are the stories and lived experiences within which the reasons for vaccine hesitancy are embedded.**

Historical Legacies of Harm to Specific Populations

Successfully implementing equity-centered policies and programs for COVID-19 requires attention to the deep, historical roots that reveal why particular populations are at greater risk of harm from the virus. Since early 2020, the impacts of COVID-19 have revealed a social landscape of startling inequities in American society.⁵²

For Black, Brown, and Indigenous communities, historical difficulties of accessing basic health care alone have produced longstanding impacts on peoples' well-being. Inequities in health care access contribute to inadequate treatment of disease and injury, and lead to co-morbidities (such as diabetes, lung disease, and cardiovascular disease) that can seriously compromise a person's capacity to face challenges like the COVID-19 virus.

Such disadvantages fall heavily on people in communities of color and are woven into a web of systemic exclusions in policies, practices, and attitudes in our legal, health, economic, and educational infrastructure. Social scientists have documented the systemic violence toward Black, Brown, and Indigenous groups that has spanned generations and allowed unethical medical experimentation and heinous practices such as forced sterilization of Indigenous, Black, and Latina women. We are now at a point of national reckoning with these historical traumas that have nurtured a distrust in government and systems of authority among entire populations of people. These circumstances directly relate to patterns of vaccine hesitancy that are based on trust.

⁵⁰ [COVIDCheck](https://covidcheckcolorado.org/wp-content/uploads/2021/04/CO-Vax-Survey_Overview.pdf) (https://covidcheckcolorado.org/wp-content/uploads/2021/04/CO-Vax-Survey_Overview.pdf)

⁵¹ COVIDCheck Colorado, Mental Health Center of Denver, Mind Springs Health, mHealth Impact, The Center for African American Health, the Mexican Consulate in Denver, the Colorado School of Public Health, 9Health, Clinica Colorado, EPHC, Prime Health, and Sheridan Health Services.

⁵² Artiga, Samantha, Bradley Corallo, & Olivia Pham. 2020. ["Racial Disparities in COVID-19: Key Findings from Available Data and Analysis."](https://bit.ly/3eiPqRz) KFF. (https://bit.ly/3eiPqRz)



Figure 7. A mobile clinic offers vaccinations outside the Rescue Mission shelter. Mobile vaccination clinics were offered adjacent to the Rescue Mission for unhoused individuals. Efforts to vaccinate under-resourced communities was conceived and carried out by the Pueblo County Equity and Outreach Taskforce, a collaboration of multiple agencies led by the Pueblo Department of Public Health and Environment (PDPHE) and supported by FEMA. Photo credit: FEMA.



Figure 8. Mobile vaccination clinics offered vaccines for disadvantaged communities. Mobile vaccination clinics made it possible for residents in rural areas to get vaccinated efficiently. Organized by Pueblo County Department of Public Health & Environment and FEMA. Photo credit: FEMA.

Research Results: Five Focus Groups⁵³

Pueblo Rescue Mission Homeless Shelter: One Mixed-Gender Focus Group

OVERVIEW

Unhoused populations are at greater risk of contracting COVID-19 and face significant barriers when trying to access vaccination sites.^{54, 55} On any given night, well over half a million people in the U.S. find themselves experiencing homelessness according to a 2020 federal report to Congress. The National Health Care for the Homeless Council (NHCHC) explains that homelessness arises for different reasons and in different ways. Other advocacy groups point to the fact that all homelessness is “characterized by extreme poverty coupled with a lack of stable housing.”⁵⁶

In Colorado, almost 10,000 people were homeless in 2020, which represents a 2.4% increase over 2019 (this increase is higher than the national average increase of 2%). In Pueblo, a city of 112,000 people, the Executive Director of the Pueblo Rescue Mission estimated that the local homeless population encompassed about 650-700 people. This downtown area’s homeless shelter provides 100 beds and opened in 2020 as the city’s first permanent shelter in more than three years. All residents of the Rescue Mission facility are required to sign a contract agreeing to make this facility their “transitional shelter” while they seek work and stable housing. It is noteworthy that 73% of current residents are vaccinated, a higher rate than the nation’s general population. The success of vaccinations at the shelter speaks strongly to the influence of the shelter’s Executive Director on the residents, and the trust they place in her advice. However, one quarter of the residents remain unvaccinated. In a congregate setting like this, respecting social distance is extremely difficult, if not impossible, making any unvaccinated residents a concern.

RESCUE MISSION RESIDENTS: MESSENGERS WHO TIP THE BALANCE TOWARD VACCINE HESITANCY

The director brought together five shelter residents and two staff members. The residents included two women (one Latina, one White) and three men (two Latino, one White), all between the ages of

⁵³ Actual names of focus group participants or people they refer to are not used in this report.

⁵⁴ Pham, O., Rudowitz, R. & Tolbert, J. 2021. [“COVID-19 Risks and Vaccine Access for Individuals Experiencing Homelessness: Key Issues to Consider. Issue Brief.”](https://www.kff.org/medicaid/issue-brief/covid-19-risks-vaccine-access-individuals-experiencing-homelessness-key-issues/) KFF. (https://www.kff.org/medicaid/issue-brief/covid-19-risks-vaccine-access-individuals-experiencing-homelessness-key-issues/)

⁵⁵ National Academies of Sciences, Engineering, and Medicine 2021. [Addressing Disaster Vulnerability among Homeless Populations during COVID-19](https://doi.org/10.17226/26220). Washington, DC: The National Academies Press. (https://doi.org/10.17226/26220)

⁵⁶ [SBCS \(formerly South Bay Community Services\) \(2021\)](https://sbcssandiego.org/emergency-shelter-transitional-housing/). Organizational Website. (https://sbcssandiego.org/emergency-shelter-transitional-housing/)

48 and 65, with one participant aged 73. The two staff members were both Latina and in their early 50s. This group of seven expressed a variety of reasons for remaining unvaccinated, including concern related to already compromised health, bad experiences with vaccines, surviving COVID-19, and complying with the advice of influential persons that discouraged them from getting vaccinated.

Both female staffers identified medical issues to explain their decision not to get the vaccine at this time: one is wary because of a history of blood clots and the other has an open leg wound her doctor said was enough work for her immune system to deal with. But both Latina women had other reasons for remaining unvaccinated. One noted that during the shelter's outbreak in November 2020, she had been exposed for days to 30 positive residents without ever developing symptoms. The other staffer reported she had gotten COVID-19 twice: the first time was serious, but the second was mild. Her family had all gotten it and recovered, but an older friend with underlying health problems got vaccinated and died shortly thereafter. Additionally, her daughter's inability to have children caused her to suspect a prior vaccine had been responsible for her infertility issues. If these staffers are vocal about their reasons for remaining unvaccinated, their experiences may influence ambivalent residents who trust their advice and example, dissuading them from getting the vaccine.

The reasons residents shared for deciding against vaccination are similar to the reasons articulated by facility staff. Most commonly, people echoed one of two sentiments: first, not getting COVID-19 when exposed or only getting a mild version meant the vaccine offered no important protection. Second, for those who had gotten other non-COVID vaccines, their own histories, or those of people close to them, seemed to align with negative outcomes such as getting the virus itself or developing a degree of sickness that could be avoided without the vaccine. One White man summed it up, saying "I don't have a good history when it comes to vaccines," explaining how he had last gotten a flu shot about 20 years ago and then had promptly contracted the flu. When he was a young boy, he took the polio sugar cube, but shortly thereafter contracted measles, mumps, and chicken pox, and was hospitalized for two months. He does not believe vaccines are meant for him.

Two of the resident participants—a Latino man and Latina woman—indicated a different kind of reason related to the role of influential people. The man had lost a leg to diabetes and is on dialysis, while also suffering from a cardiac disease. During his hospitalization due to pneumonia, his doctors shared with him they were not getting the COVID-19 vaccine. The doctors' skepticism was all the confirmation he needed to justify his own negative perceptions about the vaccine. A trusted, influential figure helped him decide he would not get the vaccine.

The Latina woman, in addition to other reasons, felt healthy enough to not need the vaccine. This 73-year-old resident said, "Amanda and my nana were not going to get the vaccine." Amanda runs the religious organization that provides services and dinner to shelter residents every Sunday. This resident explained that she had had a near-death experience some years ago; when she awoke, she realized God had brought her back to life "because He had a purpose for her." Her religious orientation since that time had predisposed her to accept Amanda's advice. Her advice was to not get the vaccine, which the resident did not question. She added, "there is a reason for everything God throws at you and allows you to go through." So, although the woman had gotten vaccines in the past and she still talked about them as "fine," her faith and her religious mentor helped her resolve not to seek the COVID-19 vaccine.

The last shelter resident, a 59-year-old White woman, self-identified as a smart, science-oriented person who gets her information from doctors and scientists. She offered a litany of reasons she would not want the vaccine, including the fact that she had lived through worse (a near-fatal bout with the flu), that recent news indicated that the tetanus shot had sterilized women in Africa (supporting the idea that the long-term effects cannot yet be known), and that the profit being made by the vaccines' developers makes their products suspicious. Her single most emphatic point was that the additives in vaccines can cause serious problems. Her source for this information was the doctor who wrote a now-retracted article linking MMR vaccines to autism (see page 11). Given that her social life revolves around the shelter, and her self-presentation as knowledgeable reinforces the grip of misinformation on her, it is easy to see the importance she places on her sense of vaccine hesitancy.

RESCUE MISSION RESIDENTS SUMMARY

- Focus group members who were exposed to COVID-19 without experiencing symptoms, or who got only a mild case of the virus, felt reassured that the vaccine is not meant for people like them.
- Some residents expressed concern about the vaccines causing the disease or leading to complications; others shared stories about the overstated danger of the virus. Both arguments represent a sturdy resistance to the prospect of vaccination.
- Influential role models can deliver information in a way that offers more persuasive power than any other source of information. With three of the five shelter residents in this group, an influential figure provided what seemed like clarity about a confusing and controversial issue, persuading them to take a stance against the vaccine. For people to be trusted messengers, they need to deliver an accurate account of public health issues. When influential people deliver unreliable or inaccurate information, those absorbing their messages become much more difficult to persuade.

Pueblo County Jail Inmates: One Male and One Female Focus Group

OVERVIEW

The medium security Pueblo County Jail and Detention center is the single most overpopulated correctional facility in all of Colorado. National guidelines recommended that jails should only operate at 80% capacity during the pandemic. The Pueblo County Jail housed about 500 inmates at the time of this study, which represents roughly 98% of its capacity. Three-quarters of the inmates here are awaiting trial, and most are facing drug charges and other minor offenses. Beyond

overcrowding, inmates complain of roof leaks, improvised sleeping accommodations, moldy bathrooms, subpar recreation services, and being required to eat meals in their bunks.⁵⁷

We conducted two focus groups with inmates at the Pueblo County Jail: one with men, one with women. Both groups were designated “low-risk” in relation to the nature of their crime. As noted earlier (page 11), we had no opportunity to recruit a Culture Broker or record the session, so both sessions were conducted with Browne leading the questions, the inmates responding, and the Deputy Sheriff standing by at a distance.

MALE INMATES: LIVING BY THE MAN CODE IN A BROKEN SYSTEM

We spoke with three male inmates, all Latinos in their thirties. Together, they expressed a range of reasons for vaccine hesitancy. The first man cited his mistrust of large corporations like Johnson & Johnson, while also making clear that he may be open to other COVID-19 vaccines if those companies earned his trust. He also stated that he lives by the “man code,” meaning that if he is doing nothing wrong, he does not believe in laws that impinge on his personal freedom.

The second man has never been vaccinated against a contagious disease and believes that his strong immune system and his faith will protect him from getting sick. He witnessed the COVID-19 outbreak at the Fremont State Prison, which resulted in many people near him getting sick, although he remained healthy the whole time.

The third man stated that he has resisted vaccines for the last ten years, since he used to get sick with each flu shot. He also believes that perhaps something in his genes is keeping him from getting the virus. This man remarked “if it’s not broke, [why fix it?]” suggesting that the vaccine is not worth it since he has not gotten sick yet. He claimed that the only thing that could change his mind about the vaccine is his family: “I would do it for my kids.” However, he suggested that he may not see his kids when he gets out of jail.

MALE INMATES SUMMARY

- The three men shared the belief that their strong immune systems would protect them from the virus. The second and third men cited personal experiences that give them the confidence that they can get through the pandemic unharmed. Ultimately, they are unconvinced that they need vaccines since they are confident of what their bodies are capable of.
- Their shared history of fending for themselves in the streets and in jail might enhance their self-confidence and self-determination.
- The first man expressed his belief in the “man code.”

⁵⁷ Coltrain, Nick. 2017. “[Jail crowding causes safety, staffing concerns from Fort Collins to Pueblo.](https://bit.ly/3ii3zzk)” The Coloradoan, Oct 20, 2017. (<https://bit.ly/3ii3zzk>)

- The first man expressed a recurring theme about real issues with corporations. He criticized the greed and irresponsibility of corporations like Teflon and Dupont, which led to environmental problems. He also declared that “the whole system is broke” and that he prefers to go with his “own experiences” and not with what the experts tell him. Nevertheless, he was the only man open to a vaccine (so long as it was not the Johnson & Johnson product).

FEMALE INMATES: DISTRUST IN INSTITUTIONS AND CORPORATIONS

We spoke with seven female inmates, including White and Latina women ranging from 25 to 45 years of age. Most of the women had already contracted COVID-19 and felt that their immune systems were strong enough to protect them from the virus. Furthermore, they believed that the vaccine may be worse than the disease itself, citing cases in which people got sick or died after getting the shot. The oldest of the seven women claimed to never get flu shots and saw no reason to get the COVID-19 shot. One woman believed that the vaccine was “about population control,” possibly linking the shots to the forced sterilization of minorities in the United States.⁵⁸ Another woman felt that deaths due to the Johnson & Johnson vaccine proves that these companies cannot be trusted. Two other women shared concerns about the contents of the vaccine, as well as the lack of research about their unknown side-effects. They were also suspicious about the vaccines’ rapid development.

FEMALE INMATES SUMMARY

- These women all indicated that their life circumstances had been tough—they had either been cycling in and out of jail, were battling substance addictions, “only had street families,” or were mothers enduring the challenges of poverty and incarceration.

Among the women, there was a need to assert some control over their lives, especially while incarcerated, where they were almost completely powerless.

- They cited lack of access to information on the vaccine while in jail as a reason for hesitancy. A few stated that they would consider getting the shot once they could research the vaccines themselves, or if they knew it would be good for their kids.
- The women who would not change their minds under any circumstances expressed either a faith in “God’s will” or a conviction that the virus was not that serious.
- With these women, we see that a lack of trust in institutions (e.g., prisons, the health care system, corporations, and the government) is a major cause for vaccine hesitancy.

⁵⁸ Manjeshwar, Sanjana. [“America’s Forgotten History of Forced Sterilization.”](https://bit.ly/3wlrSfn) *Berkeley Political Review*, Nov 4, 2020. (https://bit.ly/3wlrSfn)



Figure 9. A Joint Vaccination Circuit (JVC).

Kate Browne, Research Project Lead, learning about the vaccination process from a FEMA reservist at a Joint Vaccination Circuit at Florence High School, Fremont County. Photo credit: Joshua Bauer.



Figure 10. FEMA's mass vaccination site.

Joshua Bauer, Colorado State University researcher with Jessica Haynes, FEMA, inside FEMA's mass vaccination operations center on the Colorado State Fairground in Pueblo. Photo credit: Kate Browne.

Latina Women and Latino Migrant Farmworkers—One Female and One Male Focus Group

OVERVIEW

Latinx people in the U.S. face unique challenges due to their historical exclusion from social safety nets including basic health care, affordable education, and affordable housing as well as institutionalized economic disadvantages, all of which leads to a higher risk of socio-economic insecurity for this segment of the population. Undocumented immigration status can aggravate this insecurity by limiting access to formal employment, increasing workplace risk, and reducing access to benefits such as health insurance and other social services. Latina women also face gender-based disadvantages in a context of evolving social roles and structures, while Latino men face pressures from gendered expectations around their role as family providers. These overlapping challenges can produce anxiety about getting a COVID-19 vaccination.⁵⁹ Not only are many people fearful of side-effects, they are fearful of the prospect of deportation by the government. The thought of getting a vaccine administered by the U.S. government without an assurance of safety—medical, economic, and social—creates nearly insurmountable anxiety.

LOW WAGE LATINA WOMEN: “LONG-HAULERS” WARY OF VACCINES AND THE MEDICAL SYSTEM

We conducted a focus group with four Mexican women who have lived in Pueblo for decades, three of whom were undocumented. These four women all work in an outreach program that serves the Hispanic community in Pueblo. Prior to their work in the community, they held working class jobs in the food service industry. Two of the women worked reduced hours due to COVID-19, and another had lost her job due to the pandemic. All the women are married with school-aged children. During the height of the pandemic, all of them contracted COVID-19, and three experienced severe symptoms. While they were sick, they not only had to care for their families and maintain their housekeeping duties, but were also responsible for tutoring their children, whose school went online during the quarantine. Further, the three women who faced severe COVID-19 felt unsupported by members of the medical establishment, who often refused to provide them care, or gave them minimal guidance when they were most in need. These three women remain unvaccinated, while the woman who experienced mild symptoms has already received the shot.

The three women who remain hesitant about the vaccine all agreed that their primary concern is whether their bodies can handle the shot, given the lingering COVID-19 symptoms they still live with. They each shared harrowing stories of weeks of terrible illness. Several months after recovering from the virus, they continue to deal with breathing issues, fatigue, and heart irregularities. They all understand the severity of the virus and the importance of the vaccine, but they feel they need a doctor’s examination to ensure that the vaccine will not do them further harm. The women also

⁵⁹ Angel & Angel 2009, *Hispanic Families at Risk: The New Economy, Work, and the Welfare State*; Dawson 2016, *The Undocumented Experience in the United States and Fort Collins, Colorado*.

discussed their disappointment in institutions –medical, educational, and governmental—who they feel failed them during the pandemic. The woman who lost her job said she was worried about missing work due to the vaccine’s side-effects. Two of the women were adamantly against the Johnson & Johnson vaccine due to the reported complications with women on birth control. However, they also agreed that they are monitoring how acquaintances and relatives are responding to the vaccine, which is making them feel more at ease with the prospect of getting vaccinated in the near future.

LATINA WOMEN SUMMARY

- The concern that the women feel stems from their lived experience of contracting COVID-19, and legitimate fears about how their already-compromised bodies might react to the vaccine.
- Although the women’s need for the approval of a doctor seems straightforward enough, it is complicated by the fact that they all were let down by medical professionals while they were ill. One woman said that this dilemma makes her feel “powerless,” since she does not really trust doctors enough right now to see them.
- Their numerous responsibilities as wage earners and homemakers forces them to be highly cautious, as their families depend on them for so much.

OVERVIEW OF FARMWORKERS

Migrant farmworkers in the U.S. navigate a precarious and exploitative labor landscape, which hinders their personal and political agency, or capacity to act on their own behalf. In practice, these labor structures equate to a form of human trafficking. While workers invited in through the H-2A temporary agricultural program fulfill essential roles in planting, cultivating, and harvesting U.S. crops, they face unfair treatment, such as unsanitary labor conditions and overcrowded, substandard living quarters.⁶⁰ They risk musculoskeletal injury through repetitive tasks, hazards from falling, equipment injuries, and are exposed to extreme heat and dangerous pesticides. U.S. farms typically hire migrant workers through intermediaries, an arrangement that is prone to exploitation by limiting farmers’ legal responsibility to the workers. Such tactics allow farmers to act with more impunity towards these farmworkers. Although these conditions are well documented, the U.S. government has not held employers sufficiently accountable for such abuses.⁶¹

There are approximately 50,000 migrant farmworkers in Colorado enduring arduous labor to maintain their roles as their families' economic backbone and as the labor backbone of U.S.

⁶⁰ U.S. Department of Agriculture, [H-2 Visa Program](https://bit.ly/3epYy74). (https://bit.ly/3epYy74)

⁶¹ Farmworker Justice, [H-2A Guest Worker Program](https://bit.ly/3wN0v3Z). (https://bit.ly/3wN0v3Z)

agriculture.⁶² Because this work is precarious and uncertain, vaccine side-effects pose a significant worry for men who cannot risk even a single day of sickness without getting fired or laid off. These men are easily replaceable and missing work is always a strike against them with their employers.

LATINO MALE FARMWORKERS: BREADWINNERS' FEAR OF LOSING THEIR JOB AND IDENTITY

Our focus group with farmworkers included eleven men aged from their early twenties to mid-forties. All these men are recent arrivals from Mexico and have been contracted to work as harvesters with a Pueblo County produce farmer. They have worked in Pueblo County in years past on similar contracts. None of them have family in Pueblo County, although two of the men are brothers. Most of the men referred to wives and children at home in Mexico who they were sustaining through their work here in the United States. Several of the men mentioned that the pandemic had added extra stress to their already difficult financial situations, which made their work here even more critical. A few of the men stated that they live in small rural communities in Mexico that did not experience severe outbreaks of the virus. Nevertheless, all of the men stated they had contracted COVID-19 while in the U.S., despite cautiously avoiding large crowds, maintaining social distance, and wearing masks during their time in the county. Most of the men experienced only mild symptoms. They have still been cautious in the U.S. by avoiding large crowds, maintaining social distance, and wearing masks. Ten of the eleven men remain unvaccinated, although they have had many opportunities to receive the shot both in Mexico and the United States. They have a working relationship with our female focus groups' outreach program, which has helped assure them access to the shot.

The biggest concern that these men felt was that the side-effects from the shot would prevent them from working, and therefore, put them at risk for getting fired.

The one man who had gotten the shot experienced two days of side-effects, which complicated his ability to work during that time. Aside from this, some of the men believed that the shot could harm or even kill somebody, that it only worked for ninety days, or that it did not work at all. Two of the men stated that they simply preferred to take full responsibility for their well-being without the vaccine, using the basic safety precautions listed above. One of these men noted his inability to assess the vaccine by himself due to his lack of education and illiteracy.

FARMWORKERS SUMMARY

- A critical detail with these men was the sense of responsibility they feel about earning an income to send remittances back to their families in Mexico. They would rather face the risks of getting COVID-19 again (something they feel they can control with the proper measures) than the risks of the vaccine which is something they feel is out of their control.

⁶² Anderson 2021.

- Several of the men expressed that their bosses would not be lenient with them if they were unable to work for even a day, so they feel pressure to show up each day and work to their fullest capacity.
- Another common theme is the lack of accurate information about the COVID-19 vaccines. However, only one of the men stated that he would change his mind if he had more information. The rest of the men did not say what would change their minds, as the fear of losing their jobs or getting harmed by the vaccine remained their primary concern.

Recommendations

Graphic Representations of this Project: From Data Collection to Recommendations

ABOUT THE TABLES

The two tables we have prepared offer a ready reference for the synthesis and analysis of this research project.

THE CONTENT OF TABLE 1

Table 1 provides a visual guide to the types of vaccine hesitancy we learned about in each focus group as elaborated in the text of this report. At a glance, readers can see the variety, source, and context of hesitancy by each focus group. Each hesitancy reason is numbered. We also identify what kind of barrier to vaccination each reason presents. The final column of information offers a data-driven rationale for how to approach the distinct hesitancy reasons and circumstances that gave rise to them.

THE CONTENT OF TABLE 2

Table 2 integrates information from Table 1 and scales up the implications. In this table, the vaccine-hesitant reasons that are similar across focus groups are identified by number and gender. The two right-hand columns then suggest messaging approaches and concrete activities and actions for effectively reaching groups beyond those in our focus groups.

Table 1: Summary of vaccine hesitancy by focus group and context, identification of barriers, and how to speak to barriers.

Group:

Rescue Mission residents

(mixed gender; Latinx and White)

Residents here face extreme poverty and have agreed to living by certain rules and schedules and are required to be looking for work and stable housing.

In shelter setting residents have few social contacts besides other residents, except for occasional visits from outsiders or trips to doctors. Their hesitancy to get vaccinated relates back to their own experiences and advice from an influential person.

<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>The Backstory of Hesitancy</i>	<i>Barriers</i>	<i>How to Speak to the Barrier</i>
1. Vaccines are not made for me.	Respondents associated vaccines with few positive effects (got a flu vaccine, still got the flu) and many negative consequences (fell ill to other diseases after getting polio vaccine). Respondents had not gotten vaccines in 10+ years.	<i>Self-referential barrier.</i> Personal experience is the only basis for decision; these individuals are confusing bad luck with causation.	Acknowledge the fear raised from personal experience and bad luck. Use trusted messenger to demonstrate through stories the highly positive benefit for oneself, and for society generally, of getting this vaccination. Show comparative graphic to explain how flu and COVID-19 are different and how each vaccine differs in efficacy. SOME POTENTIAL FOR SHIFT.
2. The virus does not pose a risk of serious illness for them; danger of virus is overstated. Too much unknown about the virus' side effects.	Those who had gotten virus generally had mild symptoms. Mild symptoms are known, and the vaccine effects are not known.	<i>Self-referential barrier.</i> Experience with the virus is "known" and was manageable; vaccine is "unknown" AND confidence in one's own health and immune system can stand up to coronavirus.	Acknowledge their experience with COVID-19 was mild but new variants are not necessarily so forgiving. The vaccine can strengthen any immune system and help protect against strains like Delta. SOME POTENTIAL FOR SHIFT.

<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>The Backstory of Hesitancy</i>	<i>Barriers</i>	<i>How to Speak to the Barrier</i>
<p>3. The vaccine can cause health problems including the disease itself.</p>	<p>People with already compromised health (comorbidities) including blood clots, heart disease, open wound on leg, and/or diabetes, all fear the vaccine could make their problems worse and some believe it could cause the virus.</p>	<p>Trust barrier. Fear of vulnerability due to existing poor health or medical conditions; lack of information about vaccine side effects; conflation of side effects from vaccine and the disease itself.</p>	<p>Acknowledge fear of additional health problems from vaccination, the “unknown,” especially when having had the virus makes it a “known” and less scary. Untangle the perception that the vaccine can cause the disease.</p> <p>Create a graphic about types of medical conditions and corresponding advice about the vaccine. (If I have X condition do I need to worry about the vaccine?). Introduce people to medical professionals monitoring sites and have discussions about what to do if you experience side effects.</p> <p>SOME POTENTIAL FOR SHIFT.</p>
<p>4. Trusted messengers discouraged getting the vaccine and tipped the balance toward not getting it.</p>	<p>Certain religious leaders who provide dinner to shelter residents, doctors who see them in hospitals, or pseudo-scientists they read about on social media have all given bad advice (promoting vaccine hesitancy or the disproven idea that MMR vaccine causes autism). The harm of their messages is hard to reverse.</p>	<p>Trust barrier (in reverse). Influence of trusted messenger who delivered bad information.</p>	<p>Acknowledge the importance of trusted individuals. Try to locate other trusted messengers who can effectively explain how we know enough to be certain about the vaccine’s effectiveness and the importance of vaccination to protect themselves and the larger society.</p> <p>LOW-LIKELIHOOD OF SHIFT.</p>

Group:
Pueblo County Jail – Male inmates

(all Latino)

Most inmates are awaiting trial on drug charges or petty crime. Their positions on vaccine hesitancy relate to their sense of their own strength and independent thinking.

<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>The Backstory of Hesitancy</i>	<i>Barriers</i>	<i>How to Speak to the Barrier</i>
5. Men live by the “man code” that emphasizes personal freedom and decision-making.	The “man code” gives life in jail meaning because it is a philosophy for living, even in oppressive conditions. The code affirms your own sense of value in a setting that denies personal choices as a punitive part of living an incarcerated life. Deciding not to take the vaccine is thus an expression of personal freedom, central to the man code.	<i>Self-referential barrier.</i> The man code of living, even as narrowly applied in the jail setting, still leaves space to assert power by denying the influence of control by others.	Acknowledge male independence and self-reliance. Show benefits of vaccine and how independence can be enhanced if sickness is kept at bay. SOME POTENTIAL FOR SHIFT.
6. No trust of large pharmaceutical corporations.	Knowledge of prior history and abuse of public confidence. Citing other corporations that knowingly caused environmental problems out of greed and irony that produced harm to bodies.	<i>Trust barrier.</i> Distrust of corporations given health problems they may have created in past. A different vaccine producer might be okay.	Acknowledge that corporations are not perfect. Present comparative corporate information about the manufacturers, followed by the freedom to choose the vaccine they feel best about. SOME POTENTIAL FOR SHIFT.
7. Vaccines are not needed if you have a strong immune system.	Whether or not they had gotten COVID-19, all shared examples revealing the strength of their individual immune system.	<i>Self-referential barrier.</i> Confidence in one’s own health/immune system to stand up to coronavirus.	Acknowledge healthy bodies with good immune systems. Show stories of strong men who have boosted their own immune systems after getting the vaccine. SOME POTENTIAL FOR SHIFT.

Group:
Pueblo County Jail – Female inmates

(mixed Latina and White)

These women have lived difficult lives of poverty, substance addiction, and jail. Their sense of “toughness” and resilience condition their views of the vaccine as not needed.

The majority got COVID and managed recovery without problems. Their worry is the vaccine, not the virus.

<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>The Backstory of Hesitancy</i>	<i>Barriers</i>	<i>How to Speak to the Barrier</i>
8. Virus does not pose serious risk.	Five of seven women had gotten COVID-19 and recovered. They see no reason to take the vaccine if their bodies are already protecting them.	<i>Self-referential barrier.</i> Confidence in one’s own health/immune system to stand up to coronavirus.	Acknowledge healthy bodies with strong immune systems. Show tough women their ages who boasted of strong immune systems, and who have gotten stronger than ever. Use photos and visualizations of tough looking women like them getting the vaccine [I’m tough enough to get the vaccine]. SOME POTENTIAL FOR SHIFT.
9. The vaccine is dangerous, as bad as the disease; body can’t control the vaccine.	Many told stories about people they knew who had gotten the vaccine and then gotten very sick or even died. Two noted that several jail officers who had gotten vaccinated then got sick and never returned. Shared personal experiences create credibility, suggesting to them that similar stories must be true.	<i>Trust barrier.</i> Distrust of vaccine for fear it could cause severe illness; underlying distrust of system.	Acknowledge that it is disconcerting when people disappear. Show stories of tough women their ages who boasted of strong immune systems, and with vaccine, have now gotten stronger than ever. SOME POTENTIAL FOR SHIFT.
10. Not enough research about long-term side effects, vaccine development, and suspicious of ingredients.	One indicated she was a researcher and loved science, so what concerned her was not knowing enough, not seeing research about how vaccine came about so fast and what the long-term side effects are. Would consider getting vaccinated if out of jail and could access information.	<i>Information barrier.</i> Access to more direct information about research on vaccine side effects; poor transparency about ingredients.	Provide visit to jail from female scientists/science professors/educators who can speak woman to woman with female inmates. Address the process of vaccine development also. Make clear what we do know and distinguish from what we do not know. GOOD POTENTIAL FOR SHIFT.

<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>The Backstory of Hesitancy</i>	<i>Barriers</i>	<i>How to Speak to the Barrier</i>
11. No access to internet in jail; so, no ability to get good information about COVID-19 vaccines or test results in jail.	Woman recounted how she had always done her own research in high school and college and considers herself educated. She understands the situation “enough to not be tricked.”	Information barrier. Access to internet information blocked in jail; do not assume we can be tricked or that we don’t understand.	Provide internet sessions in jails to access WebMD, Mayo Clinic, CDC. Allow these individuals to become thought leaders and share what they have learned. Recognize that people without science-based educations are capable of and often interested in scientific information so long as it is accessible and well-presented. GOOD POTENTIAL FOR SHIFT.
12. COVID is “God’s will.”	If it is your time to go, it is your time to go.	Fatalism barrier. Fatalistic view of future, in this case based on religious convictions.	Acknowledge importance of a person’s faith. Use religious person to explain how faith and science are not opposites, and how science and innovation have made it possible to eradicate disease and lengthen lifespans in last 100 years, and how this access to better and better health through science can be seen as God’s will. LOW-LIKELIHOOD OF SHIFT.
13. Companies can’t be trusted.	One cited the baby powder scandal; another cited specific corporations that have knowingly done harm to people’s health.	Trust barrier. Distrust of corporations.	Acknowledge that corporations are not perfect. Present comparative corporate information about the manufacturers, followed by the freedom to choose the vaccine they feel best about. GOOD POTENTIAL FOR SHIFT.
14. The vaccine is about “population control.”	Attempt to reduce population may relate to recent publicity about the forced sterilization campaigns conducted in U.S. on Latina women.	Trust barrier. Distrust of institutions, both from immediate and longer-term experience.	The work here will require a lot of attention and time. LOW-LIKELIHOOD OF SHIFT.

Group:
Hispanic Women

Four married women with school-aged children; lived in Pueblo for decades. Three are undocumented. All worked in food service; pandemic cost one her job and another's work hours were cut. All are working again in spite of long-hauler problems with COVID-19.

This uncertain state of their own bodily health is the primary source of vaccine hesitancy.

<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>The Backstory of Hesitancy</i>	<i>Barriers</i>	<i>How to Speak to the Barrier</i>
15. Vaccine feels scary even if they recognize it is important.	Compromised health from long-hauler symptoms creates fear about whether their bodies can handle the vaccine.	Trust barrier. Need doctor's exam to ensure vaccine is safe given their health situations.	Offer public health examinations or consultations for anyone worried that their current health predicament could cause further problems. Free and confidential – no one will share the info. Note that some long haulers show improvement with vaccine. GOOD POTENTIAL FOR SHIFT.
16. Worry about missing work because of vaccine side effects.	The woman that lost her job in the pandemic is especially sensitive to another job loss that would create extreme hardships for her and her family.	Socioeconomic barrier. Can't afford to miss work if vaccine has bad side effects.	Create document of guide for programs supporting lost work-days due to COVID-19. If there is federal funding to cover lost days for employer, make this potential visible to women. Encourage private corporations to give free sick leave. SOME POTENTIAL FOR SHIFT.
17. Don't trust medical providers given their treatment of patients when sick with COVID-19. Skeptical they will help provide a trustworthy assessment about their readiness to get the vaccine.	Medical providers did not provide adequate help or resources for these COVID-19 patients, tapping into a deeper, longer-term sense of powerlessness and related distrust of institutions that do not work for them. The positive note for all was that their own relatives and people they know have been encouraging getting vaccine.	Trust barrier. Distrust of the medical professionals and health care institutions that "failed them" during their illnesses. Feeling of powerlessness.	Acknowledge fear of authorities and distress at being treated poorly. Communicate message with Latinx native Spanish-speaking women who have young children like them, people who are warm and resemble their families. They point out that equal protection for all and equal treatment for all is part of the Biden promise. That's why there is no reason to fear the vaccine. Offer a Spanish-speaking confidential hotline with medical concerns about the vaccine. SOME POTENTIAL FOR SHIFT.

Group:
Hispanic Male Farmworkers

Farmworkers live highly restrictive lives and depend entirely on their wages to fulfill their role as providers. Missing even one day of work to get the vaccine, and then to deal with any side-effects is not a realistic choice they feel they can make.

<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>The Backstory of Hesitancy</i>	<i>Barriers</i>	<i>How to Speak to the Barrier</i>
18. Side effects from the vaccine would jeopardize their jobs.	If a worker got sick from the vaccine, and was not able to work, the missed work could cost them their job.	<i>Socioeconomic barrier.</i> Fear of sickness as it would threaten their provider role in household if side effects of vaccine caused sickness (and worker was not rehired next season).	Acknowledge fear of loss of work. Communicate message with migrant farmer men talking in Spanish about the importance of getting the vaccine. Offer a Spanish-speaking confidential hotline with medical concerns about the vaccine. If there is federal funding to cover lost days for employer, make this potential visible to men. Encourage private corporations to give free sick leave. Offer Pfizer vaccine (fewer reported side-effects) to those who cannot get time off work. Give vaccine on day before a day off (if they have a day off). SOME POTENTIAL FOR SHIFT.
19. Lack of access to accurate information.	Farmworkers are in the fields long days and have no knowledge about how or where to get good information on vaccine in their native language.	<i>Information barrier.</i> No easy access to Spanish-language information.	Bring one or two vaccinated migrant workers to mobile vaccine clinic (or to where they live) who can talk candidly with group who see themselves in him/them. Also, offer a Spanish-speaking confidential hotline with medical concerns about the vaccine. Offer Spanish-speaking videos and arrange for local Spanish-speaking radio stations to include information about these resources. Maybe also create a Wi-Fi hot spot to allow those interested to do their own research, aided by community advocacy groups. GOOD POTENTIAL FOR SHIFT. (if accommodation can be made for side effects of vaccine).

Table 2: Actionable recommendations for similar vaccine hesitancy reasons.

<i>Relative potential for change</i>	<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>Reason # from Table 1</i>	<i>Barriers to vaccine acceptance – implicit and explicit (Pueblo research)</i>	<i>Concept: Scaled-up approach to messaging (Pueblo +)*</i>	<i>Action: Scaled up activities and use of trusted messenger (Pueblo +)*</i>
GOOD POTENTIAL FOR SHIFT.	No trust of large corporations such as vaccine manufacturers.	6, 13 Male (M), Female (F)	Trust barrier. Distrust of corporations given health problems they created in past. A different vaccine producer might be okay.	Acknowledge that corporations are not perfect. Present comparative corporate information about the manufacturers, show their positive role in public health concerns like vaccines. Then encourage vaccination, emphasize personal ability to choose the vaccine they feel best about.	Trusted messenger in community recruits a likeable business professor/educator or corporate representative to make repeated visits to sites like the jail, and more broadly, to local communities of color. Prepare handout about the critical role of private companies in history of vaccine development. Offer free vaccine clinic and follow-up clinic for people experiencing side effects.

<i>Relative potential for change</i>	<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>Reason # from Table 1</i>	<i>Barriers to vaccine acceptance – implicit and explicit (Pueblo research)</i>	<i>Concept: Scaled-up approach to messaging (Pueblo +)*</i>	<i>Action: Scaled up activities and use of trusted messenger (Pueblo +)*</i>
GOOD POTENTIAL FOR SHIFT.	Lack of access to accurate information about COVID vaccines.	11, 19 F, M	Information barrier. No easy access to internet, clear and accurate information, Spanish-language information.	Acknowledge importance of access to internet and to reputable research about the vaccine. Demonstrate how to achieve online access using mobile hot spots and teach how to get good information. Provide lists and links for reputable research (e.g., Johns Hopkins, WebMD, Mayo Clinic, CDC, Kaiser Family Foundation).	Use community-based trusted messengers to organize series of visits to jails and communities lacking access to internet or to reliable information. Bring health librarians or scientists to female and male groups separately, including inmates, farmworkers, low-income service and manufacturing industry workers, rural families, disadvantaged youth. Offer printed guide sheets with sources of information in target languages.
GOOD POTENTIAL FOR SHIFT.	Not enough research about long-term side effects, vaccine development, and suspicious of ingredients.	10 F	Information barrier. Assumption of inadequate scientific research about vaccine side effects; inadequate transparency about ingredients.	Use trusted female messengers who can relate to those expressing this type of hesitancy, often women (in our sample), and be prepared with information sheets/ infographics in accessible, relevant language(s). Hold discussions with groups of women in target communities on these topics.	Provide series of visits to women in jails, police departments, veterans groups, and rural areas using trusted messengers. Introduce female scientists/science professors who can speak woman to woman with female inmates and women in low-vax areas or work groups. Explain mRNA development over last 30 years and great breakthroughs it has made possible.

<i>Relative potential for change</i>	<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>Reason # from Table 1</i>	<i>Barriers to vaccine acceptance – implicit and explicit (Pueblo research)</i>	<i>Concept: Scaled-up approach to messaging (Pueblo +)*</i>	<i>Action: Scaled up activities and use of trusted messenger (Pueblo +)*</i>
GOOD POTENTIAL FOR SHIFT.	Vaccine feels scary even if they recognize it is important.	15 F	Trust barrier. Need doctor's exam to ensure vaccine is safe given their health situations; existing health problems.	Acknowledge fear of health risks and encourage women and men to seek out doctor to provide full examination and trusted advice about getting vaccine.	Offer white-coat public health examinations or consultations for anyone worried that their current health predicament could cause further problems. Must be free and confidential – provide assurance that the info will not be shared anywhere. Offer free vaccine clinic and follow-up clinic for people experiencing side effects.
SOME POTENTIAL FOR SHIFT.	Vaccine is not needed. Virus does not pose serious risk.	2, 7, 8 M, F	Self-referential barrier. Confidence in one's own health/immune system to stand up to coronavirus.	Acknowledge healthy bodies with strong immune systems. Explain how their experience with COVID-19 might have been mild but new variants are not necessarily so forgiving. The vaccine can strengthen any immune system and help protect against strains like Delta.	Recruit trusted messengers (male and female) who are tough, fit, and young. Cite evidence using testimonials. Co-develop a script with them to deliver to groups of youth and people under 40 who are not vaccinated. Show data to indicate that virus is a serious risk for younger people too; bundle with good news about vaccine.

<i>Relative potential for change</i>	<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>Reason # from Table 1</i>	<i>Barriers to vaccine acceptance – implicit and explicit (Pueblo research)</i>	<i>Concept: Scaled-up approach to messaging (Pueblo +)*</i>	<i>Action: Scaled up activities and use of trusted messenger (Pueblo +)*</i>
SOME POTENTIAL FOR SHIFT.	The vaccine is dangerous, as bad as the disease; body can't control the vaccine.	3, 9 F, M	Trust barrier. Fear of severe illness from getting the vaccine; underlying distrust of system.	Acknowledge they have healthy bodies with strong immune systems. Explain how body works with the vaccine.	Recruit tough women/men who are middle-aged (30-50) whose strong immune systems are now stronger than ever after getting the vaccine. Tell story of how vaccine works as booster like vitamins.
SOME POTENTIAL FOR SHIFT.	Men and women live by a creed emphasizing personal freedom and independence in decision-making.	5 M/F	Self-referential barrier. The “man code” of living, applies as well to women who share a similar philosophy of self-reliance and need for freedom. This stance often rejects the influence of control by others.	Acknowledge the independence and self-reliant thinking of groups of men/women (in jails, police departments, military units, rural areas). Show target audiences how their values and values of the vaccine align. And that once you realize who is getting the vaccine and how it can make you stronger, it will be desirable.	Recruit vaccinated “tough guy” or “tough woman” respectively to meet with men/women in jail, police, military, in gyms, or rural areas as role model who identifies with the principles of personal freedom and independence. Then, explain how it takes a real man to ‘man up’ and get the vaccine – use it as a source of strength and a sign of independence. Also, allow for privacy in vaccination process so no one has to admit to others whether they got it or not.

<i>Relative potential for change</i>	<i>Expressed Reasons for Vaccine Hesitancy</i>	<i>Reason # from Table 1</i>	<i>Barriers to vaccine acceptance – implicit and explicit (Pueblo research)</i>	<i>Concept: Scaled-up approach to messaging (Pueblo +)*</i>	<i>Action: Scaled up activities and use of trusted messenger (Pueblo +)*</i>
SOME POTENTIAL FOR SHIFT.	Vaccines are not made for me.	1 M/F	Self-referential barrier. Personal experience is the only basis for decision; confusing bad luck with causation.	Acknowledge the fear raised by personal experiences and bad luck with vaccines. Demonstrate through stories the highly positive benefit for oneself, and for society generally, of getting this vaccination.	Use trusted messenger to show a comparative infographic to explain how flu and COVID-19 are different and how mRNA vaccine was developed over 30 years ago and its breakthrough success recently.

*NOTE: “Pueblo +” header in two far right columns reflects attempt to generalize actionable messaging and activities for groups beyond our data sets.

Recommendations for the Near-Term

In addition to the range of recommendations we have considered and presented in the tables, we also recommend the following:

BUILD ON THIS RESEARCH PROJECT

A subsequent phase of this research would follow up on the recommendations in the two tables. Specifically, we would suggest matching researchers and the Culture Brokers engaged in this pilot study with marketing and communications experts in order to co-develop a suite of tailored messages that speak to specific contexts of hesitancy. Scenario-based ideas could be generated to connect thoughtfully and emotionally with the lived experience of distinct cultural populations that are not accustomed to seeing or hearing themselves represented in advertising. A widespread radio campaign could be especially effective for Hispanic populations. During our fieldwork in Pueblo, we heard numerous Public Service Announcements (PSAs) about vaccine clinics in low-income Hispanic neighborhoods. These kinds of PSAs could be dramatically improved with the help of marketing professionals who could tell stories that would resonate and identify the sets of reasons we have documented and shown to be related to certain life circumstances and experiences.

BUILD VACCINE CONFIDENCE

Identify what situations and populations might be most amenable to persuasion. If some people are teetering on the fence or could be shown how their own lives could be safer, those most amenable can then be recruited to help persuade others.

BUILD FEMA'S CAPACITY TO EMPLOY CULTURE BROKERS AS FACILITATORS

An emphasis on identifying and recruiting a lot of trusted messengers from diverse backgrounds, cultures, and regions who are prepared to use their positions to help people understand the personal stakes of getting vaccinated, and to help people *want* to get vaccinated (see next section about the process and advanced work in how to identify trusted messengers).

Recommendations for Longer-term Opportunities: Addressing Needs as a Basis for Equitable Outcomes

BUILD EQUITABLE APPROACHES ACROSS THE U.S.

The work to create genuine equity across the U.S. landscape of diverse communities is not an easy undertaking. But awareness of the need for fundamental change and commitment to concrete, widespread, and structural work toward this goal is a much-needed step forward.

SUPPORT THE FEMA ADMINISTRATOR'S VISION

We applaud Administrator Criswell's efforts to seek feedback from communities and individuals as well about desirable new directions for FEMA.

SUPPORT SOCIAL SCIENCE RESEARCH

Leverage skills of social scientists trained to do the work that will make FEMA stronger and more responsive to communities of color and under-resourced communities generally.

Recommendations for Methodological Applications: Using Culture Brokers to Build Trust in Communities

BUILD CAPACITY IN THE EMERGENCY MANAGEMENT SPHERE FOR 21ST CENTURY CHALLENGES

The research and relationship-building efforts that went into this project provide a clear affirmation of the value of our approach. We see great promise in using the Culture Broker model and having these specifically selected individuals serve as trusted messengers for communities we want to reach, understand, and support. For a brief example of one way this process worked for us in Pueblo, see "Example..." page 10.

THINK ABOUT STAKEHOLDERS AND VITAL PARTNERSHIPS IN A FRESH WAY

Like the practice of using Community Health Workers (often called "promotoras," or "advocates" in English) the role of a Culture Broker is not made for just anyone. It is not a role that troops of local volunteers can easily be trained to adopt. Instead, these are people who already have the credibility and trust of communities because they already know who lives there and what they need. These are also not local hires, or Voluntary Agency Liaisons, because as soon as this person would become a FEMA employee, the trust they engender in their community might be lost due to their government

affiliation. Instead, these people need to straddle both worlds, and they need to be remunerated for their services, as they were in this research project. Without our ability to build relationships with these skilled and knowledgeable individuals, we could never have accomplished what we did in a highly compressed visit where we knew no one and had never visited—a situation anyone in FEMA can likely relate to. This is the power and the promise of our methodology.

Acknowledgments

Our research team depended on a great many people for their insights and willingness to connect us to local community members in Pueblo. We first thank the expert members of FEMA Region VIII for their guidance and support throughout this project. In particular, we thank Daniel Green at R8 Headquarters for his unstinting support and creative leadership throughout the development of this project. April Lipinski and Jessica Haynes provided enlightened helpfulness at every turn. We thank the regional epidemiologist, Margaret Comstock, at the Pueblo County Department of Public Health for her great resourcefulness and efforts to connect us to those who could help. Her fellow epidemiologist, Anne Hill, provided many rounds of help and vaccine analysis. To the extraordinarily committed community organizers, Yesenia Beascochea and Theresa Trujillo at the Center for Health Progress, we are deeply grateful. These amazing women and the Caracol leaders who work with them offered us critical help and expertise and brought together two of the focus groups. Sister Nancy shared a bounty of insights and inspiration during our visit to her 25-year old Center for Los Pobres, helping us meet the clients who depend on the Center and the staff and volunteers who work with such devotion. We thank the officers at the County Jail who were ready and willing to support our research. We thank Kathy Cline, Executive Director of the Rescue Mission, who manages people and systems for the indigent with grace and clarity, and who offered us vital help in arranging a focus group with shelter residents. In addition to these magnificent people, there were also community health experts, professors, and volunteers at vaccine clinics who kindly supported our efforts including Randi Addington, Professor Alegría Ribadeneira, Jody Carrillo, and Helen Benevides. And to the working people of Pueblo that we encountered in food service jobs, thank you for the work you do and for making our visit to Pueblo better. In the course of the overall project, we thank Alexa Dietrich and Sarah Powell, two members of the Culture and Disaster Action Network (CADAN) and Ann Magennis, all of whom offered helpful guidance at a key point in the process. Finally, special thanks to Jane Albritton whose steady support and writing expertise enhanced the quality of this report.

References Cited

Anderson, James. 2021. [“Colorado governor signs farmworker rights and wages law.”](https://apnews.com/article/co-state-wire-colorado-immigration-business-laws-79ee6dbb2dc0a69c3198d0fd4d310ef8) *Associated Press*, June 25, 2021. (<https://apnews.com/article/co-state-wire-colorado-immigration-business-laws-79ee6dbb2dc0a69c3198d0fd4d310ef8>)

Angel, Ronald J. and Angel, Jacqueline L. 2009. *Hispanic Families at Risk: The New Economy, Work, and the Welfare State*. Springer: New York.

- Artiga, Samantha, Bradley Corallo, and Olivia Pham. 2020. [“Racial Disparities in COVID-19: Key Findings from Available Data and Analysis.”](https://bit.ly/3eiPqRz) KFF, August 17, 2020. (https://bit.ly/3eiPqRz).
- Berganini, Stefanie. 2019. “Neoliberal Dirt: Homelessness, Stigma, and Social Services in Fort Collins, Colorado.” Master’s thesis, Colorado State University.
- Bogart, Laura M., Lu Dong, Priya Gandhi, Samantha Ryan, Terry L. Smith, David J. Klein, Luckie-Alexander Fuller, and Bisola O. Ojikutu. [“What Contributes to COVID-19 Vaccine Hesitancy in Black Communities, and How Can It Be Addressed?”](https://rand.org/pubs/research_reports/RRA1110-1.html) Santa Monica, CA: RAND Corporation, 2021. (https://rand.org/pubs/research_reports/RRA1110-1.html)
- Browne, Katherine E. 2015. [Standing in the Need: Culture, Comfort, and Coming Home after Katrina.](https://utpress.utexas.edu/books/browne-standing-in-the-need) Austin: University of Texas Press. (https://utpress.utexas.edu/books/browne-standing-in-the-need)
- Browne, Katherine E, Laura Olson, Jenny Hegland, Ana-Marie Jones, Julie Maldonado, Elizabeth Marino, Keely Maxwell, Eric Stern, Wendy Walsh. 2019. [Building Cultures of Preparedness: A Report for the Emergency Management Higher Education Community.](https://training.fema.gov/hiedu/docs/latest/2019_cultures_of_preparedness_report_10.2.18%20final.pdf) The U.S. Federal Emergency Management Agency (FEMA). (https://training.fema.gov/hiedu/docs/latest/2019_cultures_of_preparedness_report_10.2.18%20final.pdf)
- Centers for Disease Control and Prevention (CDC) January 31, 2020. [“CDC SVI 2018 Documentation.”](https://svi.cdc.gov/Documents/Data/2018_SVI_Data/SVI2018Documentation.pdf) (https://svi.cdc.gov/Documents/Data/2018_SVI_Data/SVI2018Documentation.pdf)
- 2021: [“COVID-19 Vaccinations in the United States.”](https://covid.cdc.gov/covid-data-tracker/#vaccinations) Updated daily. (https://covid.cdc.gov/covid-data-tracker/#vaccinations)
- June 8-24, 2021. [“Rapid COVID-19 State of Vaccine Confidence Insights Report.”](https://www.cdc.gov/vaccines/covid-19/downloads/SoVC_myocarditis.pdf) (https://www.cdc.gov/vaccines/covid-19/downloads/SoVC_myocarditis.pdf)
- July 7, 2021. [“COVID-19 State of Vaccine Confidence Insights Report. Report 11.”](https://www.cdc.gov/vaccines/covid-19/downloads/SoVC-report-11.pdf) (https://www.cdc.gov/vaccines/covid-19/downloads/SoVC-report-11.pdf)
- Carlsen, Audrey, Pien Huang, Zach Levitt, Daniel Wood. 2021. *National Public Radio* (NPR). [“How Is The COVID-19 Vaccination Campaign Going in Your State?”](https://www.npr.org/sections/health-shots/2021/01/28/960901166/how-is-the-covid-19-vaccination-campaign-going-in-your-state): (https://www.npr.org/sections/health-shots/2021/01/28/960901166/how-is-the-covid-19-vaccination-campaign-going-in-your-state)
- Census Reporter. 2019. [Pueblo County Census Data](https://censusreporter.org/profiles/16000US0862000-pueblo-co/), derived from the American Community Survey, 2019. (https://censusreporter.org/profiles/16000US0862000-pueblo-co/)
- Center for Health Progress. 2018. [“The Real History of Pueblo, Colorado.”](https://centerforhealthprogress.org/blog/the-real-history-of-pueblo-colorado/) Accessed July 20, 2021. (https://centerforhealthprogress.org/blog/the-real-history-of-pueblo-colorado/)

Chou, Wen-Ying Sylvia, Caitlin Burgdorf, Anna Gaysynsky, and Christine Hunter. 2021. *COVID-19 Vaccination Communication: Applying Behavioral and Social Science to Address Vaccine Hesitancy and Foster Vaccine Confidence*. Bethesda, Maryland: National Institutes of Health.

City-Data. 2021. "[Pueblo Colorado.](http://www.city-data.com/city/Pueblo-Colorado.html#b)" [City data for Pueblo Colorado](http://www.city-data.com/city/Pueblo-Colorado.html#b). Last modified 2021. (http://www.city-data.com/city/Pueblo-Colorado.html#b)

CIVIQS. 2021. "[Coronavirus: Outbreak Concern](https://bit.ly/3wBBjOf)". COVID survey among registered voters, Feb 25, 2020—Jul 6, 2021." *Civiqs*. (https://bit.ly/3wBBjOf)

Coloradoan. 2021. "[Pueblo County, CO COVID-19 Vaccine Tracker.](https://data.coloradoan.com/covid-19-vaccine-tracker/colorado/pueblo-county/08101/)" Synced with CDC data. (https://data.coloradoan.com/covid-19-vaccine-tracker/colorado/pueblo-county/08101/)

[Colorado Department of Public Health & Environment \(CDPHE\)](https://cdphe.colorado.gov/). 2021. Colorado COVID-19 Vaccination Data Dashboard. Accessed July 20, 2021. (https://cdphe.colorado.gov/)

Colorado Immunization Information System (CIIS). 2021. Vaccine and Demography Data for Pueblo County. On file with the Colorado Department of Public Health and Environment.

Coltrain, Nick. 2017. "Jail crowding causes safety, staffing concerns from Fort Collins to Pueblo." *The Coloradoan*, October 20, 2017. <https://bit.ly/3ii3zzk>.

COVIDCheck Colorado. May 2021. [Colorado COVID-19 Vaccine Hesitancy and Access Survey](https://www.covidcheckcolorado.org). Results available upon request. (https://www.covidcheckcolorado.org)

[Culture and Disaster Action Network \(CADAN\)](https://cultureanddisaster.org/). 2021. Organization website. (https://cultureanddisaster.org/)

David, Cassandra R. et al. 2021. [Support Strategies for Socially Marginalized Neighborhoods Likely Impacted by Natural Hazards](https://coastalresiliencecenter.unc.edu). Coastal Resilience Center, The University of North Carolina Chapel Hill, July 2021. (https://coastalresiliencecenter.unc.edu)

Dawson, Nigel. 2016. *The Undocumented Experience in the United States and Fort Collins, Colorado* (Master's portfolio). Department of Anthropology, Colorado State University.

D'Souza, Gypsyamber, and David Dowdy. 2021. "[What is Herd Immunity and How Can We Achieve It with COVID-19? Stopping SARS-CoV-2 will require a substantial percentage of the population to be immune.](https://www.jhsph.edu/covid-19/articles/achieving-herd-immunity-with-covid19.html)" April 6, 2021. *Johns Hopkins School of Public Health*, April 6, 2021. (https://www.jhsph.edu/covid-19/articles/achieving-herd-immunity-with-covid19.html)

Farmworker Justice. 2021. [H-2A Guest Worker Program](https://bit.ly/3wN0v3Z). (https://bit.ly/3wN0v3Z)

Federal Emergency Management Administration (FEMA) and RiskMAP. 2020. [Guide to Expanding Mitigation: Making the Connection to Equity](https://www.fema.gov/sites/default/files/2020-09/fema_region-2_guide-connecting-mitigation-equity_09-10-2020.pdf). (https://www.fema.gov/sites/default/files/2020-09/fema_region-2_guide-connecting-mitigation-equity_09-10-2020.pdf)

- Graham, David A. 2021. ["It's Not Vaccine Hesitancy. It's COVID-19 Denialism."](https://bit.ly/3kfWL8B) *Atlantic*, April 27, 2021. (https://bit.ly/3kfWL8B)
- Hamel, Liz, Samantha Artiga, Alana Safarpour, Mellisha Stokes, and Mollyann Brodie. 2021. "KFF COVID-19 Vaccine Monitor: COVID-19 Vaccine Access, Information, and Experiences Among Hispanic Adults in the U.S." *KFF*, May 13, 2021. <https://bit.ly/3eaVHPv>.
- Hamel, Liz, Lunna Lopes, Audrey Kearney, Grace Sparks, Mellisha Stokes, and Mollyann Brodie. 2021. ["KFF COVID-19 Vaccine Monitor: June 2021."](https://bit.ly/2VA5IPG) *KFF*, June 30, 2021. (https://bit.ly/2VA5IPG)
- Hillstrom, Zach. 2021. ["Despite cases increasing, COVID-19 vaccine supply 'far outweighs' demand in Pueblo."](https://www.chieftain.com/story/news/2021/04/28/covid-cases-and-hospitalizations-pueblo-rise-despite-wealth-vaccine/4872382001/) *The Pueblo Chieftain*, April 28, 2021. (https://www.chieftain.com/story/news/2021/04/28/covid-cases-and-hospitalizations-pueblo-rise-despite-wealth-vaccine/4872382001/)
- Hooper, Monica Webb, Anna María Nápoles, and Eliseo J. Pérez-Stable. 2021. ["No Populations Left Behind: Vaccine Hesitancy and Equitable Diffusion of Effective COVID-19 Vaccines."](https://doi.org/10.1007/s11606-021-06698-5) *Journal of General Internal Medicine* 36 (7): 2130-2133. (https://doi.org/10.1007/s11606-021-06698-5)
- Jean-Jacques, Muriel, and Howard Buchner. 2021. "Vaccine Distribution—Equity Left Behind?" *The Journal of the American Medical Association* 325 (9): 829-830.
- Karpman, Michael, Genevieve M. Kenney, Stephen Zuckerman, Dulce Gonzalez, and Brigette Courtot. 2021. ["Confronting COVID-19 Vaccine Hesitancy among Nonelderly Adults Findings from the December 2020 Well-Being and Basic Needs Survey."](https://urbn.is/3r7UcXv) *Robert Wood Johnson Foundation and Urban Institute*, February 2021. (https://urbn.is/3r7UcXv)
- Kearney, Audrey, Lunna Lopes, and Mollyann Brodie. 2021. ["Vaccine Hesitancy among Hispanic Adults."](https://bit.ly/3xSTD6B) *KFF*, January 14, 2021. (https://bit.ly/3xSTD6B)
- Khubchandani1, Jagdish, Sushil Sharma, James H. Price, Michael J. Wiblishauser, Manoj Sharma, & Fern J. Webb. 2021. ["COVID-19 Vaccination Hesitancy in the United States: A Rapid National Assessment."](https://doi.org/10.1007/s10900-020-00958-x) *Journal of Community Health* 2021 (46): 270-77. (https://doi.org/10.1007/s10900-020-00958-x)
- LaFraniere, Sharon, and Noah Weiland. 2021. ["F.D.A. Attaches Warning of Rare Nerve Syndrome to Johnson & Johnson Vaccine."](https://nyti.ms/36xd4Wq) *The New York Times*, July 12, 2021. (https://nyti.ms/36xd4Wq)
- Lovelace Jr., Berkeley. 2021. ["J&J Covid vaccine distribution in poor, Black communities raises race questions."](https://cnb.cx/2Vp3qTh) *CNBC*, March 10, 2021. (https://cnb.cx/2Vp3qTh)

- Manjeshwar, Sanjana. 2020. "[America's Forgotten History of Forced Sterilization.](#)" *Berkeley Political Review*, November 4, 2020. (<https://bit.ly/3wlrSfn>)
- Marino, Elizabeth K., and A.J. Faas. 2020. "[Is vulnerability an outdated concept? After subjects and spaces.](#)" *Annals of Anthropological Practice* 44: 33-46. (<https://doi.org/10.1111/napa.12132>)
- Money, Luke., and Rong-Gong Lin II. 2021. "[Delta variant's biggest danger – 'a pandemic of unvaccinated people'](#)." *Los Angeles Times*, June 25, 2021. (https://www.register-herald.com/health/delta-variant-s-biggest-danger-a-pandemic-of-unvaccinated-people/article_66af19c8-d5ea-11eb-baf0-6391f3057d51.html)
- New York Times. 2021. [Interactive Map of COVID-19 Cases by County](#). Accessed July 20, 2021. (<https://www.nytimes.com/interactive/2021/us/pueblo-colorado-covid-cases.html>)
- National Academies of Sciences, Engineering, and Medicine. 2021. [Addressing Disaster Vulnerability among Homeless Populations during COVID-19](#). Washington, DC. The National Academies Press. (<https://doi.org/10.17226/26220>)
- Ngudda, Nambi, Layota Hill, and Samantha Artiga. 2021. "[Latest Data on COVID-19 Vaccinations by Race/Ethnicity.](#)" *KFF*, July 21, 2021. (<https://www.kff.org/coronavirus-covid-19/issue-brief/latest-data-on-covid-19-vaccinations-race-ethnicity/>)
- Pham, Olivia, Robin Rudowitz, and Jennifer Tolbert. 2021. "[COVID-19 Risks and Vaccine Access for Individuals Experiencing Homelessness: Key Issues to Consider.](#)" *KFF*, March 24, 2021. (<https://www.kff.org/medicaid/issue-brief/covid-19-risks-vaccine-access-individuals-experiencing-homelessness-key-issues/>)
- Pueblo County Department of Public Health and Environment. 2021. [Pueblo County COVID-19 data dashboard](#). Updated weekly. (<https://county.pueblo.org/public-health/pueblo-county-covid-19-case-data>)
- Rees, Jonathan H. 2021. "[Colorado Fuel & Iron.](#)" *Colorado Encyclopedia*, last modified January 31, 2021, (<https://coloradoencyclopedia.org/article/colorado-fuel-iron>)
- Savoia, Elena, Rachael Piltch-Loeb, Beth Goldberg, Cynthia Miller-Idriss, Brian Hughes, Alberto Montrond, Juliette Kayyem, and Marcia A. Testa. 2021. "[Predictors of COVID-19 Vaccine Hesitancy: Socio-Demographics, Co-Morbidity, and Past Experience of Racial Discrimination.](#)" *Vaccines* 2021 (9): 767. (<https://doi.org/10.3390/vaccines9070767>)
- Seaman, Jessica. 2021. "[Colorado COVID-19 vaccination data shows another layer of racial inequity.](#)" *Denver Post*, January 22, 2021. (<https://www.denverpost.com/2021/01/22/colorado-covid-19-vaccine-racial-inequity/>)

- Slevin, Colleen, and Patty Nieberg. 2020. [“Inmates facing big virus risks not near top of vaccine lists.”](https://apnews.com/article/coronavirus-pandemic-colorado-prisons-dfd8ecbe7e51ed5057933e293ac19f05) *Associated Press*, December 16, 2020. (https://apnews.com/article/coronavirus-pandemic-colorado-prisons-dfd8ecbe7e51ed5057933e293ac19f05)
- Smith, Tara C. 2017. [“Vaccine Rejection and Hesitancy: A Review and Call to Action.”](https://doi.org/10.1093/ofid/ofx146) *Open Forum Infectious Diseases* 4 (3): ofx146. (https://doi.org/10.1093/ofid/ofx146)
- Sobo, Elisa J., Diana Schow, and Stephanie McClure. 2021. [“US Black and Latino communities often have low vaccination rates—but blaming vaccine hesitancy misses the mark.”](https://bit.ly/3hADYml) *The Conversation*, July 7, 2021. (https://bit.ly/3hADYml)
- Swanson, Conrad. 2021. [“Gov. Polis won’t allow Denver mayor to vaccinate homeless residents ahead of schedule.”](https://www.denverpost.com/2021/02/17/colorado-denver-hancock-polis-vaccine-homeless-covid-19/) *Denver Post*, February 17, 2021. (https://www.denverpost.com/2021/02/17/colorado-denver-hancock-polis-vaccine-homeless-covid-19/)
- Tai, Don Bambino Geno, Aditya Shah, Chyke Doubeni, Irene G. Sia, and Mark L. Wieland. 2021. [“The Disproportionate Impact of COVID-19 on Racial and Ethnic Minorities in the United States.”](https://doi.org/10.1093/cid/ciaa815) *Clinical Infectious Diseases* 72 (4): 703-706. (https://doi.org/10.1093/cid/ciaa815)
- Union of Concerned Scientists. 2019. [“Setting Equity Goals.”](https://s3.amazonaws.com/ucs-documents/science-and-democracy/ucs-sntk-setting-equity-goals.pdf) Scientist tool kit, January 2019. (https://s3.amazonaws.com/ucs-documents/science-and-democracy/ucs-sntk-setting-equity-goals.pdf)
- U.S. Census. 2019. Pueblo City, Colorado. Accessed July 20, 2021.
- U.S. Department of Agriculture. 2021. [H-2 Visa Program](https://bit.ly/3epYy74). (https://bit.ly/3epYy74)
- Wallace, Alicia. 2015. [“Slow to rebound, Pueblo is redefining it’s economic image.”](https://www.denverpost.com/2015/12/05/slow-to-rebound-pueblo-is-redefining-its-economic-image/) *Denver Post*, December 5, 2015. (https://www.denverpost.com/2015/12/05/slow-to-rebound-pueblo-is-redefining-its-economic-image/)
- Wilson, Chris. 2021. [“The U.S. Is Entering a New Covid-19 Vaccination Crisis.”](https://time.com/6046880/covid-19-vaccine-slowdown/) *Time*, May 10, 2021. (https://time.com/6046880/covid-19-vaccine-slowdown/)
- White House. 2021. [“The Biden-Harris Plan to Beat COVID-19”](https://www.whitehouse.gov/priorities/covid-19/). *White House*, January 2021. (https://www.whitehouse.gov/priorities/covid-19/)
2021. [The National Strategy for the COVID-19 Response and Pandemic Preparedness.”](https://www.whitehouse.gov/wp-content) *White House*, January 2021. (https://www.whitehouse.gov/wp-content)
- Zhang, Sarah. 2021. [“America’s Vaccine Future is Fragmenting.”](https://www.theatlantic.com/science/archive/2021/07/americas-vaccine-fate-is-fragmenting/619358/) *Atlantic*, July 3, 2021. (https://www.theatlantic.com/science/archive/2021/07/americas-vaccine-fate-is-fragmenting/619358/)