

Farmworker COVID-19 Community Assessments

Weld County, CO
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NCFH

National Center for Farmworker Health, Inc.

TABLE OF CONTENTS

pg.3

INTRODUCTION

pg.6

KEY FINDINGS

pg.4

BACKGROUND ON
WELD COUNTY

pg.20

CONCLUSION

pg.5

METHODOLOGY

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We are deeply grateful to [Project Protect Food System Workers](#), [Colorado Legal Services](#), and [Salud Family Health Centers](#) for their assistance in providing highly insightful knowledge about the local farmworker populations in their service area, and additionally to [Project Protect Promotora Network](#) for assisting in data collection for this assessment. We are grateful to [Nezahualcoyotl Xihetecutli](#) of the [Farmworker Association of Florida](#) for helping us to identify the variant of Nahuatl spoken among farmworker participants. We are especially grateful to the interview participants who gave us their time to help us understand local challenges and strengths, and to the farmworkers who provided their time, knowledge, and insight to this assessment.



1. INTRODUCTION

This report provides a profile of farmworkers and their experiences during the COVID-19 pandemic in Weld County, Colorado that was conducted as part of the Farmworker COVID-19 Community Assessments (FCCA) for the National Center for Farmworker Health (NCFH). These assessments are part of a national outreach and vaccination project funded by the Centers for Disease Control and Prevention (CDC). Farmworkers are a particularly vulnerable population during a public health emergency due to their travel, working, and living conditions. The purpose of the FCCA was to develop and implement data collection methodologies that could quickly be activated during a public health emergency, such as the COVID-19 pandemic. The rapid assessment provides CDC and others with actionable findings about farmworkers' experiences and recommendations on how to best meet their needs arising from the COVID-19 pandemic.

This report is one in a series of community assessments conducted with farmworkers in diverse rural communities in different parts of the U.S.. Weld County was selected as part of the national assessment project due to the high number of farmworkers in the region. Additionally, a large proportion of the Colorado agriculture industry is in dairy production – a sector that had not been previously assessed through this project.



2. BACKGROUND ON WELD COUNTY

Weld County has a population of over 340,000 people and is the center of a thriving agricultural community.(1) The county is ranked first in the state for total land in farms, with nearly 2.1 million acres of farm land and over 4,000 farms in Weld County. Ninety-six percent of farms are family farms.(2) Farm land in Weld County is primarily pastureland (53% of total acreage) and over 80% of agricultural sales are from livestock, poultry, and associated products (such as eggs, milk, wool, etc.). Weld County is ranked first in the state and second in the U.S. for total market value of livestock, poultry, and products sold. Weld is also first in the state for total market value of crops sold, with nursery, greenhouse, floriculture, sod, hay, grains, oilseeds, dry beans, and dry peas generating the most sales.(3)

Figure 2.1: Weld County in Colorado

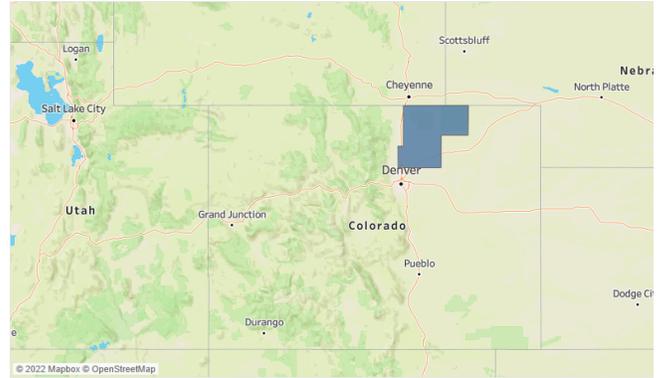


Table 2.1. Key Agricultural Data for Weld County

County Population	Number of Farms	Acres of Farm Land	Average Farm Size	Top Crops (sales)	Top Livestock (sales)	% of Farms that Hire Labor
340,036	4,062 farms	2,098,803 acres	517 acres	Grains, oilseeds, dry beans, dry peas, nursery, greenhouse, floriculture, and sod	Cattle and calves for dairy	22%

Sources: U.S. Census of Agriculture 2017, U.S. Census Bureau.

NCFH estimates that there are approximately 6,370 farmworkers in Weld County. H-2A guest workers are foreign nationals who receive a temporary visa to work in agriculture in the U.S., and do not bring their spouse or children with them to the U.S.(4) The H-2A visa program employs a small proportion of workers in the county. In 2021, the temporary visa program employed about 415 workers in the county’s agricultural industry, a 20% increase in the past five years.(5) Based on data from 2021, the number of H-2A workers is fairly level in Weld County throughout the year, with the smallest number present in December and January (see Figure 2.2). Most H-2A workers first arrive between January and April.(6)

Figure 2.2: Weld County H-2A Guest Workers Present per Month, 2021



Image: NCFH Farm Labor Data Dashboard

3. METHODOLOGY

The FCCA’s methodology included both a quantitative and a qualitative component and was based on the CDC’s rapid community assessment methodology.⁽⁷⁾ To determine community sites and best practices for recruitment, NCFH relied on information shared from key stakeholders: Project Protect Food System Workers, Colorado Legal Services, Colorado Immigration Rights Coalition, and Salud Family Health Centers. NCFH contracted with Project Protect Food System Workers outreach staff to collect farmworker surveys with NCFH staff. This assessment received a non-research exemption by the CDC; therefore, IRB approval was not needed. This report summarizes quantitative data from survey respondents and qualitative data from interview respondents and community stakeholder meetings.

Quantitative survey respondents were eligible to participate if they were a farmworker, defined as individuals who had been employed in an industry under NAICS codes 111, 112, 1111, or 1112, which includes both crop and animal production and support activities for those industries. They were eligible to participate if they had worked in agriculture one day or more since March 15, 2020. The quantitative data was collected using an in-person survey. The survey examined farmworkers’ knowledge, attitudes and practices related to the COVID-19 emergency with a focus on vaccination coverage, as well as structural factors that CDC and other federal, state, and local agencies and organizations could address, such as barriers to safety, healthcare access, testing and vaccination. Respondents were recruited by NCFH staff at a variety of locations, including randomly selected job and housing sites, and non-randomly selected check cashing houses, grocery stores, laundromats, and restaurants. Before participating in the survey, all respondents were provided with a verbal informed consent that emphasized that all data collected would be anonymous, no individual data would be shared publicly, and that they could stop participating in the

survey at any time and that they did not have to answer all the questions if they did not want to. The survey took between 15 and 30 minutes to complete, and survey respondents received a \$30 gift card for their participation. The surveys were conducted as an in-person interview in English or Spanish, with ad-hoc interpretation for Mesoamerican language speakers when needed. Descriptive statistics for the survey data are provided in the key findings section below. All survey data are unweighted.

Qualitative interviews were conducted with three different groups: 1) farmworkers, 2) agricultural employers, and 3) key informants/farmworker experts including farmworker organization representatives and farmworker advocates. Each interview lasted approximately 60 minutes, and participants were paid \$100 each for their participation by check, gift card, or money order. Interviews were conducted in-person or over the phone in English or Spanish. Farmworkers were recruited from survey participants or word of mouth from local outreach workers. Agricultural employers were recruited during surveys or through referral. Key Informants were recruited from stakeholders in the region and/or from referral of other key informants.

4. KEY FINDINGS

A total of 249 surveys were completed in-person in Weld County, Colorado by NCFH staff with help from local navigators from the Project Protect Food System Workers. Data collection took place over two weekends from May 12 – 15, and June 10 – 12, 2022. Eleven qualitative interviews were conducted, including five in-depth interviews with farmworkers, three in-depth interviews with agricultural employers, and three key informant interviews with local farmworker experts or representatives of local farmworker-serving organizations. All surveys and interviews were conducted in English or Spanish.

DEMOGRAPHICS

Majority of respondents surveyed were male (80%), with a median age of 35 years, and identified as Hispanic/Latinx (91%), (see Table 4.1). Sixty-nine percent were born in Mexico and very few workers were born in the U.S. (3%). Nearly half of respondents were undocumented (49%), while over one-fourth of respondents held an H-2A visa (28%). Qualitative interviews suggest that there has recently been an increase in the use of H-2A workers for crop production, the majority of which are from Mexico. One key informant also noted that the age of workers has changed with the years, with workers tending to be younger in the H-2A program.

Approximately four out of five respondents reported speaking limited to no English: 36% of respondents reported speaking English “a little” and 48% reported “not at all”. The most common languages spoken among respondents were Spanish (97%), English (15%), and Nahautl (10%).

Approximately half of the sample (53%) worked in crop production and half worked in animal production (46%), including dairy. Over one-third of workers reported traveling in the last 12 months for work in agriculture (36%). Key informants suggest that domestic migration patterns have decreased due to an increase in the usage of the H-2A program. In addition, dairy workers are needed year-round. Those working in the predominant dairy industry establish themselves within Colorado for job stability.

“The domestic workers... they've had a harder time finding housing here and finding employers who will take them because there are a lot of them being turned away for H-2A jobs.”

- Key Informant



MESOAMERICAN INDIGENOUS WORKERS

While there is no official definition for who are considered Indigenous populations, it is recognized that Indigenous populations continue to practice social and cultural traditions that pre-date colonial societies.(8) Latin America's Indigenous populations are diverse in their culture, language, food, and religious & spiritual practices. Historically and currently, Indigenous populations have experienced higher levels of discrimination and violence, facing attacks on their cultural practices including language, lifestyle and food. (9) This is evident by the ongoing violence experienced by these populations since the beginning of colonization and the continued marginalization of Indigenous peoples in social and governmental systems.(10,11) Starting in the 1960s, the first documented en masse migration of Mesoamerican Indigenous populations to the U.S. happened through the Bracero program. Currently the number of Mesoamerican Indigenous populations in the U.S. keeps growing due to social and economic push-pull factors and due to displacement from violence and environmental reasons, such as climate change.(10,12)

The racial and ethnicity categories traditionally used for U.S. census purposes may not fully encapsulate Indigenous identity of Mesoamerican Indigenous individuals or be recognized by this population. Due to the discrimination experienced, they may not want to be identified as being racially Indigenous. In this survey following the National Agricultural Workers Survey (NAWS) convention, NCFH created a composite metric to identify Indigenous respondents, utilizing a combination of responses from language spoken as a child and currently as an adult, or racially identifying as Indigenous.(13)

In this sample, 87 respondents were identified under the Indigenous metric, comprising 35% of all respondents. This is about five times higher than that of the national percentage (6%) of farmworkers that identify as Indigenous based on the NAWS.(13) There were five Indigenous languages captured in this sample: Zapotec, Nahuatl, K'iche', Aguateco, and Q'anjob'al. The most common Indigenous language spoken by respondents was Nahuatl. Nahuatl has more than 30 variants that vary by state and geographic region and is the most widely spoken Indigenous language in Mexico. (14) Data collectors observed that the Orizaba variant of Nahuatl was commonly spoken among the surveyed farmworkers. The Mexican states with the largest Nahuatl speaking populations are Durango, Guerrero, Hidalgo, Jalisco, Mexico, Morelos, Oaxaca, Puebla, Tabasco, and Veracruz.(14)



Table 4.1: Demographics

Characteristic ¹	Frequency (Percentage) N = 249
Sex	
Female	48 (19%)
Male	198 (80%)
Age Group	
18-25	54 (22%)
26-54	161 (65%)
55+	20 (8%)
No Answer	9 (4%)
Marital Status	
Married	100 (40%)
Civil Union	48 (19%)
Single	80 (32%)
Other ²	19 (8%)
Country of birth	
Mexico	172 (69%)
United States	7 (3%)
Guatemala	18 (7%)
Nicaragua	16 (6%)
Honduras	8 (3%)
Venezuela	6 (2%)
El Salvador	4 (2%)
Peru	4 (2%)
Ukraine	4 (2%)
Other	10 (4%)
Race³	
Black/African American	4 (2%)
Indigenous	13 (5%)
White	46 (18%)
Other	155 (62%)
<i>Hispanic/Latinx</i>	102 (66%)
<i>Mestizo</i>	24 (16%)
<i>Moreno/a</i>	29 (19%)
Did not report	34 (14%)
Ethnicity	
Hispanic/Latinx	226 (91%)
Not Hispanic/Latinx	18 (7%)
Racially or Linguistically Indigenous⁴	
Yes	87 (35%)
No	162 (65%)
Immigration Status	
H-2A work visa	69 (28%)
Permanent resident	17 (7%)
U.S. Citizen	6 (2%)
Other visa	7 (3%)
Undocumented	122 (49%)
Did not report	28 (11%)
Migrated to work in agriculture in the last 12 months⁵	
Yes	90 (36%)
No	159 (64%)

1. If Unknown is <5%, responses are not included in the table. Percentages are rounded and may not sum to exactly 100%.

2. The Other category includes divorced, widowed, and separated

3. Respondents who selected more than one race were included in the "Other/multiple races" category

4. Following the National Agricultural Workers Survey (NAWS) convention, NCFH created a composite metric to identify Indigenous respondents, utilizing a combination of responses from language spoken as a child and currently as an adult, or racially identifying as Indigenous. (13)

5. Migration was defined as working in agriculture in a place different than the interview location for one week or more in the past 12 months. All H-2A guest workers were automatically classified as migratory.

HOUSING, HOUSEHOLD CHARACTERISTICS, AND TRANSPORTATION

Housing and transportation are social determinants of health that influence the risk of COVID-19 among farmworkers.⁽¹⁵⁾ Shared transportation with individuals from different households and overcrowded living conditions are both factors that increase infectious disease transmission, such as COVID-19.

The majority of respondents lived in mobile or manufactured homes (31%), apartments (29%), or houses (37%), (see Table 4.2). Workers living in employer provided housing frequently experience overcrowding and share housing with non-family members. ⁽¹⁸⁾ Forty-three percent of respondents lived in overcrowded housing and 45% lived in employer provided housing. The average household size was five people. Nearly half of respondents experienced increased risk of COVID-19 transmission from their housing circumstances.

The most common method of transportation was to drive a car to work, either their own or borrowed (43%), followed by riding with a 'raitero' (25%). Very few

respondents took a labor bus (8%). Nearly half (45%) of respondents commute with farmworkers from a different household to work, indicating that nearly half of farmworkers in this sample experienced increased risk of COVID-19 transmission from their transportation to work.

Lacking access to transportation creates isolation as well as a financial burden on farmworkers. One key informant explains, "They don't have anybody to help them register a car at the DMV [Department of Motor Vehicles] so they don't get cars, they can't mobilize, and the majority of the community are staying in their houses at the dairy farms. So, what happens? The people don't leave, they don't leave and that has a big impact on their wallet as well because they are being charged. There are people who charge 40 dollars to each person for a ride from the dairy farm to Walmart and they don't charge per trip, they charge per person and that is whether to Walmart or to cash their checks, and that has a big impact on their wallets."

Table 4.2: Housing Type, Transportation, and Risk Factors for Infectious Disease Transmission

Characteristic	Frequency (Percentage) N = 249
Housing Type'	
'Trailer'/mobile home/trailer house/RV/manufactured home	76 (31%)
Apartment	72 (29%)
Dormitories/barracks/shelters	8 (3%)
Hotels	1 (<1%)
House	92 (37%)
Transportation to Work	
Drives car	107 (43%)
Labor bus	20 (8%)
Ride in the car of a relative, coworker or friend	39 (16%)
Walk or bike	15 (6%)
Rides with 'raitero'	62 (25%)
Other	6 (2%)
Housing and transportation risk factors	
Lives in overcrowded household ²	107 (43%)
Lives in employer provided housing	113 (45%)
Travels to work with persons outside of household	111 (45%)

1. Does not include Other and No answer responses (<1% each)

2. The definition of an overcrowded household follows the U.S. Census definition⁽¹⁶⁾ which is a ratio of greater than one for the ratio of persons per room (excluding bathrooms and garages).

GENERAL HEALTH CARE ACCESS & SOURCES OF HEALTH INFORMATION

Less than one in four respondents needed medical care in the past year (see Table 4.3). However, of those that did need medical care, 93% received care when needed. Most sought out medical care from a Migrant Community Health Center (48%) or a clinic (32%).

Qualitative interviews identified many barriers to accessing health care. Barriers to care in the Colorado farmworker community include language barriers, lack of transportation access, and lack of access to technology for scheduling vaccination appointments. Employers and key informants stated a need for accessible health care for farmworkers. One key informant stated that H-2A workers often do not qualify for discounted primary care (such as sliding scale payments), but without those discounts it is difficult for them to access healthcare.

On the other hand, there were many facilitators to accessing care for Weld County farmworkers. Interview participants mentioned successful strategies implemented during the pandemic, including mobile health units delivering health services to rural farmworker communities, developing and strengthening relationships within the community, and work site health events hosted by employers. In addition, Community Health Workers (promotores) were largely successful in delivering health education, providing access to necessary services, and overall deepening relations with the farmworker community. One key informant explains, “the fact that they [promotores] were like out there and willing to drive people, like transportation, providing people transportation to get the vaccines. I think that was huge... [such as] the H-2A workers who didn't have their own transportation and couldn't rely on their employer to take them.”

Survey respondents were asked how much they trusted health information from various sources (see Table 4.3). Doctors and nurses were the most trusted messenger with over half of respondents reporting they “always” trusted health information from doctors and nurses. Community Health Workers (CHWs) were also trusted by respondents, with 38% reporting they always trusted health information from CHWs, and 41% stating they sometimes trusted health information from CHWs. Almost 40% of respondents reported that they did not trust health information from social media at all.

“If I could make more money, I could afford to provide health care for my workers. I can't afford that. Even if I took 100 percent of what I made towards it, it still wouldn't be enough to afford health care for my workers. I wish I could.”
-Employer



Table 4.3: Health Care Utilization and Trusted Sources of Health Information

Characteristic	Frequency (Percentage) N = 249
Needed medical care in past 12 months	58 (23%)
Received medical care when needed	54 (93%)
Most common sources of health care services among those who utilized health care in the U.S. (n=50)¹	
Clinic	16 (32%)
Hospital	6 (12%)
Migrant Community Health Center	24 (48%)
Sources of trusted information for health issues²	
Doctor/nurse	130 (52%)
Relatives/friends	61 (24%)
Community Health Worker	94 (38%)
Employer	109 (44%)
Social Media	22 (9%)
TV news	49 (20%)
U.S. Government	82 (33%)

1. Respondents could choose more than one answer. Only most common responses reflected in the table. Other responses included private clinic, emergency room, and Mexico

2. Respondents could choose more than one answer. Frequency and percentages reflect responses for “Always” trust health information from selected source.

COVID-19 SAFETY TRAINING AND INSTRUCTION

Respondents were asked if they had received instructions or training at work about washing their hands, how and when to cover their face, social distancing, and isolation procedures (see Table 4.4). Approximately one in three respondents (35%) had not received a comprehensive training that covered all four COVID-19 safety topics, and 39% had not received a comprehensive training in their preferred language. A large proportion of respondents (89%) reported receiving training or instruction in at least one of the topics.

Respondents were also asked about COVID-19 prevention measures taken at work (see Table 4.4). Hand washing stations (90%) were a very common workplace safety precaution, as were employer provided face masks (60%). Approximately one-third of respondents (38%) reported having regular temperature and symptom checks before work.

Qualitative interviews demonstrated that COVID-19 precautions varied widely by farm and industry. According to interview participants, employers in the dairy industry implemented precautions such as social distancing and masking in the parlors where close contact was possible. Other employers changed the work shifts so that dairy workers could work alone to avoid the need to take such preventative measures. Dairy employers for the most part cited little issue with following COVID-19 preventive and safety measures. Farmworkers working in crops discussed having all PPE provided by their employer and were told to walk to work to avoid ridesharing.



“It really just depended on the employer. There are some that just did everything [prevention practices] a lot. I think the majority did just the same practices as normal, didn't make any modifications at all because they were like outside or... partially outside.”

-Key Informant

“Conocido de otros lugares de que usted tenía Covid, le pagaban todo el tiempo cuando estaba enfermo que usted presentara una carta que decía que ya estaba bien. Pero cuando esa carta firmada tenía que esperar por ejemplo una semana y hacerse la prueba del Covid y volver a regresar a trabajar. Eso lo veía en otras compañías o por ejemplo en [redactado]. Lo vi mucho eso este, pero en otros lugares. Estás enfermo? Tenías Covid, una semana de descansar. No te pagaban si tú no ibas a trabajar, si ya estabas un poquito mejor, regresa al trabajo.”

“I knew of other places where if you had COVID, they paid for all the time you were sick when you presented a card that said when you were well. But when you signed that card you needed to wait for example a week and take a COVID test and return to work. I saw that at other companies for example at [redacted]. I saw this often, but at other places. Are you sick? If you have COVID, a week of rest. They don't pay you if you didn't go to work, if you were a little better, get back to work.” -Farmworker

Table 4.4: COVID-19 Safety Training and Instruction

Characteristic	Frequency (Percentage) N = 249
Workplace COVID-19 safety training received	
Received training in at least one topic ¹	222 (89%)
Received training in all four topics	163 (65%)
Received all four trainings in preferred language	152 (61%)
COVID-19 Prevention measures given at work²	
Check temperature and ask about COVID-19 symptoms	95 (38%)
Employer provides face masks	150 (60%)
Employer provides hand washing station	224 (90%)

1. Topics included 1) hand washing, 2) physical distancing, 3) use of face coverings, and 4) quarantine or isolation procedures.

2. Respondents were able to choose more than one response.

COVID-19 TESTING AND ILLNESS

More than one in three (37%) respondents reported that they had contracted COVID-19 at some point in the pandemic (see Table 4.5). Overall, over half of respondents reported taking a COVID-19 test at least once, of which 41% received a positive test. Of those that received a test, the large majority (87%) reported no difficulties or concerns with COVID-19 testing.

Respondents were asked what actions they took once they knew or thought they had contracted COVID-19 (see Table 4.5). Of those that knew or thought they had contracted COVID-19 and/or received a positive COVID-19 test (n=96), 75% reported isolating from family members or roommates, 86% reported wearing a mask or face covering, and 93% did not participate in social gatherings. Approximately half of respondents (47%) sought medical care. Nearly one in five workers who had COVID-19 or thought they had COVID-19 continued working.

Table 4.5: COVID-19 Illness and Testing

Characteristic	Frequency (Percentage) N = 249
Self-reported COVID-19 illness	91 (37%)
Taken a COVID test at least once	145 (58%)
Received a positive result	59 (41%)
Actions taken among farmworkers who knew or believed they had contracted COVID-19 (n=96)¹	
Isolated from family or roommates	72 (75%)
Wore a mask or face covering	83 (86%)
Participated in social gatherings	7 (7%)
Sought medical care	45 (47%)
Continued working	16 (17%)

1. Respondents could choose more than one answer. Respondents include those that thought they had contracted COVID-19 and those that received a positive COVID-19 test.

"Que sería como unos 15 días. Me levantaba cuando trataba de respirar, sentía como que me por dentro me quería estallar los pechos. Se sentía feo. Pero no, pues es el trabajo tiene que seguir adelante porque ta difícil aqui en este país, si no trabajas no vives, no comen, no rentas."

"It was something like 15 days. I would get up when trying to breathe, I felt like my chest wanted to explode. I didn't feel well, but that's not the job. You need to keep going because it's very difficult in this country if you don't work, you don't live, you don't eat, you don't pay rent." -Farmworker

COVID-19 VACCINATIONS

While the majority of respondents in this sample were fully vaccinated against COVID-19 with an FDA- or WHO-approved vaccine (66%), less than one-third of all respondents reported receiving a booster (30%), (see Table 4.6).

Nearly one in five respondents (22%) were not vaccinated, and a small proportion were partially vaccinated, having received only one-dose of a two-dose vaccine (4%). Among those unvaccinated, 28% wanted to receive the vaccine and 28% were still undecided about the vaccine. Eight percent of all respondents and 37% of those unvaccinated did not want to receive the vaccine. Fear of side effects (n=12), fear of vaccines in general (n=6), and not having enough time (n=5) were the most common reasons unvaccinated respondents were hesitant or unwilling to get the vaccine. Key informants often cited the barriers to COVID-19 vaccines for farmworkers such as transportation access, farmworkers' worry about the necessity of returning to work immediately, and the misinformation and distrust of the vaccine.

Key informants and employers also discussed a lack of vaccine promotion by the county health agencies in counties that had high populations of farmworkers, a lack of protections for farmworkers who needed to take sick time, reliance on employers to host vaccine events or permit time off, and a lack of overall enforcement regarding COVID-19 guidelines. Vaccination events or appointments also routinely asked for identification and insurance according to key informants which created another barrier for farmworkers that did not have those documents. One key informant explains, "Having to go online or having to have a phone or have an email was absolutely a barrier for farmworkers to be able to participate [in scheduling vaccination appointments]."

Farmworkers were split when discussing vaccinations in their interviews. Some interview participants were vaccinated and noted little issue with the vaccine, aside from some mild side effects.

Fear was a common reason among farmworker interview participants to not receive the vaccine. Fears discussed included fear due to previous allergies, fear due to misinformation (specifically that the vaccine was being used to euthanize the immigrant population), and fear of side effects. One farmworker explained the change in their opinion on the vaccine, "Time has passed, and I have seen that people that were vaccinated are here and are fine and we have been living and working together, and they are fine. So that's what changed my mind that the vaccine was good."

Among those vaccinated, the most common place survey respondents reported receiving a vaccine was at a U.S. Migrant Clinic or Community Health Center (33%), follow by at work in the U.S. (27%) and in another country (19%), (see Table 4.6). In interviews, employers explained how vaccines were available to their employees in a myriad of ways, including through mobile clinics, vaccine events, local clinics, and pharmacies.

There has been a wide range of sentiment about booster shots from the qualitative interviews. Two employers interviewed stated that it felt unnecessary for their workers if they were already fully vaccinated. However, when interviewing farmworkers, one had not heard of a booster shot at all. Other farmworkers had not received a booster due to the fear of possible sickness from mixing different vaccines (such as Pfizer or Moderna).

"Yo lo que tuve miedo ya recuerda por qué la tercera le tuve miedo era porque bueno, por ejemplo yo cuando me puse las vacunas, las vacunas que yo me puse son las modernas y oí muchos comentarios, incluso vi en Facebook, en YouTube o en todas las redes sociales de que decían por ejemplo en la Pfizer como que te hacía enfermarte más y pues por eso no me paso en la tercera, porque he oído de que de por sí, si una persona se puso ya dos por ejemplo o moderna, se tiene que poner la tercera una Pfizer y yo tuve miedo de eso también"

"I was scared of the third dose. It was because well, for example when I got the vaccines, the vaccines I got were Moderna and I heard a lot of commentary, I even saw on Facebook, YouTube, or on all social media, they said for example the Pfizer made you more sick, and well for that reason I didn't get the third, because I have even heard that, if a person got two for example or Moderna, you have to get Pfizer for the third one and I was scared of that as well." - Farmworker

Table 4.6: COVID-19 Vaccinations

Characteristic¹	Frequency (Percentage) N = 249
COVID-19 vaccinations	
Fully Vaccinated ²	165 (66%)
Partially Vaccinated	9 (4%)
Not vaccinated	54 (22%)
<i>Does not want vaccine</i>	20 (37%)
<i>Undecided about vaccine</i>	15 (28%)
<i>Wants to receive vaccine</i>	15 (28%)
Unknown Vaccination Status ³	21 (8%)
COVID-19 booster status	
Fully vaccinated and received at least one booster dose	75 (30%)
Location of First Dose (n = 195)	
Other Country	38 (19%)
U.S. At work	53 (27%)
U.S. Community Event	15 (8%)
U.S. Hospital	1 (1%)
U.S. Migrant Clinic / Community Health Center	66 (33%)
U.S. Other	6 (3%)
U.S. Pharmacy	14 (7%)
Most common reasons for vaccine hesitancy among unvaccinated farmworkers (n=54)⁴	
Afraid of side effects	13 (24%)
I don't believe it works	8 (15%)
Fear of getting vaccines	6 (11%)
I don't have time	6 (11%)
No answer	10 (18%)
Other ⁵	12 (22%)

1. If Unknown is <5%, responses are not included in the table.

2. Fully vaccinated includes respondents who received one dose of the Janssen/Johnson and Johnson vaccine or two doses of any COVID-19 vaccine approved by the U.S. Food and Drug Administration or the World Health Organization.

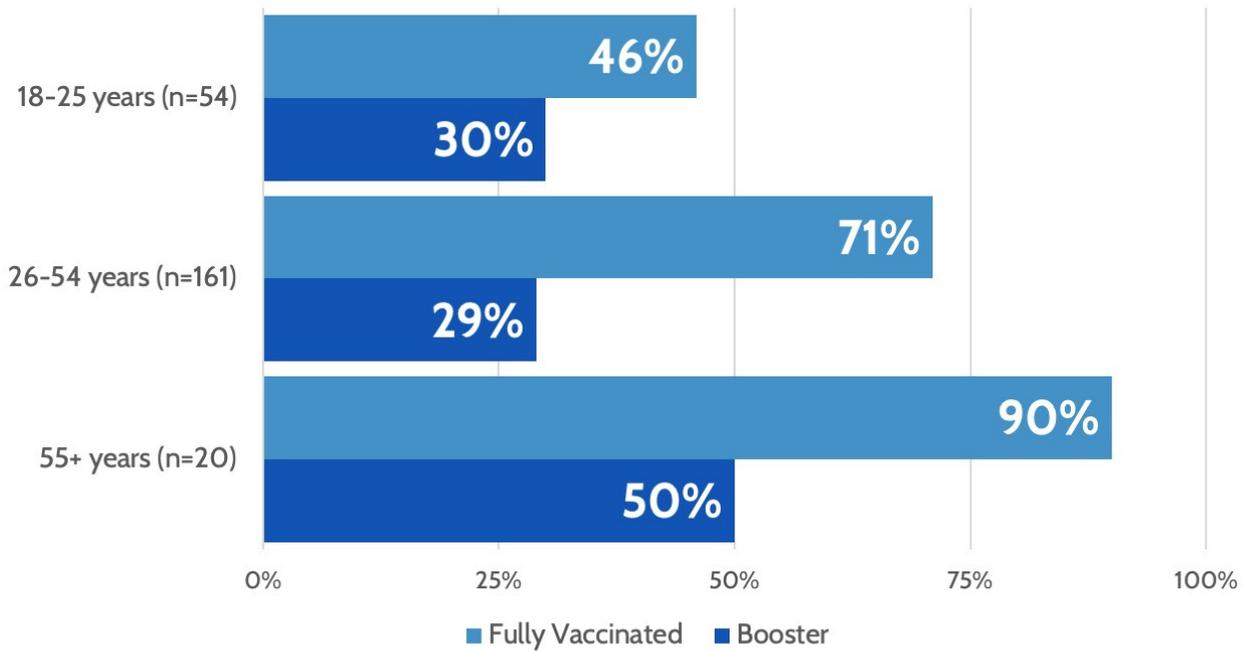
3. Respondents that had received at least one dose of COVID-19 vaccine but did not know which vaccine they received were classified as an unknown vaccination status.

4. Respondents could choose more than one answer. Includes most common responses from respondents who reported they were unvaccinated and replied no, perhaps, don't know, or no answer to wanting to receive the vaccine.

5. Other responses included: distrusts government, believes vaccines are dangerous, afraid of getting infected at vaccine site, religion, and waiting to see if they are safe

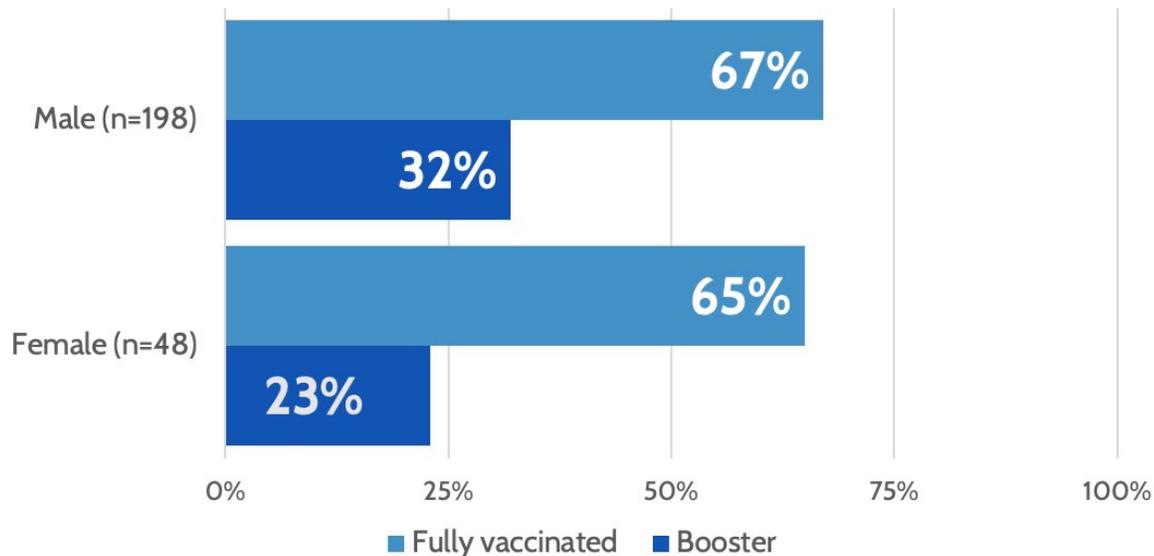
Vaccination status varied by key demographic characteristics. Nine out of ten surveyed workers 55 years and older were fully vaccinated (90%), while only about half of younger workers (18-25 years) were fully vaccinated (46%). Workers aged 26-54 years fell in the middle, with close to three out of four workers being fully vaccinated (71%). This same trend was mirrored in booster vaccinations - half of older workers had received the booster vaccination, and the other two age groups had about 30% of workers who had received the booster.

Figure 4.1: Percentage of Respondents Fully Vaccinated and Boosted by Age



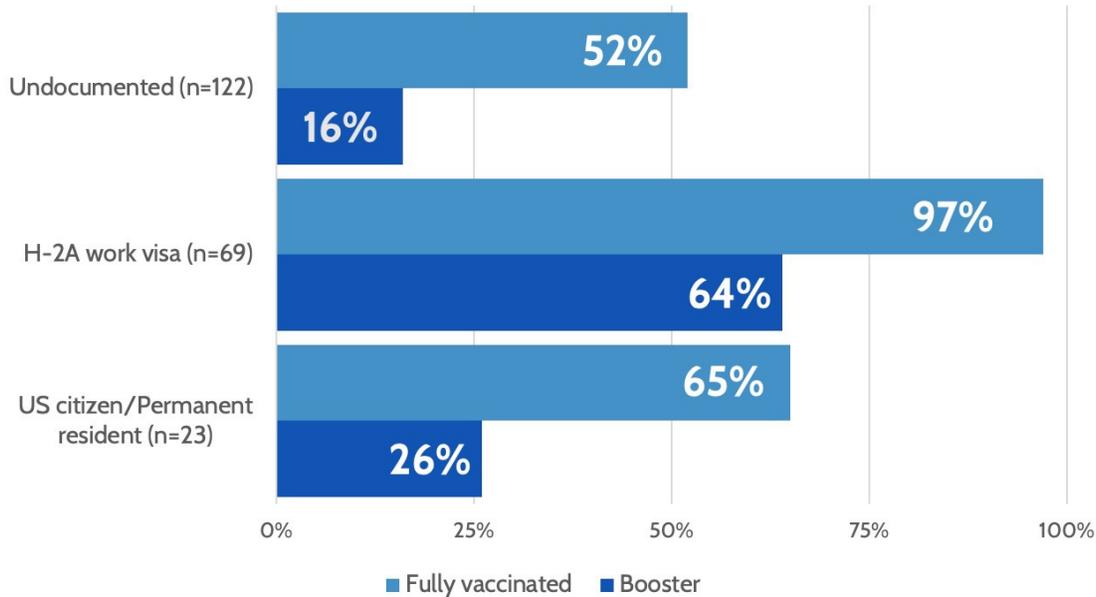
Vaccination status was similar between male and female respondents, with men having a slightly higher proportion of fully vaccinated and boosted respondents. Sixty-seven percent of male respondents were fully vaccinated, and female respondents were slightly lower at 65% of respondents fully vaccinated. Both sexes had smaller proportions who had received the booster vaccine: 32% of males and 23% of females had received a booster vaccination.

Figure 4.2. Percentage of Respondents Fully Vaccinated and Boosted by Sex



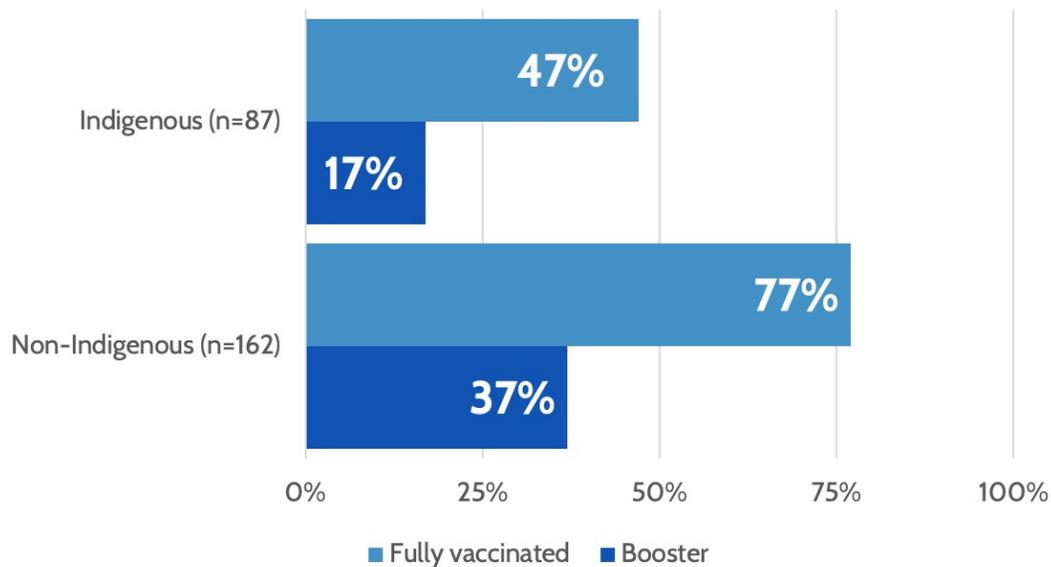
Vaccination disparities also existed when considering immigration status of respondents. Nearly all H-2A guest workers were fully vaccinated (97%), while U.S. citizen/permanent residents and undocumented farmworkers had lower proportions at 65% and 52%, respectively. All groups had lower proportions of booster vaccinations with a similar trend of H-2A guest workers with the highest proportion (64%), and undocumented farmworkers with the lowest (16%).

Figure 4.3: Percentage of Respondents Fully Vaccinated and Boosted by Immigration Status



Additionally, disparities were observed for Indigenous farmworkers. A smaller percentage of respondents who were racially or linguistically Indigenous were fully vaccinated (47%) than those that were not Indigenous (77%). Booster uptake proportions were also lower for Indigenous respondents (17%) than non-Indigenous respondents (37%).

Figure 4.4: Percentage of Non-Indigenous vs Indigenous Respondents who are Fully Vaccinated and Boosted*



*Following the National Agricultural Workers Survey (NAWS) convention, NCFH created a composite metric to identify Indigenous respondents, utilizing a combination of responses from language spoken as a child and currently as an adult, or racially identifying as Indigenous. (13)

IMPACT OF COVID-19

Qualitative interviews identified that dairy farmers were in constant need of employees during the pandemic. Due to the nature of dairy farming, where cows must be milked several times a day or they lose milk production, employers had significant issues when staff were sick or left for long periods of time. Many dairy workers worked long hours to keep the production on course. Some employers noted significant issues finding workers, whereas others stated their current employees were happy with the extra work and pay. Survey results reveal that approximately one in three respondents reported losing working hours or income during the pandemic, and 14% of respondents lost their job (see Table 4.7).

“Había poco, poco trabajo, pocas horas y también como que la verdura no, no crecía y entonces era como muy difícil recoger la verdura grande que nos pedían.”

“There was little, little work, few hours, and also the vegetables didn’t grow and so it was really difficult to pick big vegetables that they asked of us.” - Farmworker

Interviewees discussed that while paid sick leave was available for some farmworkers, it was not available for all (see Table 4.7). Nearly one in four respondents (23%) also reported difficulty paying rent or mortgage and nearly one in three respondents (30%) reported difficulty paying for basic needs, like food or utility bills. Despite experiencing economic challenges, respondents did not benefit greatly from government assistance. No respondents received rental assistance, less than 1% received food benefits, and 24% received an economic stimulus payment.

COVID-19 also impacted mental health among farmworkers, with 36% of respondents reporting an increase in stress during the pandemic. Throughout interviews with farmworkers, key informants, and employers from Weld County, all stated a rise in anxiety and depression among farmworkers during the pandemic. One key informant stated that the common experience that young male H-2A workers face causes mental anguish, as workers are in the U.S. separated from family and living at their worksite. Farmworkers expressed a rise in anxiety concerning getting sick from COVID-19 and how it would affect their lives and work. They also expressed frustration due to the necessity of leaving their home for supplies, which incurred the anxiety of possible infection. One farmworker explained, *“I was worried going out and knowing if you could get infected or not return, if you were going to go out fine and come back infected now. I mean, it was worrisome, more than anything, not knowing if to go out or not go out, but we needed to leave to eat, to buy, but it was difficult.”*



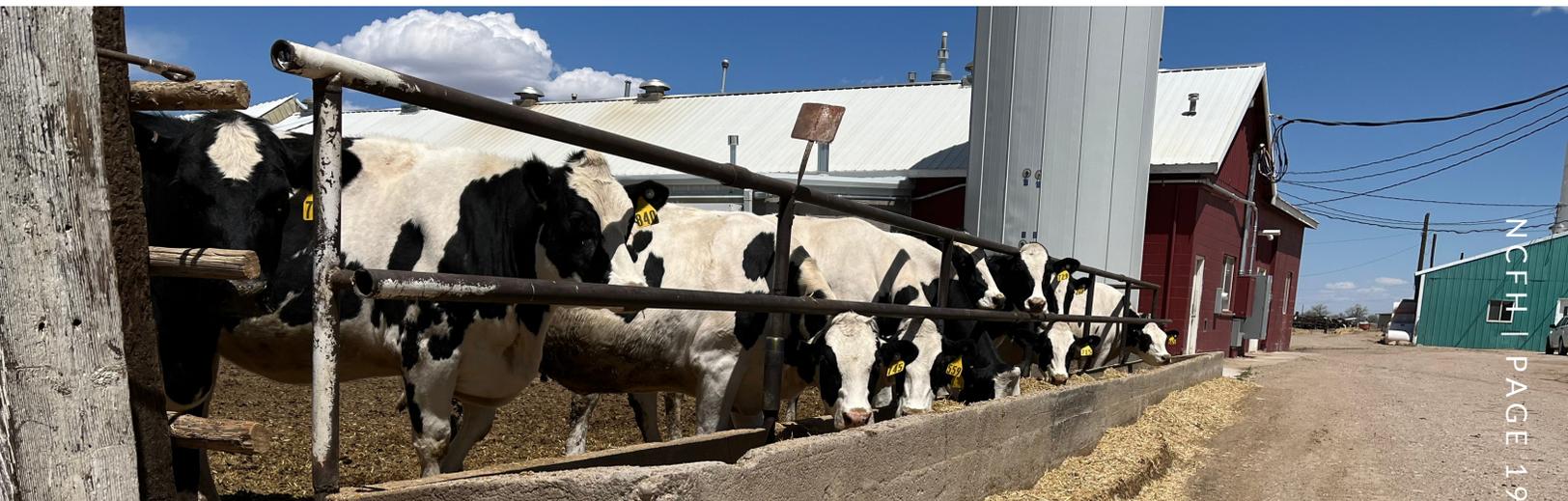
"Eran trabajadores agrícolas, no podían parar y lo que yo he hablado con ellos fue si la pandemia les paró el trabajo y dicen la mayoría dicen no, nosotros es cuando más trabajo tuvimos. Y muchos de ellos tuvieron que trabajar extra mucho, muchas horas, porque pues si se enfermaban unos, pero no podían parar la producción de leche."

"These were farmworkers, they couldn't stop and what I have talked about with them was if the pandemic stopped their work and the majority said no, this is when we've had the most work. And a lot of them had to work extra, a lot of hours, because some did get sick, but they couldn't stop the production of milk." - Key Informant

Table 4.7: Impact of COVID-19

Characteristic	Frequency (Percentage) N = 249
Experiences the following during the pandemic¹	
Increase stress	96 (36%)
Difficulty obtaining childcare	15 (6%)
Lost job	36 (14%)
Divorced or separated	6 (2%)
Difficult paying rent/mortgage	58 (23%)
Reduction of hours or income	86 (35%)
Difficulty paying basic needs	74 (30%)
Treated unfairly due to country of birth or race or ethnicity	26 (10%)
None of the above	90 (36%)
Received U.S. government assistance	61 (24%)
Economic stimulus check	60 (24%)
Food assistance	1 (<1%)
Rental assistance	0 (0%)

1. Respondents could choose more than one answer.



6. CONCLUSION

LIMITATIONS

This assessment had limitations. Survey respondents were not randomly sampled. Survey respondents should not necessarily be viewed as a representative sample of all farmworkers in the county, but rather as a diverse non-random sample that captures information from the very different populations of farmworkers in Weld County. All survey data are self-reported. The data in this assessment is cross-sectional and only represents a brief snapshot in time. While data collection occurred during the peak season of agriculture work in Weld County, not every agricultural crop has the same timeline, and workers in those sectors may have been missed. The survey is only available in English and Spanish, this may have caused barriers in adequately capturing the responses from Mesoamerican Indigenous language speakers.

DISCUSSION

The results of this assessment in Weld County, Colorado suggest that the working and living conditions of farmworkers created additional risks for COVID-19 transmission and barriers to care during the pandemic, such as crowded housing conditions and shared transportation. Although generally accessing medical care among those that need it does not seem to be a prominent issue in this community (93% received medical care when needed). At the time of data collection, approximately 73% of Weld County residents over 18 years old had completed their vaccine series,⁽¹⁷⁾ which was higher compared to this sample, with 66% of respondents being fully vaccinated.

However, many disparities remain in COVID-19 vaccination. Indigenous workers, undocumented workers, and age groups under 55 years old (and especially under 26 years old) represent key groups that should be supported for vaccination efforts. Qualitative interviews identified many barriers to accessing health care, such as language barriers, transportation access, and access to technology for scheduling vaccination appointments.

Further, while the majority of respondents in this sample were fully vaccinated against COVID-19 with an FDA- or WHO-approved vaccine, less than a third of all respondents reported being fully vaccinated and receiving a booster. This trend was apparent across demographic groups.

An area for improvement includes addressing language barriers experienced by farmworkers. In this sample, 39% were not provided with a comprehensive COVID-19 training at their workplace in their preferred language. Approximately four out of five respondents reported difficulties speaking English, with 36% of respondents reported speaking English “a little” and 48% reported not at all. Key informants describe the Indigenous farmworker community make-up as mostly Guatemalan workers, and this survey identified a substantial population of Mexican Nahua workers who spoke Nahuatl in this area. Almost all that identify as Indigenous speak a Mesoamerican language, some speaking Spanish as a second language. Investing in more resources to develop culturally and linguistically appropriate education and outreach materials may improve health outcomes and access to care for farmworkers.

Another area for improvement includes promoting and facilitating booster vaccinations for farmworkers, particularly on work sites and through collaborations between community partners, public health entities, health centers, and employers. One Weld County employer said if another clinic or health provider were to reach out and schedule a booster clinic on their farm, like they did for the primary series of COVID-19 vaccinations, they would be willing to facilitate it and “give our guys the option to go ahead and do it, have that option open for them.” Utilizing doctors or nurses to provide information to farmworkers appears to be a trusted source among this community, as do community health workers.

DISCUSSION CONTINUED

Social media does not appear to be a promising strategy to reach Weld County farmworkers, as almost 40% of respondents reported that they did not trust health information from social media at all.

Qualitative interviews suggest an increase in H-2A guest workers, a trend that is supported by publicly available data, with a 20% increase in H-2A workers in the past five years. Although H-2A guest workers still make up less than 7% of the general farm labor population in Weld County according to estimates, Colorado health advocates should monitor these changing demographics of farmworkers as working under the H-2A program brings new challenges in providing services to farmworkers and minimizing the risk of infectious disease, such as crowded housing conditions, isolated rural work and housing sites, lack of transportation, and lack of health care access.

Another potential emerging issue to be addressed is mental health among farmworkers. Throughout interviews with farmworkers, key informants, and employers from Weld County, all stated a rise in anxiety and depression in farmworkers during the pandemic. One key informant stated that the common experience that young male H-2A workers face causes mental anguish, as workers are in the U.S. separated from family and living at their worksite. Farmworkers expressed a rise in anxiety concerning getting sick from COVID and how it would affect their lives and work. They also expressed frustration due to the necessity of leaving their home for supplies which incurred the anxiety of possible infection.

Employers, key informants, and farmworkers all stated certain desires for the future of agricultural work through qualitative interviews. Employers and key informants stated a need for accessible and affordable health care for farmworkers, and one key informant stated the need to specifically consider H-2A guest workers' circumstances. Undocumented farmworkers want better care taken of them at work, such as addressing occupational hazards and accepting workers compensation claims. Other key informants want better health education with more of a focus on prevention for farmworkers and their families.

The success of community efforts and community health workers in providing access to COVID-19 vaccinations in spite of barriers is evident through this sample, with 66% of respondents being fully vaccinated. However, Indigenous farmworkers, undocumented farmworkers, and age groups under 55 years old represent key groups that should be supported for vaccination efforts, along with support for booster vaccinations across all demographic groups. Additional support is needed to provide resources for health education and healthcare in farmworkers' preferred languages, and resources to sustain accessible healthcare at work sites.



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