MIGRANT CLINICIANS NETWORK
MCN
streamline
Volume 27, Issue 3
Fall 2021

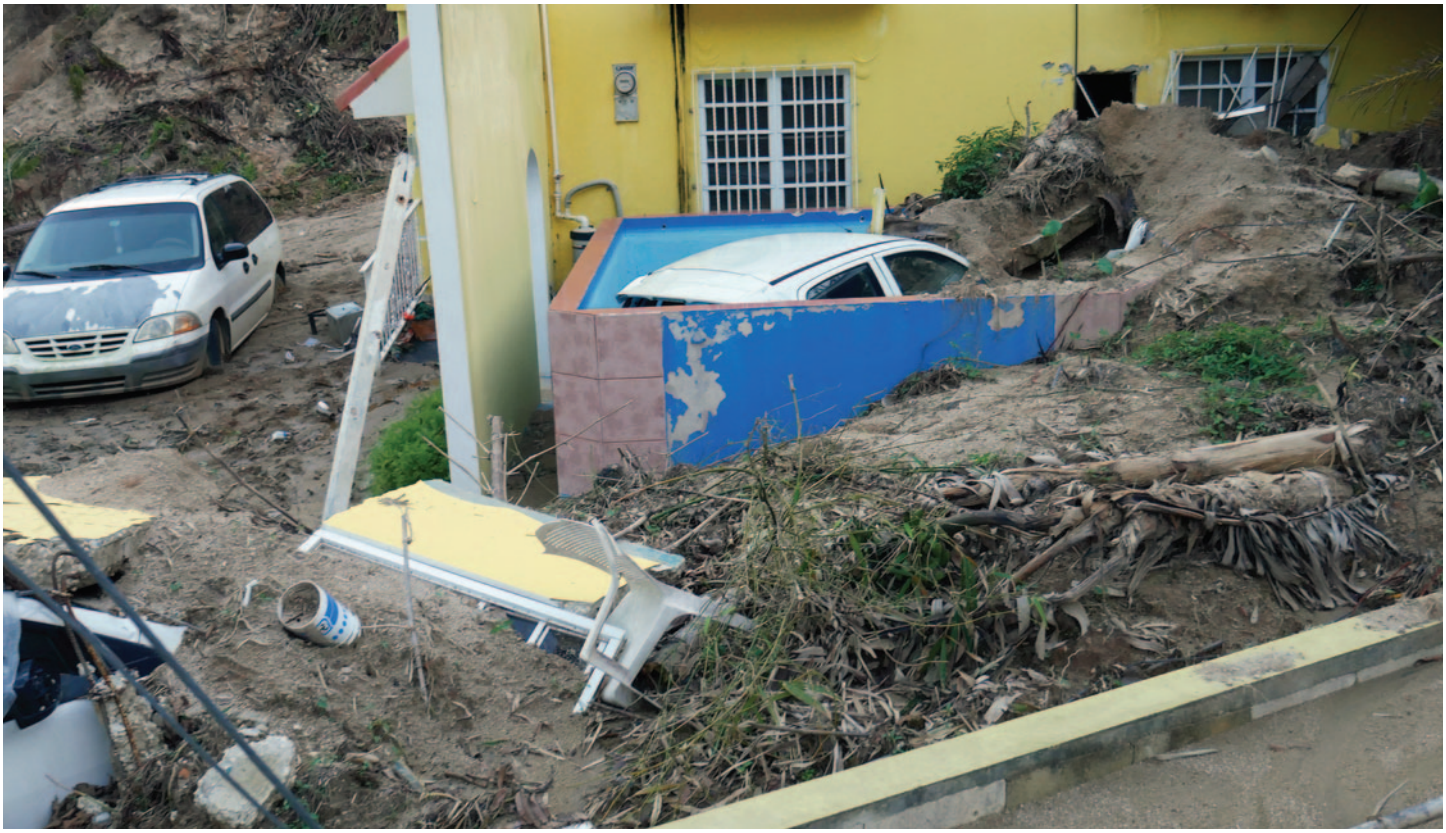

Photo courtesy of La Corporación de Servicios Médicos

How Climate Change Intensifies the Social and Environmental Determinants of Worker Health

By Claire Hutkins Seda, Senior Writer & Editor, Migrant Clinicians Network

A.3.2 The frequency and intensity of heavy precipitation events have increased since the 1950s over most land area for which observational data are sufficient for trend analysis (high confidence), and human-induced climate change is likely the main driver. **– 2021 IPCC Report[1]**

WATER

Ernesto Moreno Aguirre worked two jobs, as a construction worker and dishwasher, to make ends meet, in the borough of Queens in New York City. His family of four was living in an illegal basement unit, one of the few apartments that he could manage to rent without paperwork. When the remnants of Hurricane Ida hit New York City, Moreno Aguirre's home – and all his family's possessions, all he had brought from his home country of Colombia, and all they had in the US — was under several feet of water in minutes.[2]

The record-breaking deluge from Hurricane Ida found the weak points in an aging stormwater infrastructure that resulted in deaths in flooded basement apartments. Such high volumes of rain are becoming more common as the climate crisis intensifies. There have been more intense hurricanes in recent years. Hurricanes gather more water from climate-change-warmed oceans and seas, then move more slowly than in the past as they release torrents of this warmer water.[3,4,5] The combination of slower storm movement and greater water capacity in these storms results in more damage.

Most of the basement apartments that were affected were unpermitted. Families like Moreno Aguirre's — immigrants, people lacking documentation or financial stability to rent better apartments, newly arrived migrants with few resources to find better

continued on page 8

How to De-Escalate a Tense Interaction

A Necessary Skill and Unfortunate Sign of the Current Reality for Health Care Workers

By Kaethe Weingarten, PhD, Director of Witness to Witness, Migrant Clinicians Network

Recently, at a shopping mall in an urban city, three community outreach workers were standing near a table that had a colorful tri-fold with helpful, local information about how to get a vaccine for COVID-19. They had had several pleasant exchanges when a man in his thirties approached the table looking tense and agitated. The man was clearly upset and he used his right hand to point at the three people at the table, while using his left hand to swipe several of the information sheets off the table. The workers, all women, froze momentarily and then calmly asked him to step aside. In this instance, he did. After he was a far distance away, out of earshot, the three women looked at each other and, trembling, they began to shake their heads and release a kind of strangled laughter, more tension release than humor.

Sadly, this is not an uncommon scenario. It is an unfortunate sign of our times that episodes like the one above occur routinely and provide the raison d'etre for the topic of this article: how to de-escalate an interaction that has become hostile and aggressive. In the course of service to the community, health care workers are increasingly encountering people who need help but rebuff or reject it. In some instances, the behavior that health care workers are facing is threatening, violating, and violent. This is clearly intolerable, indefensible, and infuriating.

This article presents ideas about how to de-escalate interactions that have become tense while taking a firm position that safety comes first. That is, empathy can wait if personal safety is at risk. At the same time, it is useful to have some understanding of what might be going on for someone who turns against a health care worker who is trying to help. The second part of the article is not meant to justify harassing behavior but only to put forward some ideas as to why it might be happening. It is an effort to place an individual's negative behavior in a wider cultural context of the particular socio-historical, polarized moment we are living through.

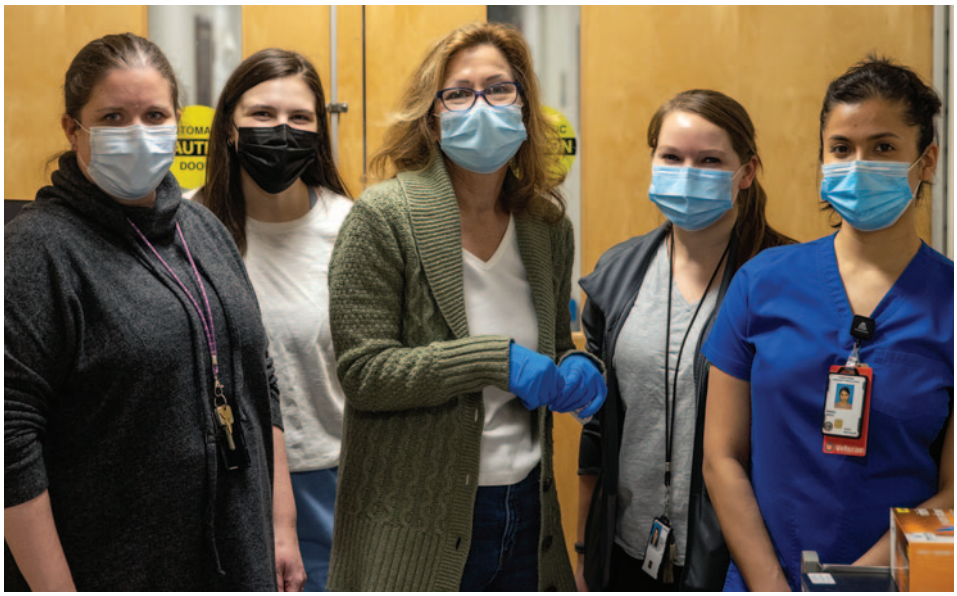

Photo courtesy of Milwaukee VA Medical Center

- **Watch for your body's warning signs:** Whether or not you are the person being harassed or you are a witness to it, the situation will likely be jarring for you. Most of us "send" consistent physical and emotional signals when we are upset, even if we remain calm. Physical cues might be that our neck flushes, a knot forms in our stomach, or our heart races. Emotionally, we may feel numb, agitated, or afraid. It is important to notice the signals our bodies send and recognize them as a warning that we are in an interaction that is uncomfortable or even unsafe.
- **Exit hostile situations:** Some negative interactions cannot be salvaged. It is important to distinguish between someone who is upset and "triggered" but still able to engage in a respectful conversation, and someone who has become hostile and aggressive. In a setting where there are many other staff, this is the time to move away and notify other team members. If you are out in the field, whether you are alone or with one other person, this is a situation to leave. This is exactly the kind of situation in which the expression, "Empathy can wait" needs to apply.
- **Look for worsening behavior:** If you are encountering someone who strongly disagrees with what you are saying but they are fairly calm and still respectful, look for signs as you proceed in your interaction that things are turning negative, that is, their behavior looks more, not less, dysregulated. Signs might be: the person's fists are clenched; they are talking very loudly or very quietly; they appear confused; or their speech is rapid. These are signs that you probably need to end the interaction.
- **De-escalating in a safe situation:** If you deem the interaction safe to continue, and believe it will result in a rational exchange, here are some tips that can help continue to de-escalate negative behavior:
  1. Maintain a safe distance, creating at least three feet of distance between you and the other person so that each of you has a demarcated personal space.
  2. Attend to what the person is trying to say about their experience. Do not make a negative judgmental statement.
  3. Keep your non-verbal communication —your tone of voice, gestures, facial expressions —as neutral as possible.
  4. If it feels safe, ignore verbal challenges and try to answer what seems to be of most concern to the person; "Ignore the challenge but not the person."[1]
  5. Allow pauses and even silence, for the person may need these to make sense of what you are saying.

These five tips are suggestions for techniques that may de-escalate negative interactions. Each person will develop their own strategies for what works best for them through a trial-and-error process. Above all, your mantra needs to be: *"I need to be safe."*

Given that we are placing safety first, it still is possible to take a moment to consider what might make or turn an interaction negative. Our time is one in which there is deep polarization in our country. Behaviors and opinions have become divided. Aspects of health care itself have lost their neutrality and become "signs" of beliefs. In this climate, if you hold a different perspective

about a health care measure from the person you are talking to, your perspective may "trigger" a dysregulated response.

All of us have emotional responses to some interactions. At best, we maintain our ability for our emotions to be integrated with our rational thought process, what is called "high-road processing." If someone is triggered by what we say and it elicits a threat response, that person may be having an emotional response that bypasses their rational thought process. They are using "low-road processing," an "evolutionary conserved direct emotional pathway designed to protect individuals from life-threatening danger, and is designed to elicit defensive responses without conscious thought."[2] It may be very difficult to calm the person down in time to "turn on" their "high-road processing." That is when it is best to leave.

After a difficult exchange three things are imperative:

- **Ground yourself:** Everyone should have one or two surefire ways to self-sooth that require no special tools or devices, that are simple and always at hand. It might be singing at the top of your lungs, a minute of deep breathing, or counting backwards by three.
- **De-brief:** Tell someone about what happened. If someone was there with you, discuss what went wrong, what it felt like to you, and what might improve a next encounter.
- **Take care of yourself:** Know how you are going to practice self-compassion and self-care. There are resources below that may be helpful to you.

RESOURCES:

What About YOU?: A Workbook for those who care for others: http://508.center4si.com/SelfCareforCareGivers.pdf

The Mindful Self-Compassion Workbook: A proven way to accept yourself, build inner strength, and thrive. Kristen Neff and Christopher K. Germer, Ny: NY: Guilford Press, 2018

Five Easy Pieces to De-Stress: https://www.migrant-clinician.org/blog/2020/nov/five-friday-reducing-anxiety-and-stress.html

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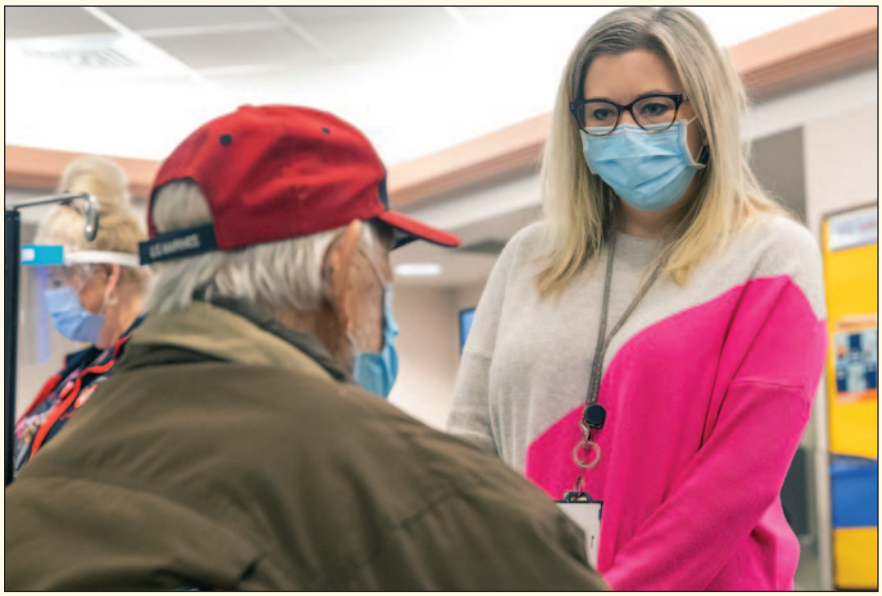

Photo courtesy of Milwaukee VA Medical Center

Real World De-Escalation

By Laszlo Madaras, MPH, MD, Chief Medical Officer, Migrant Clinicians Network

Tense situations do not only occur when a patient is angry or acting out. Sometimes, the clinician is upset. In this case, de-escalation needs to occur not just with a person the clinician is interacting with, but with the clinician as well. I work in an emergency room and COVID hospital ward, and every day I care for patients who could have been vaccinated against COVID-19, but chose not to. Some patients are very upset because they think we should be able to cure them. They are angry that the information we are providing about COVID-19 – that Ivermectin is not a proven cure, that the ICUs are full – does not match the misinformation that they had before they got sick. In their hospital room, as they lie dying of COVID, they ask for any help, any medicine or therapy that I can provide, to save their lives – when they had already forgone the vaccine, which is the best, safest, and proven method for keeping them out of the hospital and out of their current life-threatening condition.

In 2020, health care workers were hailed as heroes. But this year is different. These are challenging situations, and I have to admit that at times I am angry, too. Before a vaccine was available, it was easy to see all COVID-19 patients as innocent victims of a new virus that was killing patients worldwide. In 2021, with the possibility of a life-saving vaccine in much (but not all) parts of the world, I am angry that a patient, such as a life-long smoker with uncontrolled diabetes, did not get vaccinated, and now is in the ER with COVID-19. I am angry that they just assume we can "cure" them, when no cure exists, but an effective prevention tool – the vaccine – was purposely avoided. So, de-escalation in a time of COVID-19 has an extra dimension, because the health care provider is often overworked, traumatized, and, at times, angry.

When I find myself in a situation with a patient who is angry, I recognize that I need to take extra time, because my own situation, my own reactions to the patient, may not be viewed as level-headed. I take in the situation, check my own reactions, and try to back up, to start from a place of calm, as Dr. Weingarten says, so I can "high-road process" the information. After such situations, and in fact throughout this COVID pandemic, self-care is much needed. Time to decompress, to process what occurred, and to return to a healthy state in my body and mind is critical.

This publication is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling $1,505,225.00 with 0 percentage financed with non-governmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by HRSA, HHS or the U.S. Government. For more information, please visit HRSA.gov.

Language Matters:

Adapting Tools to Better Understand the Impact of Climate-Related Disasters on the Puerto Rican Agricultural Worker

By Marysel Pagán Santana, DrPH, MS, Puerto Rico Senior Programs Manager

The current climate crisis presents unprecedented economic, social, and health impacts. For over three decades, international organizations and agencies have published reports that project more extreme weather events such as droughts, hurricanes, rains, forest fires, and more frequent and intense heat waves throughout the world.[1] These projections have become more drastic with recent events such as Hurricanes Irma and María in 2017 and forest fires in the Amazon and regions of Africa. However, these events may affect populations in different ways depending on factors like income and education. Agricultural workers are subject to various environmental stressors during their workdays. This population not only experiences greater risks than workers in most other industries, but also has sociodemographic characteristics that place them in a vulnerable position regarding the effects that climate change may have on their workspace. These variables are added to other intrinsic psychosocial factors of the agricultural community such as labor and social conditions. In addition to the effects that extreme events can have on the physical health of the agricultural workers, the damages and social effects of disasters caused by the climate crisis can greatly deteriorate the mental health of this community. The assessment of the impact of climate change on the mental health of farmers and agricultural workers is especially important for those regions with a higher risk of intense natural disasters due to climate change.

Puerto Rico has faced extreme weather events yearly for the past nine years, including the loss of shoreline in most of its municipalities, droughts, and flooding, and, more recently, two major hurricanes (Irma and María in 2017). In addition to property loss, health deterioration, and deaths, María had a substantial impact on the agricultural sector, causing damage to 80% of the crops and up to $200 million in losses.[2] Effects of the climate crisis, such as flooding, drought, and storms, are expected to continue to affect Puerto Rico. Moreover, the compounded emergencies like the earthquakes that occurred in the southwest of the Island in early 2020 and the current COVID-19 pandemic may worsen the situation. Recent studies present the perception of agricultural workers in Puerto Rico regarding climate change, exploring the preparedness and adaptation methods of agricultural workers and farmers. Results illustrate that 72.8% of agricultural workers think that climate change will continue to affect Puerto Rico, 66.3% identify their farms as "vulnerable," 65.6% think that they are going to be negatively affected by climate change, and 58.8% report that climate change will continue to present a challenge to the agricultural sector in Puerto Rico.[3] Moreover, reports show that the Island has the third highest incidence of mental health conditions in the US.[4] Some reports identify that being subjected to trauma like evacuation, housing damage, or a relative's death and/or injuries may have worsened the mental health state on the Island.[5] In addition, vulnerable populations report facing additional stressors such as food and water limitations, and family migrating from the US territory.[6]

Photo courtesy of UNICEF

The effect of stressors caused by climate-related disasters on the agricultural worker population in Puerto Rico has not been explored. One of the primary challenges to effectively assess the current mental health and resilience of agricultural workers in Puerto Rico and its relation to climate change and disasters has been the lack of appropriate tools to conduct the assessment. Migrant Clinicians Network is conducting a pilot research project in collaboration with the Southeastern Coastal Center for Agricultural Health and Safety with the long-term goals of improving our understanding of agricultural workers' mental health in Puerto Rico and its relationship to disasters and climate change, and exploring culturally appropriate research methods for use in Puerto Rico. To start, tools that were presently available were evaluated. Nine surveys or questionnaires that covered the topics of climate, mental health, and agricultural health were identified. Each of the nine surveys covered two of these topics and no tool was found that integrated all three. Most needed to be translated into Spanish and all needed to be adapted into local Puerto Rican Spanish. Eight interviews with agricultural workers were conducted in a rural area in Puerto Rico, to understand the scope of issues regarding the mental health of agricultural workers in Puerto Rico, and to evaluate some of the language included in those available tools. Staff also sought to identify unanticipated responses to closed-

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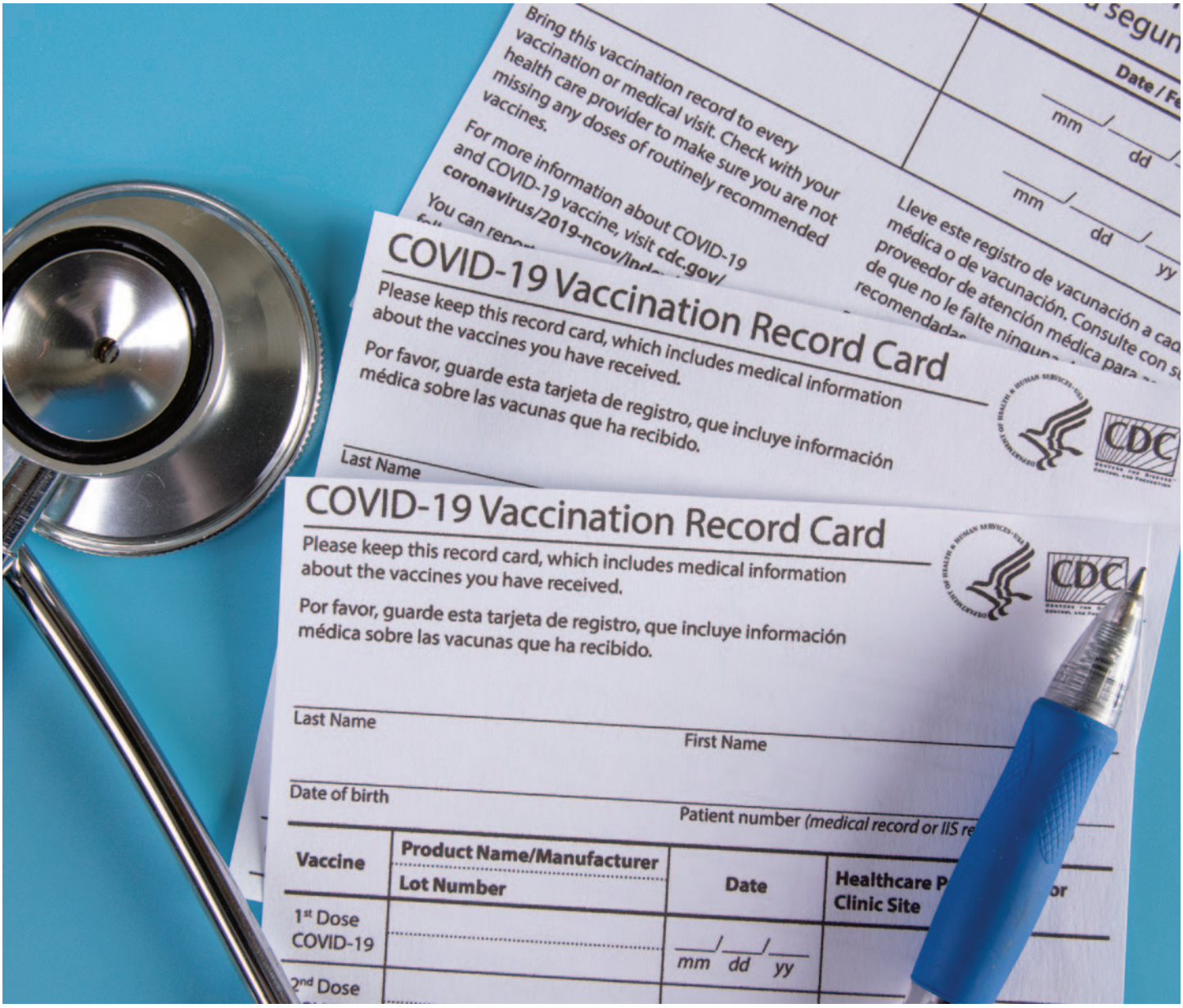

Photo courtesy of Jernej Furman

Keeping Up with COVID-19: Alias Names and Vaccine Mandates on MCN's FAQ

By Claire Hutkins Seda, Senior Writer and Editor, Migrant Clinicians Network

Every day, clinicians who serve migrants and immigrants are posing new questions related to COVID-19: Should a worker get a third dose of the vaccine? Can the COVID-19 vaccine and the flu shot be administered on the same day, considering the struggle a worker may have to get to the clinic? What do I say about Ivermectin when asked? Since early 2021, as the vaccines began to be rolled out, Migrant Clinicians Network has gathered these questions and published their answers in "FAQ: The COVID-19 Vaccine and Migrant, Immigrant, and Food & Farm Worker Patients," which is published on our active blog, *Clinician to Clinician*. The FAQ is available in English and Spanish and is regularly updated with new questions, which appear at the top of the FAQ.

In early September, the White House issued a federal rule to require businesses with more than 100 employees to require their workers to be vaccinated against COVID-19. This change is significant. Prior to the mandate, the vaccination card was a health record. With mandates in place, the vaccine card became a required document for employment. This affects many workers who are unauthorized to live and work in the US. Many work under an alias name, but use their given name when accessing health care. In mid-September, we updated our FAQ with the following three questions and answers, to help guide clinicians who serve workers who use an alias at their workplace. These questions are edited. See the complete FAQ on our website to read these and 30 additional questions, in English or Spanish: www.migrantclinician.org/blog.

What considerations should I make for migrant and immigrant workers getting the COVID-19 vaccine, now that there is a federal vaccine mandate as well as the potential for mandates in other workplaces?

Many migrants and immigrants work under alias names. It is critical that clinicians dis-

continued on page 11

Building a New Bilingual Agricultural Worker Hotline

By Hannah Lawrence,
Project Coordinator, Migrant Clinicians Network

On dairy farms in Vermont, blueberry fields in New Jersey, mushroom farms in Pennsylvania, apple orchards in West Virginia, and the variety of farms in between, migrant agricultural workers work long hours in difficult conditions to put food on America's tables. Often separated from their families, without documentation, in difficult working conditions, and lacking in many resources, agricultural workers face extreme levels of mental stress.[1]

While the stressors facing farm owners have been well documented, migrant agricultural workers are also exposed to additional stress due to the nature of their work, the occupational determinants of health therein, and the toll of migration.

While systematic reform is needed to address many of these challenges, immediate support for agricultural workers' mental health is critical. This urgent need was the motivation behind the partnership between Migrant Clinicians Network (MCN), Farm Aid, and the Farm and Ranch Stress Assistance Network Northeast (FRSAN-NE). The partnership is aimed at increasing mental health care access for migrant agricultural workers through the Farm Aid hotline. The hotline currently offers mental health referrals and crisis support to English-speaking farmers and agricultural workers across the country.[2] Through the partnership with MCN and FRSAN-NE, the hotline will soon expand this access to Spanish-speaking agricultural workers, and will continue to expand linguistic access moving forward. However, the priority of the project is not to simply recreate the English line in Spanish, but rather to integrate the specific needs of migrant agricultural workers into the framework of the expanded hotline.

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Migrant agricultural workers face varied and high-stakes barriers when attempting to access mental health services, including lack of transportation, lack of insurance, high out-of-pocket fees, limited access to linguistically and culturally competent care, unstable migration status, and cultural stigma. All of these factors combined often prevent agricultural workers from even considering mental health care. Further, data collected from agricultural workers showed strong preferences for linguistically and culturally appropriate providers and local community care.[3] The goal of the hotline expansion project is to account for these barriers by creating a list of referral agencies that are truly accessible to migrant agricultural workers and to provide hotline support from the same perspective.

Phase one of the hotline expansion that wrapped up in August entailed creating a landscape analysis of available services beginning in the Northeastern United States. By centering agricultural worker preferences and identified barriers, MCN created criteria for resource inclusion: 1) Agency must provide services in Spanish; 2) Agency must provide services to people regardless of immigration status; 3) Agency must provide services on an income-based sliding scale or provide reduced fees. MCN completed research on a county-by-county basis to ensure that local resources were identified.

Through this process, MCN contacted over 750 agencies in 13 states and Washington DC. One hundred fifty nine agencies fit all criteria and 102 fit all but one of the criteria (primarily offering services through an interpreter rather than through fluent staff). Beyond the basic criteria, MCN collected information on accessibility, types of services, outreach, and more for each agency. This database of resources will be used as the primary referral source for the expanding hotline. In the coming months, the hotline will begin taking calls and connecting migrant agricultural workers with local mental health resources.

Though mental health services are difficult to access for many communities in the United States, migrant agricultural workers are at a particular disadvantage. Through this partnership, MCN, Farm Aid, and FRSAN-NE are aiming to create more inclusive and accessible means to access this crucial support. However, we understand that this is just the beginning of addressing mental health outcomes for migrant agricultural workers and are continually working to expand comprehensive reforms of physical and mental health access for these communities. For too long, migrant agricultural workers have put food on America's tables without being invited to share the meal. It is time for us to pull up a chair — or build a new table.

The Spanish-language hotline is expected to go live in the coming months. Contact Hannah Lawrence for more information about the Spanish Hotline project: hlawrence@migrantclinician.org.

Resources

Farm Aid English Hotline: https://www.farmaid.org/our-work/supporting-family-farmers/

SAMSHA Mental Health and Substance Abuse Resource Locator: https://findtreatment.samhsa.gov/locator

NAMI La salud mental en la comunidad latina: https://bit.ly/3kLgInw

National Center for Farmworker Health's Mental Health Resources: http://www.ncfh.org/mental_health_hub.html

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■ Adapting Tools to Better Understand the Impact of Climate-Related Disaster **continued from page 4**

ended questions that may appear in the tool and to explore if the concepts covered were culturally appropriate for the area. The participants were agricultural workers in Castañer, Puerto Rico, a zone of high agricultural activity. During the interview, they were asked about the type of work they do at the farms, the years doing this work, and some demographic questions about themselves. Information provided by this group was consistent with data presented on previous reports regarding income and education.

Interview results presented a clear framework of the components that should be included in assessment tools that seek to understand the relationship between behavioral health and disasters. It became evident during the conversations that there were a few areas that needed to be included in assessment tools, like historical experience with climate-related disasters, the level of impact of those experiences, understanding of the current climate crisis, preparedness strategies that are being implemented in the area, and psychological distance from climate change.

However, during the interviews, staff noticed that interviewees had a disconnect between certain concepts used in the tool and the workers' understanding of the concept. For example, when using a tool that asked them about different concepts relating to climate change, interviewees used the terms "climate change" and "global warming" as synonyms for regular weather variation. Concepts related to mental health like stress, depression, and anxiety were also used interchangeably. These results are shaping the process of our adaptation to focus on language that participants understand to ensure reliable results.

Moving forward, MCN will build a preliminary tool using the results from the interviews and previous analysis of available tools. Questions will be adapted to match the educational levels of agricultural workers, and will take into consideration interview results and information available in sources and reports including, but not limited to, the Census of Agriculture, the 2010 Population Census, UDS patient data, and the American Community Survey. In the long term, MCN hopes that the tools that will be developed can be used to gather information to inform strategies to improve agricultural workers' capacity to manage and overcome disasters. Understanding the mental health of agricultural workers and their relationship with climate change and resilience is essential to develop prevention strategies and appropriate public policy for the population, to ensure that when the next climate disaster strikes, this highly marginalized population in rural areas of Puerto Rico is better protected.

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accommodation – were swept underwater. In New York City, 11 of the 13 deaths from Hurricane Ida-related flooding were in basement apartments.

After the storm, the Federal Emergency Management Agency (FEMA) began providing $10 million of aid to qualifying residents whose homes were damaged or destroyed. Immigrants who lack authorization to live in the US, however, are ineligible for this aid.

Families like Moreno Aguirre's bear double setbacks to this climate-induced disaster: damaged or unlivable housing, plus few resources to move forward. Some may be displaced and lose their jobs, jeopardizing their food security, which leads to food-related health issues like malnutrition, diabetes, and obesity.[6,7] Others may move back into water-damaged homes and may suffer short- and long-term health consequences of exposure to molds.

These are just a few of the heightened and compounding social determinants of health (SDOH) that vulnerable workers across the country face during and after a disaster. SDOHs are the conditions in a person's environments – the home, the neighborhood, the workplace – that may influence that person's health and quality of life. For many low-income workers around the country, a climate disaster amplifies the negative impacts of SDOHs related to their work and home.

Disaster-influenced SDOHs are not restricted to metropolitan areas. In rural eastern North Carolina, agricultural workers in farm housing were displaced for months and many lost their jobs when unprecedented flood waters destroyed crops, concentrated animal feeding operations, and farm housing during Hurricane Florence in 2018.[8] The floodwater itself was tainted with swine and human waste, which remained in the mud that coated the walls of agricultural worker housing after floodwaters receded. A month after the hurricane, local waterways still had dangerous levels of *E. Coli* and other bacteria.[9] Like in New York City, those without authorization to live and work in the US had fewer resources to recover from the disaster and few employment opportunities that could provide better housing. Many lost their jobs as damaged crops were unsuitable for harvest. As climate change progresses, such displacement of low-income marginalized workers is anticipated to occur with increased frequency.

FIRE

§5141.1 Protection from Wildfire Smoke. (1) This section applies to workplaces where: (A) The current Air Quality Index (current AQI) for PM2.5 is 151 or greater, regardless of the AQI for other pollutants; and (B) The employer should reasonably anticipate that employees may be exposed to wildfire smoke. – California OSHA Smoke Standard[10]

In California, years in which megafires burned through a combined million acres of forest used to be extremely rare.[11] In the last five years, however, they have occurred every year. In 2020, CAL FIRE recorded over 3,600,00 acres burned and as of mid-September 2021 the agency had already tallied over 2,300,000 acres burned.[12] This increase in acreage burned follows the predictions of climate scientists that a drier and hotter climate would increase the frequency and intensity of wildfires. Climate change's impact is intensified by historical forest management; fire suppression was the dominant strategy, and prescribed burns to reduce undergrowth in mature forests had been largely underutilized as a strategy to slow megafires until recent years.[13]

The agricultural sector is one of the largest industries in California, and hundreds of thousands of agricultural workers fuel this industry.[14] Many of these workers lack authorization to live and work in the US. Others arrive in the US temporarily on H2-A work visas. Both sets of workers lack agency in their workplaces to report unsafe working conditions or mistreatment, despite the work being one of the most hazardous and lowest paying positions in the country.[15]

Disasters intensify these work-related SDOHs. Megafires blow smoke across the state, and workers hundreds of miles away from a fire may be impacted by its smoke. The fine particles in wildfire smoke are especially harmful to agricultural workers, whose SDOHs increase their risk for pre-existing conditions that are related to their profession. Pesticide exposure and dust from tilling and other farm equipment increase agricultural workers' risk of respiratory illness. Chronic obstructive pulmonary disease is another lung condition associated with farm work.[16]

California regulators recognized the increased risk of occupational exposure to smoke for outdoor workers, like those of agricultural workers, unconditioned warehouse workers, construction workers, and day laborers. In response, California's Occupational Safety and Health Administration (CalOSHA) enacted an emergency wildfire smoke standard when the Air Quality Index (AQI) for particulate matter 2.5 micrometers or smaller (PM2.5) is 151 or greater.[17]

When air quality reaches 151 to 500, employers must provide approved respirators to employees. At minimum, employers must increase the number of rest periods for workers, if relocation and/or rescheduling are unfeasible. When the AQI exceeds 500, respirators are required to be used by the employees. The regulation also requires employers to provide training on health issues like the effects of a smoke event and the proper use of a respirator.

Such regulations are a critical first step in reducing the negative effects of the occupational SDOHs that agricultural workers are facing as the climate crisis deepens, and as the climate crisis is overlayed with other disasters, such as the coronavirus pandemic. In 2020, researchers linked wildfire smoke to thousands of additional COVID-19 cases and deaths.[18] Agricultural workers continue to be at a high risk for COVID-19 exposure and illness due to their determinants of health like low economic stability, substandard housing, and poor access to health care and health education. Many agricultural workers who contracted a COVID-19 infection at work found themselves battling the virus with reduced lung function due to ongoing smoke exposure. Such workers may struggle to isolate themselves from family members or other workers in crowded housing, may be unable to easily access or afford sufficient health care, and may not have financial security to leave work for a period of time. This demonstrates that overlapping crises may magnify the negative determinants that workers like agricultural workers face.

In August 2021, Washington followed California's lead and implemented its own emergency standard on wildfire smoke. As of September 2021, while many states across the US are experiencing significant wildfires, California and Washington remain the only states with a smoke standard, leaving hundreds of thousands of outdoor workers and indoor workers in unconditioned warehouses unprotected.

AIR

Of course, the most notable direct impact of climate change is increased temperatures. According to the CDC, agricultural workers' risk of dying because of heat exposure is 20 to 35 times higher than workers in other industries.[19,20] As climate change advances, the health risks accelerate.

Agricultural workers' risk of heat stress may increase due to their occupational SDOHs: fear of retaliation may prevent them from asking for rest or water breaks. Those who have rest and water breaks available may forgo them, as many are paid a piece rate, which encourages workers to move quickly without breaks. Substandard uncon-

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 continued from page 8

ditioned housing result in many workers coming to work already dehydrated, positioning them poorly for the hot day ahead. In one recent study, half of workers started their day dehydrated.[21]

Some health concerns from climate change overlap. A heat wave may occur during a smoke episode. The cumulative impact of heat and smoke is a new concern among clinicians serving agricultural workers, and is highlighted as a special concern in *Clinician's Guide to Heat Stress*, produced by Farmworker Justice and Migrant Clinicians Network, and released earlier this year. The guide notes that the use of personal protective equipment like respirators, to reduce exposure to smoke or pesticides, may also increase a worker's risk of heat illness.

The guide also highlights chronic kidney disease of nontraditional origin (CKDnt), which may be associated with chronic heat stress. CKDnt is prevalent among agricultural workers in Central America and the success of water/rest/shade interventions in farms there indicate that the CKDnt epidemic among workers is primarily driven by occupational heat stress.[22]

As the climate crisis increases heat events around the US, workers who work outdoors or in unconditioned warehouses are, once again, at greater health risk because of their unique determinants of health related to their occupation, which are exacerbated in a hotter world.

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At present, there is no federal heat standard to protect outdoor workers. California's heat standard is no longer the only one; Washington, Oregon, and Minnesota have standards (although Minnesota's only covers indoor workers), and Maryland is presently

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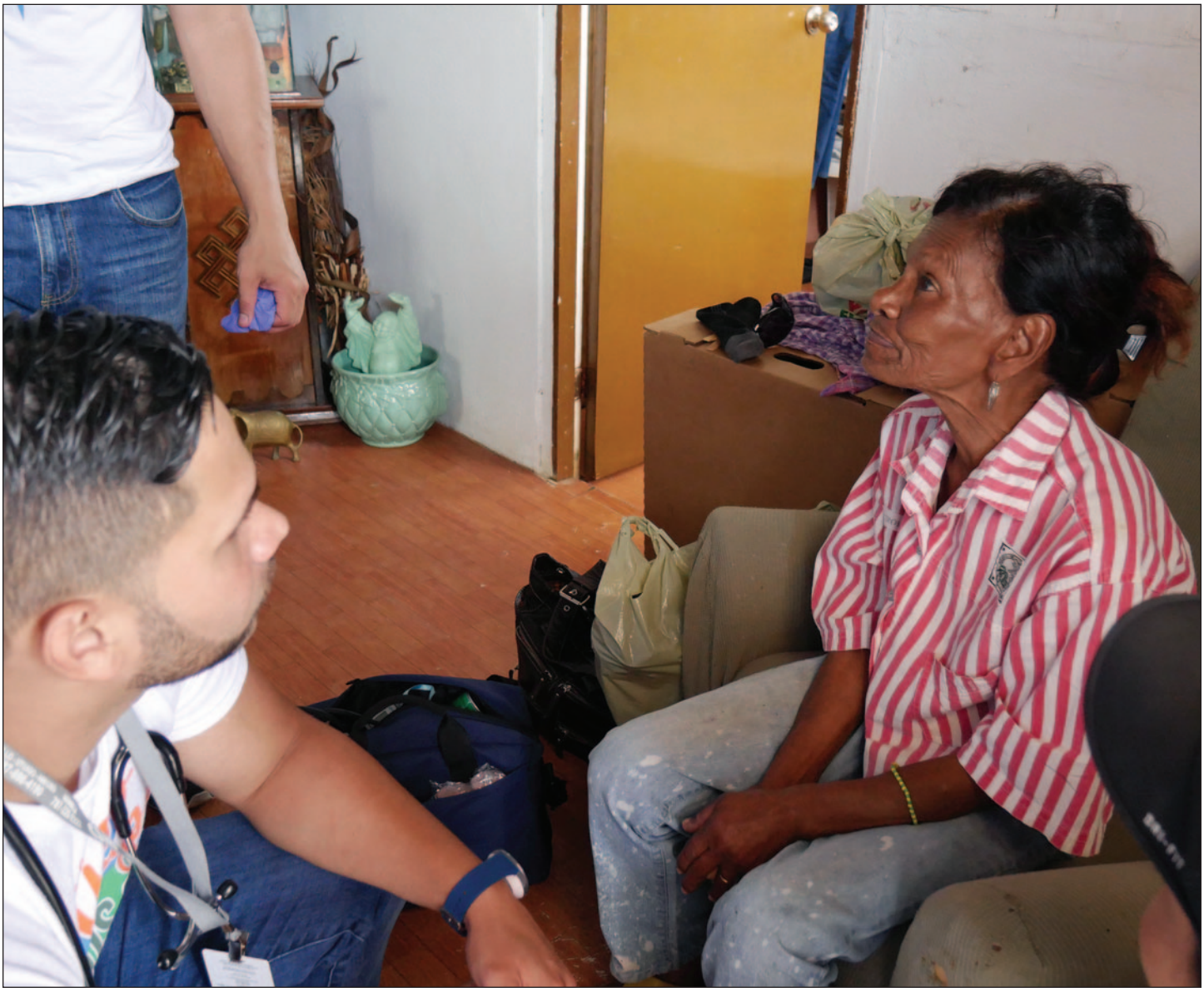

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drafting a standard. However, in September 2021, the White House launched an interagency effort to respond to extreme heat, including an OSHA notice that begins the process of advancing a workplace heat standard.[23]

EARTH

Warmer seasons are slowly changing ecosystems, and infectious diseases are taking advantage of altered environments. For example, heat waves in the West are drying out soil, leading to more frequent dust storm events. In areas where the soil contains Coccidioides fungi – desert regions in California, Arizona, Texas, New Mexico, and northern Mexico – the inhalation of the spores in the dust by outdoor workers and others can cause Valley Fever. Valley Fever is frequently misdiagnosed, as it presents like other flu-like illnesses, yet the official count of Valley Fever illnesses has been growing in recent years.[24,25]

Many other health concerns are similar to Valley Fever, in that outdoor workers may encounter them with greater frequency as a result of changes in ecosystems. Lyme disease is expected to increase, as ticks carrying the disease expand their range. Chikungunya and dengue may become more prevalent as the mosquitoes that carry the diseases take advantage of longer breeding and maturation seasons due to warmer weather.

Directly after a disaster, a new set of health concerns arises. Contaminated water and lack of access to bottled water may cause outbreaks of *E. Coli* or leptospirosis. Without electricity, some households may rely on generators, and indoor usage after

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How Climate Change Intensifies the Social and Environmental Determinants of Worker Health continued from page 10

disasters can result in carbon monoxide poisoning. A climate disaster may cut access to needed medicines and treatments, which increases mortality and morbidity after a disaster.

The impact of the climate crisis on mental health and well-being is just beginning to be evaluated and accounted for, but is already showing significant repercussions. (See "Language Matters: Adapting Tools to Better Understand the Impact of Climate-Related Disasters on the Puerto Rican Agricultural Worker," and "Building a New Bilingual Agricultural Worker Hotline," in this issue.)

The work itself may also be jeopardized. Warmer climates and altered weather patterns are expected to reduce crop output and disrupt growing cycles. Unpredictable or poor food production will decrease the need for agricultural workers and increase their economic instability, and possibly their need for migration.

HEALTH EQUITY

Taken as a whole, marginalized workers are clearly on the frontlines of the climate crisis. Clinicians need additional training to increase awareness about the new and overlapping health concerns that such workers are encountering. Additionally, national strategies to reduce the impact of the climate crisis on such populations need to be adopted. At the federal level, the new Health and Human Services Office of Climate Change and Health Equity does just that, seeking to identify communities with disproportionate exposures to climate hazards and vulnerable populations, addressing health disparities exacerbated by climate impacts, and providing training opportunities to the health workforce, among other important goals.[26] Such commitments to health equity, however, must be matched by rapid, worldwide implementation of efforts to reduce the pace of climate change through the reduction of greenhouse gases, if we wish to impactfully lessen the threats to health that climate change currently poses.

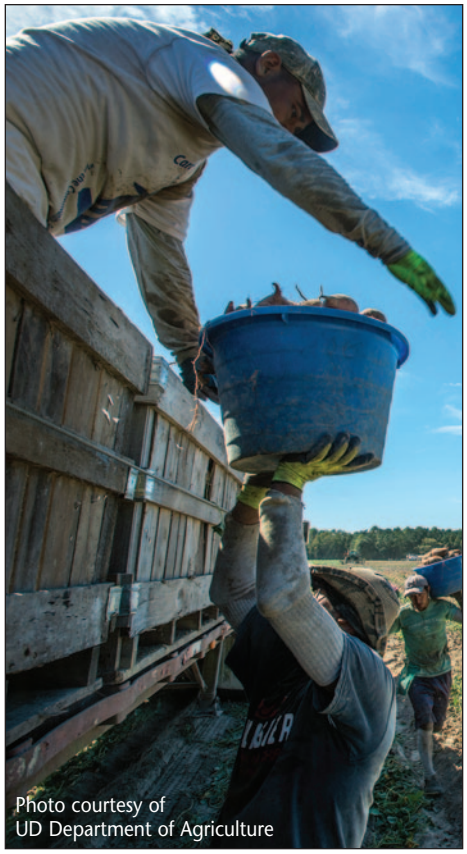

Photo courtesy of UD Department of Agriculture

RESOURCES:

Clinician's Guide to Heat Stress: https://www.migrantclinician.org/issues/heat

"It's So Hot and It's Dangerous," MCN's webinar on the role of community health workers in preventing heat-related illness, is archived on our website in English: https://bit.ly/3ufbGmp

"¡Hace mucho calor y es peligroso!" The webinar was repeated in Spanish and is archived as well: https://bit.ly/3zLKM6A

"Explorando la salud mental y el impacto de la crisis climática en las comunidades agrícolas," or "Exploring the mental health and the impact of the climate crisis on agricultural communities," is another MCN webinar that is archived: https://bit.ly/39GI8nY

"Why Farmworkers Need More Than New Laws for Protection From Heat-Related Illness," an article in the *Journal of the American Medical Association (JAMA)*, features MCN's Amy K. Liebman, Director of Occupational and Environmental Health.

Read MCN's comments on heat stress and details about what heat standards need to include to protect outdoor worker health, in our September comments to the Maryland Occupational Safety and Health: https://bit.ly/3ALN33a

Read the IPCC's executive summary of their Sixth Assessment Report to learn more about the physical changes from climate change: https://bit.ly/3ibWuBD. Watch for the IPCC's February 2022 report on the impact of these changes on marginalized populations.

MCN is a signatory of Clinicians for Planetary Health. Read more about C4PH's work and about planetary health: https://planetaryhealthalliance.org/clinicians-for-planetary-health

Read *The Lancet's* 2019 issue focused on planetary health, including the health consequences of climate change and environmental change, and the push for global action by clinicians: https://bit.ly/39OmFcN

The Lancet Countdown, an annual publication of *The Lancet* focuses on health and climate change from an international and multidisciplinary approach, recently came out with their 2021 report: https://www.thelancet.com/countdown-health-climate

Alias Names and Vaccine Mandates on MCN's FAQ continued from page <None>

cuss with migrant and immigrant patients whether the patient will need the card in the patient's name or in their alias name. The patient may need two cards. If possible, the clinician should include the worker's name and alias ("AKA") name in the state's vaccine database, which is accessible to health care providers and health authorities but not to employers.

A worker got vaccinated under his own name. He uses an alias at work. Now, there's a vaccine mandate at his work, but his vaccine card doesn't match his work name. What should he do?

We recommend that the clinician issue a second card with the alias name. If possible, the clinician is encouraged to include the alias ("AKA") in the state's vaccine database, so that both cards hold information that is verifiable in the database that is accessible only to health care providers and health authorities.

A worker got vaccinated under her own name. She uses an alias at work. Her workplace held a mandatory vaccine clinic for those who couldn't show proof of vaccination, so she got vaccinated a second time because she couldn't prove her first vaccination. What are the health implications of double vaccination?

There are limited data on patients who have received more vaccinations than is recommended.

Initial data from the CDC about people who have received a third dose showed similar or more mild side effects to those of the two-shot series.[1] These side effects include short-term fever, chills, and other flu-like symptoms.

Read our complete FAQ in English and Spanish on our blog: www.migrantclinician.org/blog. Be sure to subscribe to MCN's blog and follow on social media to hear when the FAQ is updated with new questions.

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