MIGRANT CLINICIANS NETWORK
MCN
streamline
Volume 31, Issue 1
Spring/Summer 2025

Photo credit: Earl Dotter

Benefits of CHW Education using Learning Collaboratives: Diabetes ECHO as a Model

By Claire Hutkins Seda, Director of Communications, and Martha Alvarado, Manager of Online Education, MCN

Community Health Workers (CHWs) are critical clinical team members who act as a liaison between a health center or other site of health care provision, and communities with shared backgrounds who are served by that health center. Also called *promotoras* or *promotores de salud*, health promoters, or outreach educators, CHWs can translate clinical information, like preventative care, into appropriate non-technical messages tailored for the community.

CHWs are also community leaders and change agents. Health center staff can more easily learn of values and practices related to health, and changes in the demographics, needs, or perspectives of the community when they have a CHW on the ground. This trusted link between the health center and the community can prove vital during emergencies or other periods of uncertainty when trust can increase the likelihood of the effective distribution of information and resources.

However, unlike other members of the care team, CHWs do not have a nationally standardized education or training, which complicates efforts to assess their overall impact. This lack of standardization hinders concrete analysis, as individual studies on CHWs are not comparable, given that each study may feature CHWs with different educational backgrounds.[1] Additionally, each health center integrates CHWs in different ways into their clinical care team; health sites with excellent integration, education, and support of CHWs likely experience higher rates of desired outcomes.[2] Despite these inconsistencies, many studies on CHW utilization point to improved health behaviors, better health outcomes, and reduced costs, indicating that despite the various CHW models in place, CHWs consistently positively impact their communities. Given that they often support migratory and seasonal agricultural workers (MSAWs) and their families, CHW integration is highly recommended.

To support the integration of CHWs and ensure high-quality in-depth education specifically designed for CHWs, Migrant Clinicians Network (MCN) offers year-round educational opportunities and support via virtual communities of learning available in Spanish and English. Many CHWs working in Spanish-speaking communities are first-language Spanish speakers themselves. Most struggle to

continued on page 2

What Is ECHO?

Project ECHO is a learning framework developed by the University of New Mexico that has been used around the world to support training in health care. Project ECHO, which stands for "Extension for Community Healthcare Outcomes," augments typical virtual learning by giving health care providers direct access to subject matter experts, with a focus on brief lectures, case-based learning, and sharing of promising practices. "Even with the best technology, webinars don't always provide close connection. It's the connection, the learning from each other, that is the core of ECHO and MCN's approach to communities of learning," explained Alma Galván, MHC, Director of Community Training and Engagement for MCN. See how other organizations are using the ECHO model: https://projectecho.unm.edu/ model/.

 continued from page 1

find training and education tailored to their educational needs and preferences, and the health needs and language preferences of their communities. Further complicating their education, many – particularly those serving MSAWs – live in highly rural areas with few options for connection and mentoring. MCN's small-group learning sessions, including our popular six-week Diabetes ECHO series, give CHWs the information, resources, examples, networking or network connections, and tools in their preferred language. (See sidebar, "What Is ECHO?" on page one.) During these communities of learning, CHWs benefit from connection with other CHWs and promising practice sharing, access to experts in their fields, and materials in various literacy levels. Materials and training in their language remove the need for translation and reduce the possibility of miscommunication or misunderstandings on core health concepts. Additionally, MCN augments the ECHO model to include participatory evaluation, regularly adjusting the trainings in response to the expressed needs of the cohort. As a result of this broad support, CHWs in MCN communities of learning show a significant self-reported increase in understanding of key areas around diabetes management, control, treatment, and prevention for communities like Spanish-speaking MSAWs. The 2024 cohort of the MCN Diabetes ECHO is an example of effective CHW education and training.

In 2024, MCN provided the six-session Diabetes ECHO series for the seventh consecutive year. The series topics included: diabetes type 2 general information, nutrition and diabetes, mental health and diabetes, treatments and medications for diabetes, and community involvement and education. From over 100 applicants, 31 individuals were accepted and 26 comprised the final group. About 78% of participants indicated that Spanish was their first language. Educational attainment and age were extremely diverse. Most had been in their current position for between one and five years. Participants were from across the United States, from Washington State to Florida. Several joined from Puerto Rico.

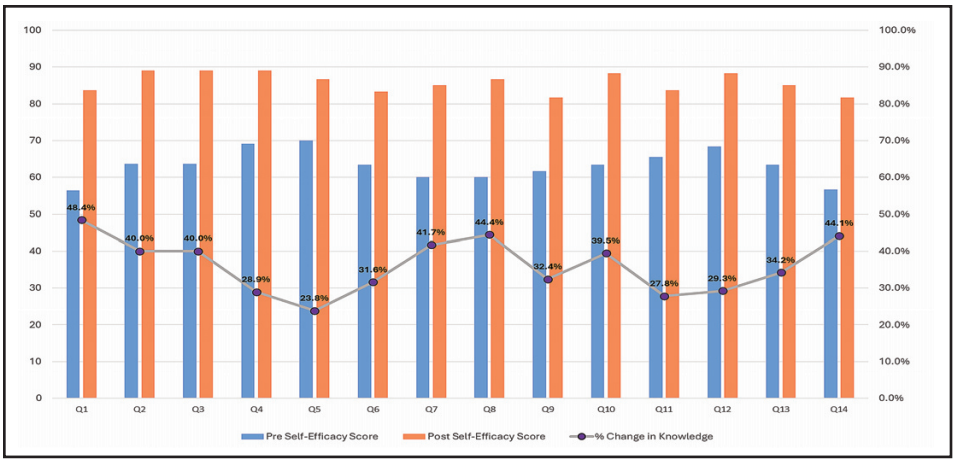
To gauge the effectiveness of the trainings, MCN asked participants to submit a pre- and post-training self-efficacy questionnaire. The questions revolved around the gain of knowledge, confidence, or ability for a variety of practices that are conducive to successful diabetes self-management. Participants were given access to the online questionnaire upon the conclusion of the six-part series. They were asked to think retrospectively about their abilities, knowledge, or skills, both prior to participating in the series and after they had participated in the series. Scoring for each question was based on a 1 to 5 Likert scale. Questions assessed the CHW participants' knowledge on explaining to patients how behaviors or habits can cause diabetes, ability to help patients establish an exercise routine, analyze with patients the benefits of a healthy diet and give appropriate advice, recognize acute complications of diabetes, and more.

Increases in knowledge were indicated by participants across all 14 questions. Highest rates of change were seen in ability to obtain the general medical history of patients (48% increase), with a total of six questions out of 14 showing an increase in knowledge of at least 40%. The overall reported increase in knowledge was 36.2%.

Every year, MCN receives hundreds more applicants for our Diabetes ECHO series than can be accommodated in the small 30-person community of learning. "Our clinical network of support staff, including CHWs/*promotores de salud*, are often hard pressed to find education around type 2 diabetes in Spanish that addresses the specific needs of their patient population, i.e. Spanish-speaking workers and/or MSAWs who may move from location to location for purposes of work," said Martha Alvarado, Manager of Online Education for MCN.

Based on the popularity of our Diabetes ECHO series, and the expressed need of our constituents, MCN developed a shorter four-session series on Type 2 diabetes, which opened to more individuals, that addressed the most popular diabetes self-management topics, including nutrition and mental health.

You can watch all four sessions, provided in Spanish, and newly archived on our website: https://www.migrantclinician.org/es/webinar/el-papel-de-los-promotores-de-salud-en-la-educacion-y-el-automanejo-de-la-diabetes ■



Diabetes ECHO Participants' Pre- and Post-training Changes in Knowledge

Citations:

1 Pinto D, Carroll-Scott A, Christmas T, Heidig M, Turchi R. Community health workers: improving population health through integration into healthcare systems. *Curr Opin Pediatr.* 2020;32(5):674-682. doi:10.1097/MOP.0000000000000940

2 McCarville E, Martin MA, Pratap P, Pinsker E, Seweryn SM, Peters KE. Understanding critical factors associated with integration of community health workers into health and hospital systems. *J Interprof Care.* 2024;38(3):507-516. doi:10.1080/13561820.2023.2183183

Diabetes Among MSAWs

In 2023, the American Diabetes Association surveyed 16,913 MSAWs. Age-adjusted self-reported diabetes prevalence was at 10.8% among MSAWs with stable households and even higher, at 13.51%, among MSAWs who move to follow harvests. Importantly, the study noted that MSAWs who move for the harvest and did not recently access health care "had 83% lower odds of reporting known diabetes." As the diabetes diagnosis was self-reported rather than clinically validated, this result suggests that many mobile workers with poor health care access are unaware they have diabetes, the authors concluded. The authors of the survey also noted that newly arrived MSAWs who are foreign-born may be healthier than those who have lived full-time in the US for longer periods of time, and that farm work may select for fitter individuals given the "grueling manual labor" – both factors may possibly contribute to a lower true diabetes prevalence. Without a clinical screening to measure blood sugars in participants, the true burden of diabetes among workers remains unclear.

Citation

Olson RM, Nolan CP, Limaye N, Osei M, Palazuelos D. National Prevalence of Diabetes and Barriers to Care Among U.S. Farmworkers and Association With Migrant Worker Status. *Diabetes Care.* 2023;46(12):2188-2192. doi:10.2337/dc23-0960

A plate of food served to participants of the Salud en tu plato program.

Salud en tu plato:

Addressing Chronic Disease through An Intensive Diet Intervention

By Claire Hutkins Seda, Director of Communications, MCN

Evidence is mounting on the effects of a whole-foods plant-based (WFPB) diet on overall chronic disease prevention and reversal. Among migratory and seasonal agricultural worker (MSAW) communities – where access to clinical care may be limited when they leave the service area for seasonal work, or because of lack of transportation, language, cost, or a lack of familiarity with the health system – a dietary overhaul can be an important and lifesaving intervention. Several of the leading causes of disability and death among MSAW communities and the US overall, including cardiovascular disease, type 2 diabetes, and certain cancers, are highly correlated to diet – and patients have an opportunity to make healthy choices at least three times a day at mealtime. *Salud en tu plato*, a diet intervention in the agricultural community of Watsonville, California, is showing that even a short-term change can help participants feel better and begin to envision better health. While the intervention is just two weeks, many continue month after month. And even the short-term participants find benefit: 90% of participants score high on readiness to continue, and 99% of participants show improvement in at least one biomarker after the two weeks.

"People do not like taking medications," explained Maria Jose Hummel, PhD, MPH, program coordinator for *Salud en tu plato*, which is operated by the nonprofit Eat for the Earth. During the intervention, participants already start to feel better, with more energy and fewer aches, but "once you start telling them that this is something that can help them lower the dose of their medication," their interest in following the diet long term increases. With dietary consistency after the intervention, "we've had some of our participants who have been able to get off their medications in a safe manner," always under the supervision of their primary care provider, she noted. "They're thriving without the need for the medication – and that appeals to people…. [They become] hopefully not so dependent on something that they may not have access to, especially if they don't have insurance or can't afford medication."

Participants and their family members watch videos on making healthy plant-based meals while waiting to consult with a clinician.

On a sunny Sunday in February, 26 locals waited to get their vitals read in a small community room at Salud para la Gente, a community health center in Watsonville that has partnered with the nonprofit. While the patients filled intake forms, videos of Hummel introducing healthy foods in Spanish while preparing WFPB meals and snacks like black bean brownies played on a large television. Many participants had been referred to the intervention by their primary care provider or a health coach at Salud para la Gente. Others arrived by word of mouth – friends, fellow churchgoers, or family members of former participants and volunteers, or people who ran into *Salud en tu plato* at a health fair. At least three in this cohort were repeat attendees, people who choose to do the intervention month after month.

The three-Sunday class starts with the introductory class, where volunteer clinicians take fasted participants' glucose, LDL/HDL/non-HDL cholesterol, triglycerides, blood pressure, body weight, and BMI. Immediately after their lipid panel is taken, patients are encouraged to go to the next room in the health center, where Beth Love, the founder of Eat for the Earth, the nonprofit that sponsors *Salud en tu plato*, has been cooking all morning. On the first Sunday, participants had a sugar-free granola with fresh fruit and plant-based milk, a no-salt tofu scramble, mixed oil-free sauteed vegetables, posole, a "three sisters" vegetable stew, and lots of toppings, like cilantro, red onion, jalapenos, avocado, and *pepitas*, or pumpkin seeds. After eating, participants are individually counseled on their lipid panel results and the plant-based diet they are to pursue by either Hummel or Martha Sandoval, MD, the program's medical director, who volunteers her time for the intervention, and who herself refers patients to the program.

When they return home, they begin to receive daily texts from Hummel in Spanish. The text has a link to a video. "Even people who don't know how to read can click on a link," she noted. The videos are professionally produced by a partner organization, providing information and recipes, or a cooking demonstration. Hummel also sends more

continued on page 4

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 $1,204,180.00 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.

 continued from page 3

information, recipes, and resources. Additionally, she calls each individual at least once to do a one-on-one check-in. Many send back photos of their plates – nopalito tacos with beans and pico de gallo, a lentil burger, breakfast oats with berries.

When they return on the second Sunday, Hummel teaches a class in Spanish about the mechanisms of heart disease, diabetes, and hypertension, and the way the WFPB diet they are pursuing in the intervention counteracts each health concern. She also answers more questions, and Love provides an "anti-inflammatory" green smoothie with printed-out recipes for participants to try at home.

On the last Sunday, participants return in a fasted state once more to see the results of the two-week intervention on their health numbers. Close to every participant will have improvement in one biomarker. "If we take care of diet, it will help with your blood pressure, with your LDL cholesterol – which is one measure that drops the fastest with our program. Our average is [a drop of] over 20%" in those two weeks, Hummel said. "Statins aren't even going to do that." Total cholesterol and fasting glucose see large drops as well. "it's all connected, and once [participants] see that, they are motivated to do this on their own – nobody has to force them. I'm not a food cop. I'm not going to go into your house and tell you what to do. It's your own choice, but these are the benefits."

On that final day, food is once again a major component, with participants breaking their fast with oil- , butter-, and sugar-free apple and oat breakfast bars, fresh fruit, tacos with tempeh and kale, and a hearty bean soup that was topped with salsa verde, pico de gallo, herbs, and spices.

"One of the reasons people were open to trying our food was because a lot of them have a daughter or son who is vegan, and they say, 'I don't know what to make for them' – and, of course, the other reason is, 'my doctor told me I have to change my

continued on next page

Suggested Dietary Parameters: What Are Participants Recommended to Eat (And Not Eat)?

The intervention promotes a whole-foods plant-based diet where participants eliminate meat, dairy, eggs, and processed foods, and greatly minimize or eliminate added sugars, added fats and oils, and added salts. Recipes provided are focused on whole grains, beans and legumes, vegetables, fruits, herbs, and spices.

Salud en tu plato encourages participants to fill up their plates with one-quarter of a whole grain like corn tortillas, brown rice, quinoa, or hominy; one-quarter plant-based protein like pinto beans, lentils, chickpeas, tofu, or tempeh; and one-half vegetables like vegetable soup, green salad, sauteed broccoli, kale and mushroom stir fry.

Why Whole-Foods Plant-Based?

For decades, *population studies* like the Adventist Health Study 1 and 2, the Nurses' Health Study, and the China Study have shown that plant-based diets are beneficial to lower one's risk of heart disease, diabetes, and certain cancers when followed consistently over time. As more population studies come out, one can rely on "studies of the studies" – reviews or meta-analyses -- to see what many of these studies have concluded over time. A 2024 umbrella review of 48 reviews and meta-analyses on animal-free diets among hundreds of thousands of participants between 2000 and 2023 published in PLOS One concluded that "vegetarian and vegan diets appear to significantly improve the metabolic profile through the reduction of total and LDL cholesterol, fasting blood glucose and HbA1c, and are associated with lower body weight/BMI, as well as reduced levels of inflammation," although it noted that the effect on HDL cholesterol, triglycerides, blood pressure, and ApoB was less clear. The diets included in the studies, it should be noted, were not necessarily the whole-food plant-based diet that *Salud en tu plato* recommends, but any diet that did not include some or all animal products. The authors remarked that "in the majority of the cases, people adopting plant-based diets are more prone to engage in healthy lifestyles that include regular physical activity, reduction/avoidance of sugar-sweetened beverages, alcohol and tobacco," which may further complicate the findings. The studies further showed the diet led to a lower risk of ischemic heart disease, gastrointestinal cancer, and mortality from cardiovascular disease.

Many *randomized controlled trials* point to the immediate influence of the diet on health, as *Salud en tu plato* does. A 2006 trial compared a low-fat plant-based diet with a diet based on American Diabetes Association guidelines. Those adhering to the plant-based diet saw A1c levels drop by 1.23 points, compared to 0.38 points on the ADA diet.[1] The first randomized control trial showing how a low-fat vegetarian diet reverses heart disease was first published in *The Lancet* in 1990.[2] The resulting diet, the Ornish Diet, paired with exercise and stress management, has evidence that it reduces risk of prostate cancer, diabetes, and heart disease; the findings of a new trial show the program may also improve cognition and function in patients with early-stage Alzheimer's disease.[3] The lifestyle program – the whole-foods, plant-based diet with exercise and stress management – is now reimbursable by Medicare under the Intensive Cardiac Rehabilitation category.[4] Many insurance companies including Blue Shield of California and Aetna also cover the program.

Citations

1 Barnard ND, Cohen J, Jenkins DJ, et al. A low-fat vegan diet improves glycemic control and cardiovascular risk factors in a randomized clinical trial in individuals with type 2 diabetes. Diabetes Care. 2006 Aug;29(8):1777–83. doi: 10.2337/dc06-0606.

2 Ornish D, Brown SE, Scherwitz LW, Billings JH, Armstrong WT, Ports TA, McLanahan SM, Kirkeeide RL, Brand RJ, Gould KL. Can lifestyle changes reverse coronary heart disease? The Lifestyle Heart Trial. Lancet. 1990 Jul 21;336(8708):129-33. doi: 10.1016/0140-6736(90)91656-u. PMID: 1973470.

3 Preventative Medicine Research Institute. Website. Available at: https://pmri.org/

4 https://www.cms.gov/medicare-coverage-database/view/ncacal-decision-memo.aspx?proposed=N&NCAId=240&NcaName=Intensive+Cardiac+Rehabilitation+%28ICR%29+Program+-+Dr.+Ornish

 continued from page 4

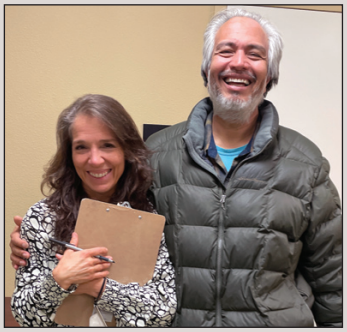
diet.' So they were open. And that's a shift I've seen in the last two years -- people have changed their mentality about eating a plant-based diet," Hummel said. For the Watsonville community, the dietary shift may be easier than for other communities. Traditional foods like tacos with beans and salsas can easily conform to the diet. "For [participants with ancestors from] parts of Central America and Mexico, their ancestors were very tied to the earth, eating foods in their more natural states," Hummel noted. "So this is something that at some level [participants] can relate to." Hummel and Love provide ample recipes of familiar meals, made entirely of plants, low in sodium, and without added oil, or sugar.

Salud en tu plato began when Love envisioned a partnership with health care providers to support patients with chronic disease through plants. Eat for the Earth offered a pilot of the program, initially in English with Spanish interpretation, on an organic farm that was not on a bus line. Eat for the Earth then secured a grant from the county and city of Santa Cruz to reach the communities in the county with the highest burden of health issues; with that funding, Love brought in Hummel so the intervention could be tailored for the Watsonville community. Hummel and Love moved the classes from Saturday to Sunday, in recognition that most in the MSAW community worked six days a week. Hummel also began using text instead of email, because Hummel has found that most participants, particularly older Spanish-speaking participants, who is the largest segment of participants in the intervention, respond to texts better than to email. They also began a partnership with the health center, moving the classes to a familiar and easy-to-access central location, and offering the intervention in Spanish. Love encourages other health centers to make similar partnerships with community organizations, given time and finance constraints. "[Clinicians] aren't going to be able to spend the time with patients to get them this information, so you have to look for people in your community" to make interventions like this happen, she said.

The intervention now has over two years of results. From June 2022 to June 2024, the average drop in total cholesterol was over 12.5%, and the average drop in LDL cholesterol was over 21%. They also saw smaller but still notable decreases in fasting glucose, triglycerides, blood pressure, weight, and BMI. "This is among all participants, regardless of dietary compliance," Love clarified. "In our observation, those who follow the dietary parameters most closely generally have the best results. Among participants who are compliant, we have had many people go from really high measures into normal and even optimal ranges." Because level of compliance to the diet is self reported, it is difficult to make definitive conclusions on the efficacy of the diet. Nonetheless, such drops without drug interventions and on such a short timeframe are noteworthy. ■

In Their Own Words...

Participants to the intervention in February included Arturo, who had originally come to the intervention with his 87-year-old mother in December 2023. Her physician had recommended that she attend. Given that she is low mobility and that Arturo, as her caretaker, does all the cooking, he joined her. The duo was disappointed that her lipid panel did not show significant change during their first attempt, despite implementing the diet changes – but instead of giving up, they came back to attempt it again the following month – and then the month after that. Arturo and his mother have now attended the class almost every month for well over a year. After six months, his mother's physician took her off of her cholesterol medication because she no longer needed it. A few months later, she was taken off of her blood pressure medication – which she had been taking for 40 years. Her mobility increased: "She [had previously experienced] aches and pains in her knees, and she couldn't walk anymore. We went for a walk yesterday, and we went about eight blocks. This program has been night and day. I'm surprised we don't have a line to the plaza," Arturo said.



Maria Jose Hummel, PhD, MPH (left) speaking with a participant who has joined the program for many months.

Arturo, as the caretaker, was not officially part of the program, but he, too, has benefited. He was on two statins, both of which he is no longer on. He has lost significant weight, and he says that he has more energy. When he started the program, he said, "I really loved the way I felt – the energy level!" That has been his motivation to keep going. On the last Sunday, his blood pressure reading was 106/73.

Another participant, Jose, came to his intervention for high blood sugar and hypertension. When asked if the extreme nature of the diet – particularly removing salt, sugar, and oil – was difficult, he shook his head. "Well, [not having] sugar was a little more difficult, but, really, it's not that complicated. And it helped me a lot." He noted, "I have a lot more energy, I feel better, and I want to continue." Jose's blood pressure dropped from 151/98 to 146/95 and he lost 8.4 pounds over the course of the intervention.

Carmen, a new participant, thought that not using salt was the bigger challenge, and she admitted that she did eat some things with a little bit of salt, but she says the intervention was effective nonetheless: "I have more energy, my knee stopped hurting when I walk. I would like to continue. My son, he said he's going to change, he said he won't eat fried potatoes anymore. My husband – he says, 'Every day we have to eat this silage like a cow?' But he's doing it, too! It really makes us all feel better, eating this way." Her triglycerides had dropped from 233 to 130 over the course of the two weeks.

"The knowledge that this works, that food can be medicine, to me, that's really powerful," Hummel said. "And they're letting other people know." Hummel notes that people return to repeat the program with a cousin, a brother, a neighbor, because people feel better and want to share the program – and the ideas spread.

Resources: Learn More

Eat for the Earth hosts an annual conference, Food as Medicine, in October 2025 in Santa Cruz, California. CMEs are available. www.foodasmedicinesantacruz.org.

Viva Longevity! interviewed participants and followed Hummel while she counselled participants when they received their results after two weeks. Watch the video at: https://youtu.be/XJBtRwUD3a4?si=UpqVrES_-Dx2LMs1

Salud Para Hoy, Hummel's website, offers free recipes and videos, information, as well as her books for purchase, in Spanish. www.saludparahoy.com

Depression among Migratory and Seasonal Agricultural Workers: Does Pesticide Exposure Contribute?

By Claire Hutkins Seda, Director of Communications, MCN

Depression is characterized by sadness, emptiness, and/or an irritable mood, along with cognitive or sleep pattern changes that affect an individual's ability to function normally.[1] Among US migratory and seasonal agricultural workers (MSAWs), depression appears widespread, although estimates vary and more studies need to be conducted. A 2013 study of 200 mobile workers found that 45.8% were depressed, while a meta-analysis concluded that overall prevalence of depression among mobile workers was 26% although individual studies showed significant variation.[2,3] Additionally, people in families with the lowest income levels, regardless of occupation, have higher depression prevalence;[4] MSAW families often live below the poverty line. Depression is not just a mental health concern; depression affects physical and cognitive functioning, and is linked to cardiovascular disease,[5] memory decline,[6] and nervous, immune, and digestive system impacts.[7]

The causes of depression are complex and various, including social and biological factors, from hormonal changes to life stress to living in poverty to living with chronic illness. What specific factors relating to farm work increases the risk of depression among MSAWs? Recent interviews with farmers in Georgia, for example, found that financial factors, work-life balance, physical health, and disconnect from non-farming populations were each compounding stressors. Farmers felt misperceived by their community and a lack of control on external factors.[8] With fewer studies on MSAWs, it is unclear how many of these stressors overlap.

Among MSAWs, an added component may be exposure to pesticides. A 2023 meta-analysis and systematic review published in the *Journal of Agromedicine* found a significant positive association between pesticide poisoning and depression, although the study also found a non-significant positive association between pesticide use and depression.[9] Another global systematic review in 2023 focused on farmers and MSAWs similarly found that previous pesticide poisoning increased the risk of depression, compared to chronic pesticide exposure, and that severe and/or repeated pesticide poisonings increased risk of depression compared to mild exposures.[10]

The mechanisms by which pesticide poisonings increase risk of depression are several. A 2024 study in *Toxicology* found that inflammation, oxidative distress, and lower educational levels may be associated with depression among rural workers who were exposed to pesticides. The authors also noted that the underutilization of personal protective equipment increases the risk of exposure and can be an important safety measure.[11] The troubling experience of pesticide exposure is another factor that may contribute to the link between pesticide poisonings and depression. In a recent MCN webinar, "Diagnosis and Management of Pesticide-Related Illness," the first in the three-part How to Prevent Pesticide Poisoning in Farmworkers series, Brett Shannon, MD, PhD noted that "it's really important to consider that exposure to pesticides, and exposure to any other work hazards, is…for many workers… something that could potentially kill them, it's something that's very scary for them, and you [should] consider examining their mental health during and after the incident."[12]

The increased number of high heat days may be another risk factor. MSAWs are highly exposed to extreme heat, and increased heat and extreme temperatures raise the incidence of changes in mental health outcomes; for example, heat waves

continued on page 11

Citations

1 Chand SP, Arif H. Depression. In: *StatPearls*. Treasure Island (FL): StatPearls Publishing; July 17, 2023. https://www.ncbi.nlm.nih.gov/books/NBK430847/

2 Ramos AK, Su D, Lander L, Rivera R. Stress Factors Contributing to Depression Among Latino Migrant Farmworkers in Nebraska. *J Immigr Minor Health*. 2015;17(6):1627-1634. doi:10.1007/s10903-015-0201-5

3 Hagen BNM, Winder CB, Wootten J, McMullen CK, Jones-Bitton A. A Systematic Review and Meta-Analysis of Depression among Farming Populations Worldwide. *Int J Environ Res Public Health*. 2020;17(24):9376. Published 2020 Dec 15. doi:10.3390/ijerph17249376

4 Brody DJ, Hughes JP. Depression prevalence in adolescents and adults: United States, August 2021–August 2023. 2025 Apr; (527)1–11. DOI: https://dx.doi.org/10.15620/cdc/174579

5 Kwapong YA, Boakye E, Khan SS, et al. Association of Depression and Poor Mental Health With Cardiovascular Disease and Suboptimal Cardiovascular Health Among Young Adults in the United States. *J Am Heart Assoc*. 2023;12(3):e028332. doi:10.1161/JAHA.122.028332

6 Yin J, John A, Cadar D. Bidirectional Associations of Depressive Symptoms and Cognitive Function Over Time. *JAMA Netw Open*. 2024;7(6):e2416305. Published 2024 Jun 3. doi:10.1001/jamanetworkopen.2024.16305

7 Pietrangelo A. The Effects of Depression on Your Body. *Healthline*. Updated 5 July 2025. https://www.healthline.com/health/depression/effects-on-body

8 Proctor C, Hopkins N. Stressors and Coping Strategies in Rural Farmers: A Qualitative Study. *J Agromedicine*. 2023 Jul;28(3):415-424. doi: 10.1080/1059924X.2023.2173691. Epub 2023 Feb 6. PMID: 36702813.

9 Frengidou E, Galanis P, Malesios C. Pesticide Exposure or Pesticide Poisoning and the Risk of Depression in Agricultural Populations: A Systematic Review and Meta-Analysis. *J Agromedicine*. 2024;29(1):91-105. doi:10.1080/1059924X.2023.2278801

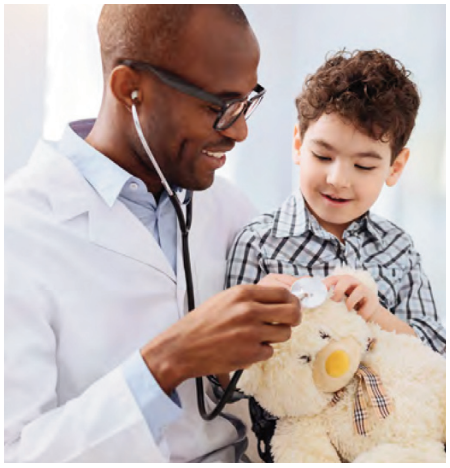
10 Zanchi MM, Marins K, Zamoner A. Could pesticide exposure be implicated in the high incidence rates of depression, anxiety and suicide in farmers? A systematic review. *Environ Pollut*. 2023;331(Pt 2):121888. doi:10.1016/j.envpol.2023.121888

11 Zanchi, M. M., Marafon, F., Marins, K., Bagatini, M. D., & Zamoner, A. (2024). Redox imbalance and inflammation: A link to depression risk in brazilian pesticide-exposed farmers. *Toxicology*, 501, 153706. https://doi.org/10.1016/j.tox.2023.153706

12 How to Prevent Pesticide Poisoning in Farmworkers. Migrant Clinicians Network. Archived webinar, 1 October 2024. Available at: https://www.migrantclinician.org/webinar/diagnosis-and-management-pesticide-related-illness-how-prevent-pesticide-poisoning

13 Thompson R, Lawrance EL, Roberts LF, et al. Ambient temperature and mental health: a systematic review and meta-analysis [published correction appears in Lancet Planet Health. 2023 Sep;7(9):e735. doi: 10.1016/S2542-5196(23)00172-9.]. *Lancet Planet Health*. 2023;7(7):e580-e589. doi:10.1016/S2542-5196(23)00104-3

14 Riethmuller ML, Newnham EA, McEvoy PM. Supporting mental health in farming communities where and when it is needed most: A longitudinal analysis of risk and protective factors. *Soc Sci Med*. 2024;361:117381. doi:10.1016/j.socscimed.2024.117381



ACEs Aware:
Reducing Adverse Childhood Experiences in California

By Claire Hutkins Seda, Director of Communications, MCN

In 2019, the Office of the California Surgeon General launched a comprehensive statewide program to improve outcomes for individuals exposed to Adverse Childhood Experiences (ACEs). ACEs are events in a child's life (ages 0-17) which fall into one or more of the 10 categories of adversities defined by the Centers for Disease Control and Prevention.[1] (See box for the categories.) Nationwide, 64% of adults have reported that they had experienced at least one ACE during childhood. Over 17% reported experiencing four or more ACEs.

Those with four or more ACEs, compared to a person with no ACEs, have greater risks of heart disease, cancer, unintentional injuries, stroke, chronic lower respiratory disease, Alzheimer's, diabetes, chronic liver disease and cirrhosis, and kidney disease. Significant percentages of leading health issues are attributable to ACEs. (See box on page 8 for the categories.)

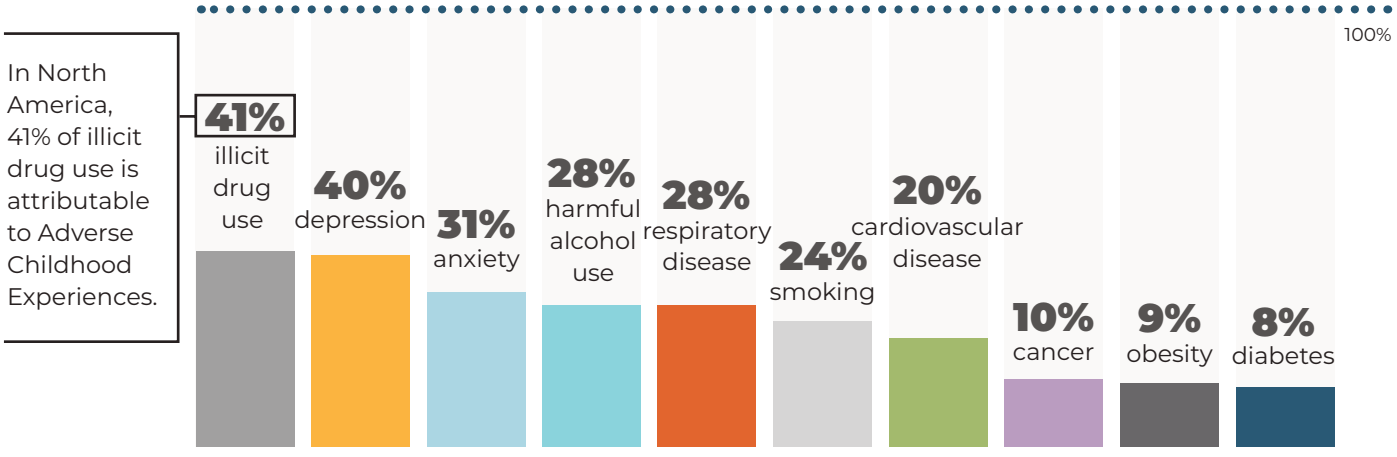
This initiative, ACEs Aware, was predicated on this growing understanding that ACEs are

continued on page 8

FAST FACTS

Impacts of Adverse Childhood Experiences and Toxic Stress

Population-Attributable Fractions of ACEs for Health Outcomes in North America[4]



Population-attributable fractions (PAFs) shown here are the portions of adverse health outcomes in the population that are attributable to ACEs.

 continued from page 7

one of the "upstream factors" that contribute to higher rates of common health challenges.[2] The initiative's goals include engaging members as owners of their own care; keeping families and communities healthy via prevention; providing early interventions for rising risk and patient-centered chronic disease management; and providing whole person care for high-risk populations. To meet these goals, the initiative supports two primary avenues: clinician education and training on screenings, and community and clinic investments to build ACE awareness and create community-level partnerships, infrastructure, engagement, and networks of care, for effective community-wide ACE prevention, identification, and response. MCN's project, NACES, was funded through this initiative.

In the first four years of ACEs Aware, 35,360 individuals completed their training, and 17,100 clinicians who accept Medi-Cal, California's Medicaid, are now ACEs Aware certified. Most indicated that they would begin to screen for ACEs, and they did – over 2,326,360 ACE screenings were conducted from January 2020 to March 2023. Clinicians can provide additional education and resources to screened patients with ACEs, to give patients concrete pathways to meet their potentially greater mental and physical health needs. ACEs Aware-certified clinicians are eligible for a $29 payment per screening of a Medi-Cal patient.[3]

Citations

1 Centers for Disease Control and Prevention. About Adverse Childhood Experiences. 8 October 2024. Accessed 2 June 2025. Available at: https://www.cdc.gov/aces/about/index.html

2 ACEs Aware. ACEs Aware Progress Report: 2019-2023. Accessed 2 June 2025. Available at: https://www.acesaware.org/progress-report-2023/

3 ACEs Aware. Medi-Cal Certification and Payment. Accessed 3 June 2025. Available at: https://www.acesaware.org/wp-content/uploads/2020/05/Provider-Toolkit-Medi-Cal-Certification-and-Payment.pdf.

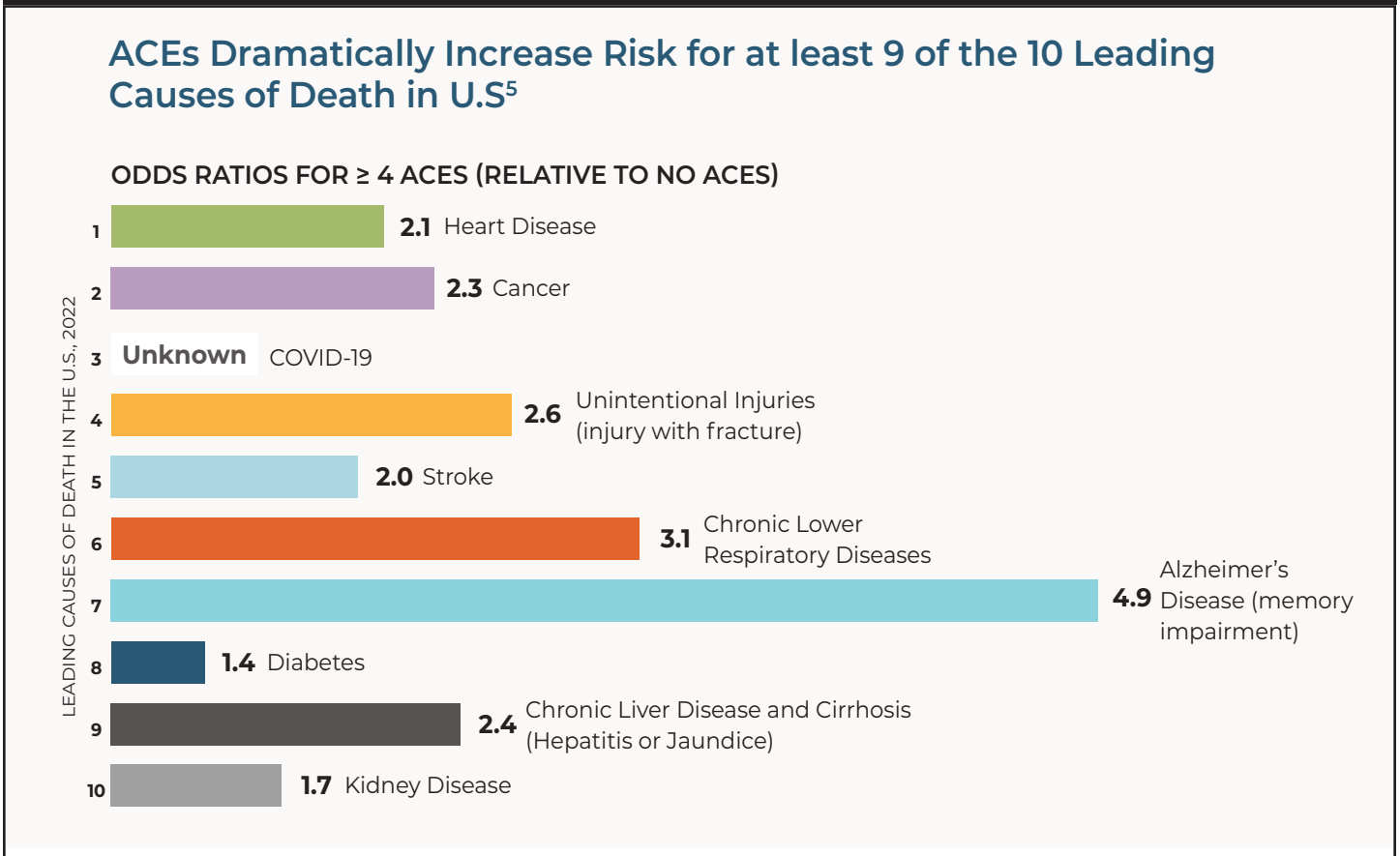
CDC's 10 ACE Categories, Organized into Three Domains

Abuse
1. Physical,
2. Emotional, or
3. Sexual

Neglect
4. Physical or
5. Emotional

Household challenges (originally phrased as "household dysfunction"; reframed by the CDC in 2015), caused by having a household member who:
6. Experienced mental illness
7. Used substance(s)
8. Experienced intimate partner violence (initially queried as violence towards the mother or stepmother)
9. Was absent because of divorce or separation, or
10. Was incarcerated.

This graph from the ACEs Aware Progress Report: 2019-2023 shows the increased risk of disease for a person who has four or more ACEs compared to someone with no ACEs.



4 Source: Bellis MA, Hughes K, Ford K, Ramos Rodriguez G, Sethi D, Passmore J. Life course health consequences and associated annual costs of Adverse Childhood Experiences across Europe and North America: A systematic review and meta-analysis. The Lancet Public Health 2019; 4(10): e517–e28.
5 Xu J et al, NCHS Data Brief, 2022 Dec;(456):1-8. Felitti VJ et al, Am J Prev Med, 1998 May;14(4):245-58. Hughes K et al, The Lancet Public Health 2017; 2: e356–66. Petruccelli K et al, Child Abuse & Neglect 2019; 97:104127. Center for Youth Wellness. A hidden crisis; 2014. Merrick MT et al, MMWR 2019; 68. (Source of causes of death: Xu et al 2022 (CDC); Sources of odds ratios: Hughes et al. for 1, 2, 6, 8; Petrucelli et al. for 4, 5, 7; Center for Youth Wellness for 10; Felitti et al. for 9; Merrick et al. for 10.)

Community Members' Needs at the Core of Health Center Partnerships

By Pamela Secada-Sayles, EdD, MPH, Senior Program Manager of Mental Health and Well-Being, MCN

Partnerships between health systems including community health centers (CHCs) and community-based organizations (CBO) have emerged as a promising strategy to improve health outcomes, especially in communities where access to health care may be limited. These partnerships aim to extend the reach of CHCs by linking them together with local organizations. There is plenty of evidence that these partnerships can boost access to critical preventative care like cancer screenings and vaccines—but whether they work well for all members of the community often comes down to how they connect with the communities they are trying to serve.

A recent national study by Cheon and You examined the impact of hospital–community partnerships on preventive health care services across over 3,700 US counties.[1] Their findings showed that these types of partnerships are associated with higher rates of mammography screenings and flu vaccinations. However, the benefits of these partnerships were not experienced equally across all communities. Some groups saw significant improvements, while others saw little to no change in outcomes. This shows that just having a partnership is insufficient. The community members' specific needs must be at the center of these partnerships.

One approach that continues to stand out as a bridge between CHCs and the communities they serve is the integration of community health workers (CHWs). These are "trusted members of the community who are trained to empower their peers through education and connections to health and social services."[2] CHWs play a critical role in translating and sharing health information in ways that reflect empathy and a deep understanding of the everyday realities of those they serve.

Their work goes beyond sharing facts—it fosters meaningful knowledge-sharing within communities. As Bhowmick et al. point out, when health information is exchanged between peers, neighbors, and family members, it becomes more than just data; it becomes a shared community resource.[3] CHWs are essential to this process. They do not just distribute pamphlets or explain clinical procedures. They create space for sensitive health topics to be discussed in ways that are respectful, relatable, and tailored to the community's values. By doing so, they help clinics deliver care that is not only more effective, but also more comprehensive and has the community in the center.

ACEs Aware is a California statewide effort to improve health outcomes through a person-centered approach to care. It is grounded on the understanding that adverse childhood experiences (ACEs) can be key drivers of leading health issues, like diabetes, heart disease, and kidney disease. It is the first effort in the nation to screen patients for ACEs to help improve health outcomes and save lives. ACEs Aware not only invested in equipping clinicians with the education and training to conduct ACE screenings but also ensured that a significant amount of the initiative's resources is available for use at the community level, proving clinics and communities can come together to co-create meaningful, community-focused care.

Salud en tu plato, a program highlighted in this issue, is run by Eat for the Earth, an example of a CBO that partnered with a local community health center to make positive health changes in the community. Here, volunteers from the CBO take vitals from participants at the health center.

Funded through this initiative, the NACES project (No more Adverse Childhood Experiences) is a great example of what this can look like in action. The project brought together clinics and community-based organizations including *Lideres Campesinas* and *Alianza Nacional de Campesinas* to co-design a model for addressing ACEs in rural migratory and seasonal agricultural worker (MSAW) communities.[4] It used a dual-intervention model that included a community-based component where MSAW leaders were trained to deliver peer education trainings, and a clinic-based component that trained clinicians and staff on ACEs and person-centered care.

On the community side, MSAW leaders received training not only in ACE content, but they also strengthened their skills in teaching, facilitating group discussions, referring community members to resources, and documenting outcomes.[5] Our evaluations show that MSAWs who participated in their peer-led trainings walked away with a better understanding of ACEs, more willingness to seek care at community health centers, and a stronger sense of how to take care of their own mental and emotional well-being. Many also expressed a strong desire to continue learning about mental health, a topic that comes with stigma in many communities. They also offered clear, concrete feedback on how clinics could better serve them: extend clinic hours, improve language access, train staff to better understand MSAW realities, and provide ongoing education about mental health and health care navigation.

On the clinic side, NACES improved readiness across participating clinics. Staff felt more confident discussing ACEs and reported positive changes in clinical practices, though barriers like time constraints and staff turnover still remained. One important success was that separating ACE education from screening helped foster trust and more honest disclosures from patients.

The NACES pilot project demonstrated that introducing sensitive topics through trusted community members—who embody empathy and a deep understanding of the contextual realities of the community—can have a profound impact. Partnerships with community-based organizations like *Líderes Campesinas* to deliver health education not only enhances patient understanding and engagement but can also support clinics in providing more effective and comprehensive care.

Citations

1 Cheon O, You NY. Effectiveness of Hospital-Community Partnerships in Preventive Health Care Interventions: An Exploration of Racial and Ethnic Disparities in Impact. Health Equity. 2025;9(1): 8-17. Published 2025 Jan 8. doi:10.1089/heq.2023.0259

2 "Who Are Community Health Workers?" MHP Salud. https://mhpsalud.org/our-programs/community-health-workers/

3 Bhowmick A, van der Zande MM, Harris R. Knowledge-seeking and knowledge sharing of health services across social networks and communities: a scoping review. BMC Health Serv Res. 2025;25(1):443. Published 2025 Mar 27. doi:10.1186/s12913-025-12525-y

4 Estrada-Darley I, Alvarado G et. al. Addressing Adverse Childhood Experiences in Clinics Serving California Farmworker Communities: NACES Pilot Project Evaluation. RAND. 31 July 2024. Available at: https:/www.rand.org/pubs/research_reports/RRA2152-2

5 NACES Pilot Project Report. Migrant Clinicians Network. May 2024. Available at: https://www.migrantclinician.org/resource/naces-no-more-adverse-childhood-experiences-pilot-project-report.html?language=en

Photo Credit: Robin Romano

An Agricultural Worker with Cancer

A Health Network Case Study

By Annabel Hofmann, Communications Intern, MCN

Isabela, a 50-year-old female, was referred to Health Network, MCN's virtual continuity of care program, from a physician in the Northeast. She had been diagnosed with cervical cancer after an abnormal pap smear. Isabela would be moving from the Northeastern state where she had been diagnosed to a Southern state to continue working on farms as a worker. This move would disrupt her care, which could quickly lead to a worsening of her condition that would be more difficult and more expensive to treat. Health Network was called in by the physician to find a clinic that she could afford at her next location, and transfer medical records to that new clinic, to make sure Isabela would not have to repeat diagnostic tests and could most efficiently continue her care.

A Health Network Associate was assigned to this patient and conducted a three-way referral, with Isabela, the enrolling physician, and the Health Network Associate on the phone. During that call, the patient was introduced to Health Network and how they would help to provide continuity of care services and ensure that her cancer treatment was not interrupted when she moved.

The patient requested to have her care transferred to a specific community health center in the region where she was moving, so the Health Network Associate worked to set up initial appointments to start Isabela as a new patient. The Associate requested medical records from the referring clinic and received 73 pages which they then provided to the clinic.

Isabela was put in contact with her new clinic and, also, informed of the OB/GYN services and financial aid programs, including a 35% discount for uninsured patients, that would be available to her.

After the initial appointment date, the Health Network Associate followed up with Isabela to ensure the transfer of her care had gone smoothly. The patient informed the Associate that she had spoken to a care coordinator at the clinic who would be helping her apply for Medicaid in her area, and if she did not qualify, the state's Department of Health would be able to assist by working with her on a sliding pay scale.

The Health Network Associate regularly followed up with the patient to make sure her care continued, providing those updates to the enrolling clinic. The last update the Health Network Associate received from Isabela was that she was cancer-free, still visiting the clinic, and waiting for her Medicaid application to be approved.

Health Network closed Isabela's case after following up and checking in with her more than 25 times and successfully connecting her to local resources. ■

Community Health Workers are now able to enroll community members into Health Network! Learn more, including how to enroll, at: https://www.migrantclinician.org/our-work/health-network.html. Join us for a webinar to learn how to enroll patients in Health Network. Watch our upcoming webinars page for the next one: https://www.migrantclinician.org/webinars/upcoming

Farmworker Health Network (FHN): Resources, Technical Assistance, and Education for Health Centers

By Claire Hutkins Seda, Director of Communications, MCN

The FHN is comprised of six National Training and Technical Assistance Partners (NTTAPs) that focus on migratory and seasonal agricultural worker (MSAW) health and provide coordinated training and technical assistance to health centers that serve MSAW patients. Each organization specializes in areas of focus such as clinical support, outreach services, policy analysis, and program development. MCN is one member of the FHN. Here is some information on each member.

MCN supports strong clinical networks to better serve its patients like MSAWs by assisting health centers in identifying the factors that contribute to health and well-being. MCN offers ongoing training and technical assistance including ongoing webinars and communities of learning, many of which offer CME/CNE. www.migrantclinician.org

Farmworker Justice offers programs for MSAWs, MSAW-serving partners, and health centers. Recent programs focus on heat safety, access to health care, skin cancer screening, wildfire smoke, disaster relief, digital literacy, and more. www.farmworkerjustice.org

Photo Credit: USDA

Health Outreach Partners provides customized consultation, trainings, workshops, and webinars on focus areas like community collaborations, community health needs assessments, facilitated program planning and evaluation, organizational assessment and development, and more. www.outreach-partners.org

MHP Salud's health center support focuses on building the capacity of organizations looking to start or improve upon their own Community Health Worker programs, offering in-person, virtual, and asynchronous learning options. https://mhpsalud.org/our-programs/management-based-objective/training/

National Association of Community Health Centers offers online trainings for health centers including clinical workforce support, financial management, health center governance, operations and human resources, and more. https://www.nachc.org/training-events/training-for-health-center-professionals/

National Center for Farmworker Health offers a health center toolbox; health education resources with information hubs on infectious disease, diabetes, mental health, and more; and consultation and technical assistance. www.ncfh.org

Depression among Migratory and Seasonal Agricultural Workers continued from page 6

were associated with an increase in hospital attendance or admission for mental illness.[13]

Protective factors may be limited by MSAW lifestyles. Social support and a sense of belonging are two critical protective factors cited by farmers and farm residents in one survey;[14] both are likely to be absent in a temporary MSAW community, like among H-2A workers.

Clinicians serving MSAW communities are encouraged to assess pesticide exposure in their patients who are presently in farm work or have a history working on farms.

- MCN's recent three-part webinar series on How to Prevent Pesticide Poisoning in Farmworkers is archived on our website in English and Spanish. https://www.migrantclinician.org/webinar/diagnosis-and-management-pesticide-related-illness-how-prevent-pesticide-poisoning
- MCN's Environmental and Occupational Health screening questions for primary care, in English and Spanish, can assist: https://www.migrantclinician.org/tool-source/ resource/eoh-screening-questions-primary-care.html
- MCN's low-literacy comic books in Spanish are designed with MSAWs in mind. These comic books address key concerns in MSAW communities, including exposure in women of reproductive age, exposure among children, and pesticides and respiratory health. https://www.migrantclinician.org/pesticide-comic-books.html
- Recognition and Management of Pesticide Poisonings 6th Edition is EPA's essential clinical reference for recognizing and managing pesticide overexposures. https://www.epa.gov/ pesticide-worker-safety/recognition-and-management-pesticide-poisonings

Clinicians are also encouraged to screen patients with a history of farm work for depression. Here are some resources on depression:

- NIWAP's Patient Health Questionnaire PHQ-9 in Spanish: https://niwaplibrary.wcl.american.edu/wp-content/uploads/2015/pdf/TRAUM-Temp-PHQ9QuestionnaireSpanish.pdf
- Mental Health America's Life with Depression Fact Sheet in Spanish. https://mhanational.org/es/resources/life-depression/
- Mental Health America's resource center in Spanish https://mhanational.org/resources/recursos/

Next Steps: Our Virtual Resource Page, and a Request for Feedback

Visit MCN's *Streamline* webpage to access all of the resources and references mentioned in this issue by pointing your phone at the QR code or visiting https://migrantclinician.org/streamline.

We invite you to tell us your thoughts on *Streamline*. What would you like to see in future issues? What MCN resources do you use the most in your health center? Email edu@migrantclinician.org or call: 512-579-4533. Thank you!

Migrant Clinicians Network
P.O. Box 164285 • Austin, TX 78716

Non Profit Org.
U.S. Postage
PAID
PERMIT NO. 2625
Austin, TX

Acknowledgment: *Streamline* is published by Migrant Clinicians Network (MCN). This publication may be reproduced, with credit to MCN. Subscription information and submission of articles should be directed to:

Migrant Clinicians Network
P.O. Box 164285
Austin, Texas, 78716
Phone: (512) 327-2017
Fax (512) 327-0719
www.migrantclinician.org
E-mail: cseda@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

August 17-19
Community Health Institute (CHI) & Expo
Chicago, IL
https://www.nachc.org/conference-page/chi-expo-conference/

September 23-24
Rural Health Clinic Conference
Kansas City, MO
https://www.ruralhealth.us/events/schedule

October 21-22
Workforce Conference
Las Vegas, NV
https://www.nachc.org/conference-page/workforce-conference/

November 9-12
National Network for
Oral Health Access Annual Conference
San Antonio, TX
https://www.nnoha.org/