Health Network:

The GPS that Guides Patients Through Our Health System

By Nilsa Padilla, Senior Manager of Health Network and Research, Migrant Clinicians Network

magine you are on vacation in a new country and, suddenly, you lose your phone. Without directions, support, or communication, you would likely feel lost in an unfamiliar environment. Now, imagine that, without your phone, you suddenly become sick, while far from home. You do not know the health system, you may not speak the local language, and you may not have insurance or know how to use your insurance if you do have it. In that moment, even the first step feels overwhelming. Many people experience feeling unanchored when debilitating health issues occur — here in our own communities.

Across the United States, patients who are unwell often must cope with their illness while also trying to navigate language differences, lack of connection in the community, unfamiliarity with the health system, insufficient or no health insurance, and inflexible work situations that may not accommodate a trip to a doctor – all of which limit their ability to find care.

These same patients may also be experiencing a wide range of issues outside of their immediate health status that can affect their ability to get care. If parents are worried about where they will sleep tonight or what their children will eat tomorrow, preventive screenings and follow-up appointments are simply not their priority. Ongoing access to care for a health need, therefore, starts long before a patient finds a clinic.

That is why Migrant Clinicians Network (MCN) is relaunching our innovative program, Health Network, to integrate growing community needs and build a flexible, evidence-based, and community-driven lens into our model – with the ultimate goal of efficiently increasing access to care for people who otherwise would not be able to get the care they need.

Health Network is MCN's care coordination program. It started in 1996 to assist patients

who needed to move while being treated for active tuberculosis disease and who were at risk of being disconnected from that critical care because of their mobility. Since then, Health Network grew to support many health conditions like cancer and diabetes and eventually expanded to serve patients with any ongoing health need. Health Network has served tens of thousands of patients, including thousands of migratory and seasonal agricultural workers (MSAWs), to find the care they need, despite a myriad of obstacles in their way, including mobility.

Health Network is more than coordination: it is like GPS, carefully guiding patients through every step of a complicated health

system to get them through the maze of actions they need to take in order to get the care that they need.

But GPS only works if people trust it. MCN's Health Network is now working to better identify and meet the evolving needs of our communities, to build trust in those communities, so we can effectively serve all patients. Improvements to Health Network strengthen our ability to reach people, like MSAWs, where they are. To meet these goals, Health Network is: providing a larger range of services; augmenting the training for Health Network Associates; expanding eligibility for

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Alma Colmenero, who has worked with Health Network for over seven years, recently obtained certification as a Texas-based Community Health Worker. Here, she presents Health Network at a health fair offered by the Austin Ventanilla de Salud.

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patients; equipping a larger range of health professionals that are able to enroll patients, for example, Community Health Workers (CHWs); and growing its educational focus.

A Larger Range of Services: We have found that patients cannot attend to their health needs when their basic physical needs like food and housing are not met. This conclusion is in line with the literature, which indicates not only that issues like housing instability and food insecurity are associated with the postponement of medical care, but those issues are simultaneously associated with increased health needs. In one 2023 review of 42 studies, housing instability was found to be associated with poor cardiometabolic health, including higher prevalence of obesity, hypertension, diabetes, and cardiovascular disease, and worse hypertension and diabetes control.1 Similarly, food insecurity is associated with an increased probability of multimorbidity.² These increased health needs for people who cannot meet their basic needs are overlayed with delayed utilization of health care, at exactly the time when they would need more health care to stabilize their health and ensure that their acute health needs do not worsen.3 It is important to note that these associations are potentially bidirectional; a person in poor health may be unable to maintain the economic resources to keep secure housing and steady access to healthy food. Those who lose their jobs may be unable to access health insurance. In all cases, however, it is important to recognize and respond to the overlapping basic needs of our community members - not just health care, but also access to food, housing, childcare support, health insurance, and more – to sustain their health. Health Network now assists patients in connecting to agencies or organizations that provide social support such as food assistance, housing resources, and other basic needs — stabilizing the most urgent issues first so they can focus on their health without fear or distraction.

Additional Training for Health Network Associates: CHWs make a difference. In a randomized controlled trial of food-insecure patients with diabetes, the control group received food, and a second group received food and counseling and resource linkages from a CHW. There was a statistically significant drop in diabetes A1C test results among the patients in the group that received CHW support, even though both groups received healthy foods. Additionally, the drop in the CHW-supported group was sustained six



A flipbook provides summaries and QR codes to Health Network resources and flyers so community health workers and outreach team members can get to know the program.

months later.⁴ This is one of many studies that indicate that CHW interventions have significant and lasting positive health impacts on the communities they serve. Health Network Associates have achieved certification as CHWs and Patient Navigators through programs like the Patient Navigator Training Collaborative or the Texas Department of State Health Services.

Health Network Associates are more than service providers, they embody a collegial approach that is grounded in evidence showing the effectiveness of community-based, trusted messengers. Our Associates share heritage, lived experiences, and languages with the populations they serve. This alignment builds trust and strengthens communication, making it easier for patients to navigate complex health and social systems. Through additional training, such as certification as Patient Navigators and Community Health Workers, our bilingual staff combine professional skills with personal connection. This unique model transforms outreach into a relationship of trust, support, and care.

Expanding Eligibility for Patients: In addition to serving MSAWs who need to move before their treatment is complete, Health Network serves any person who is unable to navigate the health system or meet their basic needs. Opening this service to

larger numbers of our communities ensures that we create pathways for healthy living for all members of our community, addressing the nation's most pressing health concerns, which include chronic disease, mental health issues, obesity, nutritional deficiencies, and exposure to environmental toxins.⁵ It also ensures that MSAWs who are "missed" during intake do not miss the opportunity to take advantage of Health Network. Some MSAWs, due to the temporary nature of their work, decline to indicate their agricultural work in medical intake forms and medical histories. This should not be a barrier to enrollment in Health Network. We want to make sure that clinicians are aware that Health Network is not limited to one occupation. Simultaneously, we remain committed to serving MSAWs and people who need to move before their treatment is completed, as we have for almost three decades.

Equipping Health Professionals: Traditionally, credentialed health care providers could enroll patients in Health Network. To build ongoing and long-term trust with families and communities and to validate Health Network as a safe and reliable resource, we are partnering with communitybased organizations (CBOs). The partnership serves to invite CHWs, outreach workers, and other health professionals embedded within the community to enroll their community members who need assistance in finding care into Health Network. CBOs are key partners that act as trusted messengers around issues of health and well-being. By building longterm partnerships with CBOs and opening enrollment to CHWs and other health professionals within these CBOs, Health Network will maximize its ability to successfully support the communities who need it most.

Educational Focus: To further embed ourselves into communities, Health Network is increasing its visibility in community events. We provide educational materials and visual tools like our comic books, to teach families how to access care and navigate the health system, step by step. This educational focus opens the door to services and equips families to access care with more confidence and clarity. We have already begun this expansion in our home state of Texas. Health Network Associates have joined our teams at local Ventanilla de Salud health fairs to assist in enrollment of patients as needed.

Longer term, we hope to further professionalize and expand the model, to benefit

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MCN's Diabetes Comic Book in Action: Supporting Community Health in Minnesota

By Mónica Fossi, Translator and Communications Coordinator, Migrant Clinicians Network

MCN's evidence-based patient-facing resources expand their reach, thanks to community allies and the adaptability of the materials.

s a national nonprofit, Migrant Clinicians Network (MCN) shares resources and evidence-based strategies with health centers, partner organizations, and other health promotion allies across the United States, with tools specifically designed to equip communities to improve the health of community members and increase access to care when needed. In 2024, MCN reached a total of 6,867 Community Health Workers (CHWs)/promotores de salud, outreach workers, and health care professionals through its webinars. In collaboration with partners, we also provided direct support to more than 29,000 individuals in local communities with resources, screenings, and in-person educational sessions.

Yet, these numbers do not take into account the tens of thousands whose lives are improved by informed and equipped clinicians and communities. The ripple effects of our train-the-trainer sessions, our patientfacing comic books, and our webinars spread deep into communities around the country. This article describes how two organizations came together to bring diabetes information to Minnesota workers using the popular MCN comic book, My Health is My Treasure: A Guide for Living Well with Diabetes.1

The United States is experiencing an epidemic of diabetes. Almost 12% of the population is diagnosed with diabetes, and another 22.8% of US adults are estimated to have diabetes that is undiagnosed.2 According to the US Department of Health and Human Services, by 2022, Hispanic adults were diagnosed with diabetes at a rate that is 13% higher than the overall population, and have higher rates of visual impairment, a complication of diabetes.3 Last year, one community member-based organization in Minnesota responded to this high incidence of diabetes with a diabetes awareness campaign in Spanish. They developed a training for CHWs to effectively reach Minnesota workers who speak Spanish with this information. Leadership of the organization's Health and Wellness Program reached out to Elmer Romero, Director of Popular Education at a partner organization that is focused on workers, to collaborate on this



Reworking educational materials into games and activities assists outreach teams to engage participants in health issues.

diabetes awareness campaign.

To assist Spanish-speaking Minnesotan workers to better understand diabetes, Romero suggested the integration of MCN's comic book, My Health is My Treasure as an educational resource. To enhance its effectiveness, his team created a new complementary resource: a puzzle that staff involved in the campaign could use to incite dialogue among the workers and allow them to acquire new knowledge regardless of literacy level. Because My Health is My Treasure is free, customizable, and available in Spanish, the organizers could adapt the pre-

"Since before the pandemic, I was already following MCN and started participating in the trainings sessions. I really liked the materials they created.

— Elmer Romero

designed and tested resource to ensure their puzzle would be accessible, relevant, and attractive to the workers.

Romero and his popular education team then set about the task of identifying which diabetes concepts from My Health is My Treasure to share and which images to use in the puzzle to raise diabetes awareness, understanding, and action. According to Romero, the puzzle acts as a "code" that participants, through gradual and exploratory dialogue, can decode together. The images provide elements for reflection, leading to collective discussion and interpretation of ideas. This code allows the use of the participatory technique of "see, judge, and act," a technique adopted by popular education, where participants collectively discuss and interpret what they see in the images, what is happening, how it applies to their reality, and how to put what they have learned into practice. Through this method, they achieve a higher level of understanding and knowledge. This inductive and playful approach is what makes this puzzle an effective teaching tool.

Once the draft of the puzzle was developed, the team provided it to two additional partner organizations to put it to the test, gathering excellent feedback from resource testing with Houston workers. After testing, CHWs were trained to utilize the comic book and puzzle to begin the diabetes awareness campaign.

This diabetes awareness activity sought to reach migratory and seasonal agricultural workers (MSAWs), as well as construction, dairy, cleaning, and landscaping workers in south-central Minnesota. Thanks to the member-based organization's financial support, the puzzles and comic books were printed and distributed at educational sessions. In total, CHWs brought the topic of diabetes to 1,121 people through 269 workshops or educational sessions in parks, fairs, community businesses, churches, schools, trailer parks, apartments, and worker centers. After the conclusion of the diabetes awareness campaign, partner organizations continued to use MCN's comic book and the

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puzzle to educate Houston-area workers.

This is a great example of how MCN's free and adaptable resources create the launchpad for community-based organizations to:

- Collaborate when their goals and service target populations are similar,
- Increase the visibility and reach of the health education resources they develop,
- Improve the accessibility of health information regardless of literacy level limitations,
- Maximize their educational creativity from existing adaptable materials, and
- Reduce the costs associated with outreach and health promotion activities.

"It is important that there exist customizable materials that use the pedagogical model of popular education. These models really generate learning," Romero said. Popular education teaches through dialogue, provokes conversations, and strengthens people's critical thinking, he added. "It is not only about seeing and thinking, but also about taking action, making an impact on their lives. I am a strong believer in popular education because I have seen it work and when I apply it and it is applied well, it works. It works not only because of its methodologies, but also [because it incorporates] the ethical and political aspect of each topic."

Romero also emphasized that organizations' own CHWs must lead by example: "These materials should first be used for our own self-care so that we can be caregivers for caregivers." By engaging and implementing the materials, CHWs can improve their own health while testing the materials to make sure they will resonate with their com-

own health while testing the materials to make sure they will resonate with their com-

An organization works with the puzzle pieces created out of outreach materials.

munities. "We must systematically plan our work and evaluate it effectively, as this helps improve the materials and bring them to more people," he concluded.

Resources:

To download and customize our diabetes comic book in English or Spanish, please visit: https://www.migrantclinician.org/resource/my-health-my-treasure-guide-living-well-diabetes-comic.html

To access all of our comic books, go to our Comic Book page: https://migrant clinician.org/comics

To access all of MCN's free and adaptable resources, visit our Resources page: https://www.migrantclinician.org/es/tools-and-resources.html

To learn about our upcoming webinars and to participate, visit our Upcoming Webinars page: https://www.migrantclinician.org/webinars/upcoming

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more communities across the United States – because our communities are too often lost when trying to navigate our health system.

Health Network strengthens our communities by opening the pathway for patients to feel safe and equipped to engage in the care they need. Our high-impact, low-cost, community-embedded care coordination ensures patients can get access to care earlier in their disease progression, saving resources and improving health outcomes.

Clinicians are invited to engage with Health Network to learn more and begin enrolling patients into our online, HIPAAcompliant Health Network Portal. Here are some resources to get started:

 Health Network flyers: Learn more about the basics of Health Network and download our bilingual flyers, including one specifically for Community Health Workers, one for disaster response, and one for MSAWs: https://www.migrantclinician.org/ healthnetwork

- Enrollment: Learn how to enroll and log into our Health Network Portal on our enrollment page: https://www.migrant clinician.org/enroll
- Health Network: A Care Coordination
 Program for Patients Who Move During
 Treatment: Watch our recent webinar, in
 English with simultaneous translation in
 Spanish, where a Health Network Associate
 and our Chief Medical Officer share more
 about the program:. https://www.migrant
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H5N1 During Influenza Season: A Primer for Clinicians Serving Dairy Workers

By Claire Hutkins Seda, Director of Communications, Migrant Clinicians Network

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www.migrantclinician.org/streamline/2025/fal

Learning Objectives

- 1. Summarize the current state of H5N1 in United States agricultural operations.
- 2. Synthesize the clinical guidelines for the identification, prevention, and treatment of H5N1 and seasonal influenza.
- 3. Identify resources and best practices that can be used to address H5N1 and seasonal influenza among Spanishspeaking workers on dairy and poultry operations.

nfluenza viruses evolve over time. In the last few years, epidemiologists have watched as the highly pathogenic avian influenza A virus, known as H5N1, HPAI, or avian flu, jumped species. In March 2024, H5N1 was detected for the first time among dairy cattle, after years of ongoing outbreaks among poultry operations across the nation. During this period, many non-traditional hosts were also infected, including birds of prey, bears, domestic cats, and marine mammals. The virus, however, is not new. Since 2022, at least 1,773 outbreaks of H5N1 have been reported on poultry operations, affecting over 181 million birds. Since its jump to dairy cows in 2024, there have been 1,081 confirmed cattle premises reported in 18 states.2 In 2025, the virus has continued to spread, most recently with Nebraska registering its first cases of H5N1 among cattle in September but mostly in poultry (commercial and backyard flocks) over the past 30 days.

There remains no known human-to-human spread in the United States, and the risk to the general public continues to be considered very low. However, workers exposed to potentially infected animals have a higher risk of infection, and 70 total human cases have been confirmed.3 These cases were attributed mostly to close contact with infected poultry or dairy cattle. Consequently, clinicians serving agricultural communities, particularly those with dairy operations, must develop a differential diagnosis when a patient or community member has flu symptoms. In this article, we discuss the basics of H5N1 on dairy operations, the risks to workers, how to lower that risk, and the signs, symptoms, and treatment protocols for H5N1.



H5N1 Among Farm Animals

H5N1 presents differently in cattle than in poultry. When a chicken contracts H5N1, it typically dies. To stop the spread, poultry operations often preemptively cull thousands of birds. When a cow contracts H5N1, however, the infected cow's symptoms are less stark. Dairy workers may notice decreased appetite, decreased milk production, thickened or clotted milk, tacky or loose feces, lethargy, dehydration, and/or fever. Morbidity is very low from the virus among dairy cows. Unlike poultry, where wild birds like migrating geese are believed to be the primary transmission pathway, animal and human movements have been identified as the most likely transmission pathways on dairy operations. Vehicles can transmit the virus when dairy operations are visited by the same deadstock hauler, feed trucks, or milk trucks. Dairy operations have imported H5N1by acquiring cattle from infected herds from other operations. Human movement also increases the risk of spread when workers contract the virus. Workers sometimes work on more than one dairy operation, or workers from different operations may share housing, inadvertently spreading the virus between farms. Cats, a common farm resident that may also be spreading the virus, are highly susceptible to H5N1, causing noticeable illness and, oftentimes, death.

H5N1 Among People: Symptoms, Recognition, and Treatment

Many people - not just dairy workers - are at risk of exposure to H5N1 from dairy and poultry operations. Slaughterhouse workers,

veterinarians, workers caring for sick animals, community health workers visiting agricultural sites, milk truck haulers, people at farm events or fairs that feature live animals, and consumers of raw milk may be exposed to the virus. (See side bar on raw-milk products.)

H5N1 symptoms are often mild, or infected patients may be asymptomatic. Among symptomatic cases, patients may experience flu-like symptoms including fever, runny nose, chills, fatigue, and joint aches. Conjunctivitis/red eyes is a common symptom of H5N1 that should raise a clinician's concern of the virus.

In the process of creating the differential diagnosis, clinicians should take a thorough occupational and environmental history to uncover exposure to dairy operations. MCN recommends using our Environmental and Occupational Health Screening Questions for Primary Care, which are available in Spanish and English, for getting to know the patient and understanding the environment in which they are working, and the exposures they sustain. (See Resources.) The three primary questions are:

- 1) Describe what you do for work including where you work and your specific tasks at
- 2) Are there any physical activities that you do – at work or away from work – that you feel are harmful to you?
- 3) Are you exposed to chemicals, fumes, dusts, noise, and/or high heat at your work or away from work? Do you think they are harming you?4

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This portion of this publication (pages 5-7) is supported by the Upper Midwest Agricultural Safety and Health Center. UMASH is one of twelve Centers of Excellence in Agricultural Disease and Injury Research, Education, and Prevention funded by the National Institute for Occupational Safety and Health (NIOSH) throughout the United States. Funding is provided through a cooperative agreement from NIOSH, US4OH010170 (2009-2027). Visit: https://umash.umn.edu/niosh-aff-program/.

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H5N1 is not part of the typical virus panel, however, as one of the Influenza Type A strains, a viral panel that shows a negative test for Influenza Type A rules out H5N1. For H5N1-specific testing, lab testing is primarily conducted by state departments of health. If a patient has suspected H5N1, begin treatment immediately (see next paragraph) and contact the state's health department to arrange for a collected specimen to be tested for H5N1.

CDC currently recommends that workers who are exposed to sick cows or poultry but are not experiencing symptoms should be tested. Anti-viral post-exposure prophylaxis with oseltamivir (Tamiflu) is recommended for asymptomatic workers with high-risk exposure, especially those who did not wear adequate personal protective equipment. Workers who are sick with known exposures should be started on oseltamivir, twice daily for five days, as soon as possible. Clinicians are reminded to wear personal protective equipment when working with exposed and ill workers.

Dairy Workers: Routes of Exposure, Tasks in the Dairy Operation

Workers on dairy operations have a wide range of tasks, with varying levels of risk. Some common job tasks include:

- Milking cows
- Moving cows
- Treating cows
- Feeding cows
- Scraping cow pens
- Feeding and caring for calves
- Operating skid loaders to transport cow feed

Mammary glands (the udder) of infected cows shed a significant amount of virus. There is some virus present in manure. Milking, and tasks that bring a worker in contact with milk and dairy cow udders, are activities that are the highest risk of H5N1 exposure. Dairy operations typically have machinery to milk cows, bringing the udder up to eye level of the worker, which may increase risk, as droplets of milk splatter on the eyes, nose, and mouth. Contaminated milk on hands or gloves can be another route of exposure, when workers bring their hands to their eyes, nose, or mouth. Workers who are handling cows, but also those who are scraping feces, cleaning milk machinery, and otherwise handling bedding or feed that have been used by infected cows, are at risk.

How to Prevent Exposure: Two Lines of Defense:

1) Prevention: Training and Administrative Controls

Prevention is the first line of defense. Worker



trainings are essential to equip workers with the knowledge they need to understand how the virus spreads and how to avoid exposure, as well as what the symptoms are, and what steps to take if they fall ill. Dairy operations that employ Spanish-speaking workers who were not born in the US are responsible for most of the US milk supply. Many workers have limited formal education, are relatively isolated from the larger community, may be separated from their families who are living in their home countries, prefer other languages besides Spanish (including indigenous languages), live in unsafe housing, lack health insurance, or lack familiarity with the US health system. Some have never received safety training on the job in their language, and most have jobs on dairy operations that have significant health and safety risks, including H5N1. Worker trainings must take into account these and other factors unique to dairy workers, so that the trainings are relevant, understandable, and actionable.

For example, MCN, the National Farm Medicine Center and the Upper Midwest Agricultural Safety and Health Center (UMASH) created Seguridad en las lecherías, a Spanish-language curriculum, specifically to assist dairy workers to stay safe at work. The curriculum uses a train-the-trainer model, in which a trusted peer, like a local community health worker, trains the workers themselves in Spanish using the materials provided. This peer-trainer approach with relevant training materials is recommended for successful infectious disease prevention trainings.

The topics in the *Seguridad* training give workers a strong foundation in staying safe in dairy operations, taking into account the many factors that affect this worker population:

- Introduction to hazards
- · Animal handling
- Machinery and equipment
- Workers' rights and responsibilities
- Chemical safety and confined spaces

UMASH together with MCN is updating to curriculum to broaden its infectious disease content, including H5N1 risks.

H5N1 layers new challenges atop the preexisting health risks related to dairy production – and the risks are still beginning to be understood. H5N1 transmission dynamics are still not fully understood. Different states, and different producers, may have varying norms, standards, and regulations, which complicate the picture further. MCN provides H5N1-specific training materials in Spanish including a two-page handout and videos in Spanish. Visit our Avian Flu page for access: https://www.migrantclinician.org/avianflu.html. Additional resources are listed at the end of this article.

CDC recommends other administrative controls beyond worker training, including: monitoring and testing animals; monitoring workers for illness; providing workers with paid time off to support workers who are sick; testing workers who have developed symptoms or had unprotected exposure; provide safe storage for workers' items; and provide workers with the ability and time to maintain hygiene, like providing hand washing stations and building in additional breaks for personal hygiene.⁶

2) Personal Protective Equipment

Personal protective equipment (PPE) is another important line of defense. In highexposure environments, for example in a dairy operation with active cases, CDC recommends fluid-resistant coveralls, a NIOSHapproved respirator like a N95, safety goggles, a head cover, disposable gloves, and boots or boot covers.⁷ As dairy operations are wet environments with large animals, most workers are already using some PPE, particularly fluid-resistant aprons and boots. Face shields can be particularly useful to keep moisture off of a respirator. During situations where active H5N1 infections are occurring in cattle, N95 respirators should be provided and many local health departments can actively provide PPE resources.

In hot, humid environments like summertime milking parlors, dairy workers are exposed for hours at a time to high heat environments where PPE is not just uncomfort-

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Raw Milk

Consumers of raw milk, and raw-milk products like raw-milk cheese and rawmilk butter, are at risk of the virus. Dairy workers often take raw milk home. Trainings should include information on the high levels of virus detected in milk from infected cows, and a strong recommendation to safely pasteurize any milk to eliminate risk. While regulations require raw-milk cheese to be aged 60 days, a recent report published in Nature Medicine found that raw-milk cheese up to 120 days old still had viable virus contamination, depending on the pH level of the cheese.10 Pasteurized milk and pasteurized milk products are considered safe from the virus.

able, but potentially dangerous, increasing the risk of heat illness. Dairy workers might avoid using PPE, or use it incorrectly, due to the discomfort and/or their work habits. Training on how to use PPE, therefore, must be accompanied with trainings on heat stress. Employers are recommended by CDC to adjust work schedules, ensure time for rest and hydration, and monitor worker well-being to confront the possibility of heat stress when PPE is used. Employers must provide the PPE to their workers. CDC has requested that state health departments make PPE available in workplaces where H5N1 may be present.

MCN has extensive resources on heat stress for workers, in English and Spanish, on the heat page: https://www.migrantclinician.org/ explore-environmental-and-worker-health/ heat.html.

3) Other Controls

Other controls exist for dairy operators and producers to follow. CDC outlines several recommended engineering controls for dairy operations including using a good ventilation system, and using milking systems with automated features to reduce worker contact with mammary glands.8 USDA has extensive information on its site on the biosecurity measures to follow.9 Clinicians can get to know these additional aspects and share them with workers, so that workers are aware of the best practices that operations are expected to follow.

The Importance of the Flu Vaccine

There is presently no available vaccine to prevent H5N1; however, new vaccines are being developed.¹⁰ However, it is important for clinicians to encourage dairy workers and others in rural communities to vaccinate against seasonal influenza. On a theoretical level, an agricultural worker can become ill with the seasonal influenza (H1N1) and avian flu (H5N1), simultaneously. In such a theoretical situation, both viruses can "reassort" their genetic material, that can cause mutations, which

could cause the virus to spread more easily or be more severe. To prevent this possibility, clinicians are encouraged to promote seasonal flu vaccination among dairy, poultry, and swine workers.

MCN has numerous fall vaccination resources, including a newly archived series of webinars in English and Spanish on flu, COVID, and RSV vaccines, and building trust in the community around vaccines. Visit https://www.migrantclinician.org/exploreenvironmental-and-worker-health/heat.html to find recordings of these webinars.

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How to Receive Your Continuing Medical Education Credit:

This article is eligible for 0.5 of Continuing Nursing Education credit accredited by the American Nurses Credentialing Center (ANCC). To receive your credit, please visit www.migrantclinician.org/streamline/2025/fall or direct your phone's camera to the QR code below. Complete the questions in the quiz on that webpage to demonstrate knowledge gained and provide your contact information. Answers must be submitted before January 21, 2026. For questions on your credit, please email contedu@migrantclinician.org.

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Additional H5N1 Resources

Migrant Clinicians Network's Avian Flu page with resources for clinicians and patients, in English and Spanish: https://www.migrant clinician.org/avian-flu.html

Upper Midwest Agricultural Safety & Health Center's Avian Flu (H5N1/HPAI) Toolkit: https://umash.umn.edu/hpai-toolkit/ #h5n1-toolkit

National Center for Farmworker Health's H5N1 Bird Flu Resources page, with resources in English and Spanish: https://www.ncfh.org/infectious-diseasehub/h5n1-bird-flu-resources/

Seguridad en las lecherías, a train-the-trainer Spanish-language curriculum including comic books on dairy operation safety: https://www.migrantclinician.org/exploreenvironmental-and-worker-health/ immigrant-dairy-worker-health-and-safetyseguridad-en-las

MCN's heat stress resources: https://www.migrantclinician.org/exploreenvironmental-and-worker-health/heat.html CDC's Clinical Guidance for Evaluating Patients and Treatment and Post-exposure Prophylaxis (PEP) of Influenza A(H5N1) Virus Infection: https://www.cdc.gov/birdflu/hcp/clinicians-evaluating-patients/clinicalguidance-treatment.html



Planting Seeds on Fragile Ground

By Marysel Pagan Santana, DrPH, MS, Director of Environmental and Occupational Health

ovember is the last month of hurricane season and, although this year Puerto Rico did not have a direct impact from a hurricane, the air feels charged with memory. The names Katrina, Harvey, Irma, María, Michael, Dorian, Ian, and Helene echo in Puerto Ricans' collective consciousness like familiar warnings. Those who experienced Hurricane María in 2017 still hold their breath when they see a storm developing nearby. This year, the worst of Hurricane Melissa missed Puerto Rico, but our Caribbean neighbors have not been spared. Puerto Ricans understand the shock and bewilderment of watching their lives, their homes, their livelihood, the infrastructure that helps people stay safe and healthy, all wash away in a matter of hours. Even after eight years of recovery and preparedness efforts, for some it's hard to say that they are "ready" for the next one.

In those eight years, we have seen growth but also delayed recovery processes. The

social vulnerability and affected infrastructure make any weather event a potential emergency. What was before just "seasonal rain," now can become intense events that result in blackouts, communication interruptions, and the overall disruption of our daily lives. "We are not ready," we recognize, and yet, our communities keep working. From community emergency planning to the resiliency of our food system, neighbors and communitybased organizations have joined to rebuild with a sense of purpose. Since 2018, Migrant Clinicians Network (MCN) has been both a collaborator and a witness to how our communities repair and work with the main goal of creating self-owned and -managed systems. There is still much to do, and with unfinished roofs and mid-constructed roads, we still wonder if our houses can withstand the next one. We know the time will come, and we are not ready.

This writing does not come from hopelessness; on the contrary, it comes from the

recognition that change is not always quick and that the energy for community efforts is not constant. It comes from acknowledging that the road is long, the work is hard, and the obstacles and challenges are many. It comes from knowing that year after year, organizations such as community health centers plant and cultivate community preparedness and response. It is from this recognition that, three years ago, several colleagues came together to design and propose a project aimed at supporting agricultural communities in their efforts to prepare, protect, and recover from climate-related disasters and emergencies.

Strengthening the Capacity of Community Health Centers to Address Extreme Weather Events in Agricultural Communities and Workers in the Caribbean is a project supported by MCN, Mentes Puertorriqueñas en Acción, and the US

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This portion of *Streamline* (pages 8-11) is supported by the National Institute of Food and Agriculture (NIFA) and the United States Department of Agriculture (USDA) under award number 2023-67017-39626.

Equipping Communities to Prepare for Disaster, from the Health Center Out

By Gabriela M. Avilés Piñeiro, MPH

Gabriela holds a Master of Public Health in Environmental Health from the University of Puerto Rico, Medical Sciences Campus. She joined MCN as a public health practicum student.

n Puerto Rico, heat has become more than an inconvenience — it's a public health threat. For years, we've been told that the climate is changing, but what we're experiencing now feels different: more intense, more frequent, and more unpredictable. These shifts are not overnight events. They are the result of decades of humandriven environmental change, now accelerating across the Caribbean.

Not everyone faces these impacts equally. Agricultural and rural communities are among the most affected. A hurricane, a drought, or an extended heatwave can damage crops, interrupt livelihoods, and compromise both physical and mental health. These communities bear the burden of extreme weather on multiple fronts: economic, environmental, and emotional.

In this context, Community Health Centers (CHCs) play a crucial role. They are more than health care providers; they are lifelines, and trusted spaces that connect science with lived experience. Their staff often know every patient by name, every family's story, and every local challenge. When emergencies strike, they are the first to respond and the last to leave.

I witnessed this firsthand through Migrant Clinicians Network's (MCN) Building Capacity Among Community Health Centers to Address Weather-Related Extreme Phenomena on Agricultural Communities and Workers in Puerto Rico and the US Virgin Islands, a collaborative project designed to strengthen CHC capacity to respond to the health impacts of extreme weather. As a graduate student in environmental health, I was assigned to work with COSSMA, a community health center that serves several municipalities across Puerto Rico's mountainous and coastal east.

A Legacy of Service

COSSMA has served low-income and agricultural communities since 1987, providing primary and preventive care to populations that often face barriers to access. For many residents, especially older adults and agricultural workers, COSSMA is their only source of care.

When Hurricane María devastated Puerto Rico in 2017, the CHC staff arrived to find their building heavily damaged. The zinc roof was torn away, equipment was ruined, and medical supplies were drenched. Yet,

outside, a line of patients was already waiting. The team didn't hesitate. They set up a temporary clinic under a tent on the sidewalk and began treating patients. That response captured the spirit of what community health looks like in Puerto Rico: adaptive, compassionate, and relentless.

Eight years later, that same resilience drives their work, but the threats have evolved. The hurricanes haven't stopped, and now, extreme heat has joined the list of hazards. Blackouts during heatwaves, poor ventilation in zinc-roof homes, and worsening air quality are creating a dangerous combination for those with chronic illnesses.

Co-Creating an Educational Response

Our first meeting with COSSMA's outreach and health education staff took place virtually in early June 2025. The conversation centered not on what we could teach, but on what they already knew: their deep understanding of local vulnerabilities, patient habits, and existing barriers. Together, we conducted a needs assessment to identify the most pressing concerns. Three categories

- 1. Policy and infrastructure gaps, like the lack of reliable electricity during disasters.
- 2. Personal needs, such as insufficient preparation for hurricane season.
- 3. Environmental challenges, especially extreme heat events.

Using these findings, we co-designed an outreach activity grounded in Module 1 of the MCN's Support Curriculum for Health Service Providers — focused on understanding extreme weather-related events and strengthening response capacity. My colleague Héctor Méndez, who was focused on working with the health center's community on Module 5 on occupational health, and I

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When the Heat Rises: Lessons from Yabucoa

By Héctor J. Méndez Hernández, MPH

Héctor Méndez Hernández holds a Master of Public Health in Environmental Health from the University of Puerto Rico, Medical Sciences Campus. He joined MCN as a public health practicum student.

n the southeastern coastal town of Yabucoa, summer high temperatures are arriving earlier, lasting longer, and weighing heavier on those who can least afford protection: agricultural workers. Yabucoa's fertile valley has shifted over time from primarily sugar cane to a diversified agricultural economy, including plantains, bananas, root and tuber crops, vegetables, melons, and much more. Announcements of a new rum company promise to return acreage to its sugar cane origins with a modern approach, including intercropping to improve soil health. All of this economic output is dependent on a large and aging agricultural worker population that is contending with hotter work days. When I arrived in Yabucoa this past June, the air was thick and still, the kind of heat that silences a room. Yet, as I walked into the waiting area of COSSMA, the community health center serving the region, there was conversation and laughter. Patients greeted the staff by name. Even in discomfort, there was warmth, a reminder that health centers are often the heart of the

As part of my graduate practice experience through Migrant Clinicians Network's (MCN) project titled Building Capacity Among Community Health Centers to Address Weather-Related Extreme Phenomena on Agricultural Communities and Workers in Puerto Rico and the US Virgin Islands, I partnered with COSSMA's team to bring attention to the growing occupational and environmental risks of extreme heat. My assigned focus was on Module 5: Occupational Health During Extreme Climate Events, on the Support Curriculum for Health Service Providers, which explores the relationship between work, environment, and well-being, especially for agricultural and outdoor workers.

A Setting Still Recovering

Yabucoa was the first municipality hit by Hurricane María in 2017 and one of the last to have electricity restored. The storm changed more than its landscape — it altered the community's sense of safety. The fields that once symbolized sustenance also came to represent vulnerability.

Nearly eight years later, that vulnerability persists. Heat waves and blackouts now intersect with chronic health issues like hypertension, diabetes, and asthma, forming a complex web of risks. When I sat with COSSMA's outreach educators, they shared



Gabriela M. Avilés Piñeiro and Héctor J. Méndez Hernández (standing, at right) provided trainings in the waiting areas of COSSMA, a community health center in the Yabucoa region of Puerto Rico.

what they see daily: patients who skip appointments during high-heat days because transportation becomes unbearable, or workers who keep laboring under the sun without proper hydration because "it's always been like this," when, in reality, it hasn't.

Turning a Waiting Room into a Learning Space

Our activity took place in June, in the main waiting area of the Yabucoa clinic, where health education blends seamlessly with check-ins and consultations. With support from fellow student Gabriela Avilés and COSSMA's educators, we transformed the space into a brief, informal classroom.

The setup was simple: a small presentation projected onto a wall, colorful visuals, and a conversational tone. We discussed the signs of heat exhaustion, ways to prevent dehydration, and practical tips for keeping medicines safe during blackouts. What mattered most was keeping the language clear, relevant, and rooted in the community's daily experience.

As the presentation went on, patients began sharing their own strategies — placing damp towels on their heads, keeping buckets of water near the door in case of outages, or checking in on neighbors living alone. Their comments turned the session into a dialogue. The expertise in that room didn't just come from the PowerPoint, it came from lived experience.

One woman raised her hand and asked how to keep insulin cool when the power goes out. Another wanted to know how to reduce indoor heat in a zinc-roof home. Their questions reminded me that adaptation begins not with data, but with people trying to solve problems in real time.

Lessons from the Field

Throughout this experience, I learned that community health outreach isn't about bringing answers — it's about creating shared understanding. The role of technical partners like MCN is not to instruct, but to accompany, offering evidence-based tools that CHCs can adapt to their context.

COSSMA's staff already knew the challenges. What they needed was time, space, and resources to frame them within a broader conversation about disasters and health. With MCN's help, we connected local wisdom with technical guidance.

After the presentation, one participant approached me and said, "I never realized that feeling dizzy in the heat could be dangerous. Now I'll know what to look for." That small comment carried the weight of success, a sign that awareness had turned into action.

Being part of this effort filled me with deep pride, to witness how, even after years of recovery from María and despite limited resources, the community in Yabucoa continues to rise with dignity, care, and hope through its own health center. What moved me most was seeing how this agricultural community came together — patients, clinicians, and students — to create something that truly embodied integrated, compassionate care.

■ Planting Seeds on Fragile Ground continued from page 8

Department of Agriculture that seeks to strengthen what our communities have already begun with a community-focused curriculum for health center staff on emergency preparedness called Support Curriculum for Health Service Providers. Designed to support clinicians and their communities in Puerto Rico and the US Virgin Islands, this curriculum facilitates the navigation and use of resources and tools for all populations that have been developed by MCN or other organizations. This curriculum, composed of seven modules, covers topics such as sustainable agriculture, health

and disasters, and advocacy and community leadership, and offers tools for diverse populations such as children, older adults, agricultural workers, and patients with chronic illnesses who live and experience natural disasters in their region.

This year, this curriculum was implemented by six health centers in the Caribbean, reaching more than 1,200 people. In collaboration with students from the University of Puerto Rico, we are presenting each of the curriculum modules along with best practices and lessons learned from their use and implementation in four health centers in Puerto Rico. In

this edition of Streamline, we offer the first two articles of the series. More will be published in upcoming editions.

We invite you to follow this series and explore the Support Curriculum for Health Service Providers, available for download on the MCN website, in English and Spanish. Visit https://www.migrantclinician.org/ resource/building-capacity-among-communityhealth-centers-address-weather-relatedextreme-phenomena to learn more and access the materials.

■ Equipping Communities to Prepare for Disaster, from the Health Center Out continued from page 9

joined forces to develop an interactive educational session for the community.

We held the activity on June 17, in the waiting area of COSSMA's Yabucoa clinic. Patients sat shoulder to shoulder, waiting for appointments, some with their children or elderly parents. As we set up the presentation, we projected a short slideshow explaining how extreme heat affects the body, how to stay safe, and how to prepare for power outages.

After the talk, we distributed MCN's bilinqual educational materials on heat safety, hurricane preparedness, and energy resilience. In the pediatric waiting area, we also shared a coloring book about gardens and extreme weather, a simple but powerful tool to start conversations about environment and health at home.

Listening Between the Lines

What made this activity meaningful wasn't just the content — it was the dialogue that followed. People didn't hold back. A woman caring for her bedridden father shared her struggle to keep him cool during Saharan dust events - here in Puerto Rico, dust from the far-off African desert reaches the Caribbean during the hottest summer and early fall months. Another patient, living in a zinc-roof home, which is common across Puerto Rico, spoke about the unbearable indoor temperatures during summer.

Their stories underscored what we already suspected: that health education cannot be one-size-fits-all. Each conversation revealed how environmental risks intertwine with daily realities like poverty, chronic illness, aging infrastructure, and isolation.

One moment that stayed with me came when a health educator joined us to counsel a patient with diabetes and hypertension. As she guided him through using a blood pressure monitor, she seamlessly wove in messages from our heat-safety session: stay hydrated, avoid peak-hour heat, monitor symptoms closely. It was a clear example of how CHC staff translate training into com-



munity-resonant care.

From Awareness to Action

What struck me most was the trust that existed between patients and the COSSMA team. People greeted educators with warmth and gratitude. You could sense the bond, one built on years of listening and shared struggle. It reminded me that CHCs are not external actors parachuting in with solutions; they are part of the social fabric of their communities.

Through this collaboration, I learned that technical assistance doesn't mean instruction; it means accompaniment. Our role as students and public health professionals is to offer tools, training, and space for reflection that CHC teams can adapt and make their

The experience reaffirmed that impactful outreach doesn't always require big budgets or high-tech resources. Sometimes, it starts with a single conversation in a waiting room, and the willingness to listen.

Continuing the Work

Puerto Rico's future is uncertain, but the path toward extreme weather preparation is already being charted through local leadership. The COSSMA team continues to integrate disaster-health education into their outreach, and MCN remains committed to

supporting this work with practical, evidence-based tools.

Projects like this demonstrate that good community preparation isn't imported; it's cultivated locally, through relationships of trust, care, and shared purpose. Seeing the Yabucoa community receive this kind of care, even amid so many challenges, reminded us that, even in the midst of loss, solidarity always blooms in our archipelago. It was a reminder that public health is also built from the heart.

Resources:

Download MCN's curriculum on environmental health and emergency preparedness, Support Curriculum for Health Service Providers in English and Spanish, visit: https://www.migrantclinician.org/resource/ building-capacity-among-community-healthcenters-address-weather-related-extremephenomena

Access all of MCN's resources and articles on disaster preparedness: https://www.migrant clinician.org/our-work-environmental-andworker-health/disaster-preparedness.html

Visit MCN's Environmental Education page: https://www.migrantclinician.org/ explore-environmental-and-worker-health/ environmental-education.html

All the resource links and references mentioned in this issue are available at https://www.migrantclinician.org/ streamline/2025/fall or point your phone's camera to the QR code.





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Migrant Clinicians Network

P.O. Box 164285
Austin, Texas, 78716
Phone: (512) 327-2017
www.migrantclinician.org
E-mail: mcn@migrantclinician.org

Carmen M. Vélez Vega, PhD, MSW

Chair, MCN Board of Directors

Kim Nolte, MPH

Chief Executive Officer

Claire Hutkins Seda

Director of Communications, Managing Editor

calendar

December 3-5, 2025 Agricultural Worker Health Fall Symposium

National Center for Farmworker Health Phoenix, Arizona https://www.ncfh.org/symposia/

December 3-5, 2025 Partners for Advancing Health Equity Summit

Montgomery, AL https://bit.ly/P4HE25Summit

December 7-10, 2025 IHI Forum

Institute for Healthcare Improvement
Anaheim, California
https://www.ihi.org/education/conferences/ihi-forum

December 9, 2025 Integrating Mental Health into Primary Care

Migrant Clinicians Network
Online Webinar
https://www.migrantclinician.org/webinars/upcoming

January 29, 2025 Understanding Congenital Syphilis in Newborns

Migrant Clinicians Network
Online Webinar
https://www.migrantclinician.org/webinars/upcoming

February 9-12, 2026 Policy & Issues Forum

National Association of Community Health Centers Washington, DC https://www.nachc.org/conferences