Those with diabetes confront their condition multiple times a day, every time they pick up a fork, and all the hours in between. Healthy habits are hard earned after many months of daily choices – a difficult but necessary step in managing or even reversing type 2 diabetes. But what happens when habits are disrupted? When disaster strikes, health may be pushed to the sidelines, and suitable foods and even medicine may be unavailable. Patients with diabetes should be encouraged to prepare for disasters to ensure that their diabetes can remain in control despite major disruptions.

As climate change progresses, personal preparedness and self-management of diabetes become even more critical. Regions of the world that traditionally did not have frequent heat waves or wildfires are now experiencing them annually. Areas that are used to hurricanes aren’t prepared for back-to-back storms or storms that are much stronger and longer lasting because of climate disruption.

Over 34 million people in the United States have diabetes. Millions more are prediabetic or have diabetes but are undiagnosed. And Latinx people have a higher risk of type 2 diabetes than non-Hispanic whites. But “Latinx” as a definition is very broad, encompassing diverse cultures and races from Puerto Rico to Mexico to Chile to Spain – and risks vary. Puerto Ricans in particular have a high risk of type 2 diabetes, with estimates that the Island has a prevalence rate about 50% higher than the general US population.1 The rates may be higher now,
as disrupted health care and years of economic, social, and health destabilization from Hurricane Maria and earthquakes have left many unable to keep up with their health. Those disasters were followed by COVID-19, which further disrupted medical care as people feared attending medical appointments and hospital systems became overwhelmed.

To help patients with diabetes better prepare for the next disaster, Migrant Clinicians Network and the National Center for Health in Public Housing recently co-hosted Diabetes and Disasters, a four-part Spanish-language learning collaborative aimed at increasing Community Health Workers’ knowledge of diabetes to help prepare patients for disasters.

During the learning collaborative, co-presenter Lois Wessel, FNP, DNP, noted that a disaster can be environmental, such as a hurricane, tornado, or snowstorm, or it can be a public health disaster, like COVID-19. Disasters can be slow moving, taking place over several weeks, such as a heatwave or severe cold snap, or immediate, like a tornado. Indeed, disasters can be both immediate and slow — a wildfire might prompt urgent evacuations, and then continue to burn for weeks. Many are influenced by climate change but not all. All disasters have one thing in common: disruption.

“The critical component is how the disaster affects the social structures we rely on to be able to do the basics to stay safe and healthy,” Wessel said. When transportation is disrupted or air quality drastically impaired, patients may not be able to get to the health center or to the pharmacy for insulin, or to a market that would have the right foods for a person with diabetes. When power is shut off, either disrupted by a disaster or turned off in the case of rolling blackouts, insulin may not be sufficiently chilled, or food may spoil. Credit cards won’t be accepted at grocery stores, if they are open at all during an outage. In all these situations, “the goal is to make sure that an ecological disaster doesn’t become a health disaster,” Wessel concluded.

The presenters outlined key areas to prepare for: nutrition, medicines, home monitoring and clinical concerns, and physical health.

Nutrition

After a disaster, vigilance must be heightened to ensure that nutrition needs are met. Preparation before disasters is key. During the first part of the learning collaborative, Wendy Shelly, RD, CDCES, CDN, reviewed the basics of diabetes nutrition, which is also covered in MCN’s Spanish-language diabetes comic book. Shelly recommended building an emergency food box that is regularly reviewed for expiration dates. For those with sufficient means to pay for the food up front, the box can serve as a critical way to keep diabetes in check even if a disaster strikes, whether the patient is stuck at home without resources, or if she must urgently flee. Some recommended components in the box:

- Whole grains that don’t need to be cooked, including plain oatmeal, low-sugar cereals, and biscuits – those low in sodium and low in sugar. Look for high fiber and whole grain.
- Proteins that don’t require refrigeration or cooking, including fat-free and low-sodium canned beans; nuts and nut butters (with no added salt); canned meats like chicken or tuna that are packed in water and not oil. Other less ideal options include dried meats, although most have a lot of salt, and powdered skim milk, which may not have excellent flavor but can provide protein in a disaster.
- Canned vegetables that are low in carbohydrates and low in added salt.
- Canned soups that are low in added salt.
- Glucose tablets and/or a few hard candies – there may be a temptation to eat the candies when blood sugar dips dangerously low.

Shelly also provided some additional tips:

- If you include canned foods, be sure to pack a manual can opener.
- Avoid instant soups like instant ramen due to their very high amounts of sodium.
- If you include canned fruit, do not drink the juice in which it’s packed, as that can cause a spike in blood sugar.
- Avoid drinks that aren’t water. There are a few – like Zevia or Sparkling Ice – that are sugar free and low in sodium. With limited space, however, water is the best choice.
- Pack a water filter, like a Brita filter, in the case of evacuation to a place (like a hotel or campground) where the taste of the water may discourage intake.

- Avoid protein bars, granola bars, and fruit bars. While they are labeled as healthy, most are high in sugar and carbohydrates.

Treatment and medicines

In the second part of the learning collaborative, José Rodríguez, MD, Chief Medical Officer at Hospital General Castañer in Puerto Rico, emphasized the value of evaluating the patient and the medicines they are using, before any disaster strikes. “It’s important to discuss every detail related to diabetes,” he noted. “After we do that, we can talk about medicines. But, as you can see, you can’t depend on the medicines,” when disaster strikes. Regular monitoring of blood sugar, proper nutrition and exercise, check-ups on A1c levels every three months in a clinic, and other key strategies must be implemented concurrently with medication. After a new medication is prescribed, extra care must be given to ensure that, over a 24-hour period, the patient is able to maintain control of their diabetes. Those who are unable to maintain their diabetes over time are at high risk of serious complications, from ocular degeneration, to chronic kidney disease, to periodontal disease.

“Diabetes is often one problem that a patient may experience” in combination with other health concerns, Dr. Rodríguez also emphasized. Diet and lifestyle may lead to obesity, hypertension, and high cholesterol, which increase the risk of diabetes. For treatments, care must be taken to determine all of the medicines and supplements that a patient may be taking for their various conditions, as they may affect a patient’s blood sugar or the effectiveness of their medication.

This also includes over-the-counter medication. If a patient has the flu, for example, he may take a cough syrup regularly over a period of several days, and then be confused when his blood sugar is out of control, but the patient hadn’t accounted for the extra sugars in the cough syrup. Herbal remedies and home medicines should also be reviewed.

The health center must work diligently ahead of a disaster – to equip patients with solid education on their diabetes, how it affects their body, and how their medications work; to plan around where the most vulnerable live in the community, both those who need the most care and those most

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Despite over two years of data on COVID-19, it remains unclear what percentage of people who contract COVID-19 develop symptoms of long COVID in the weeks or months after their acute illness. Also known as long-haul COVID and cited in medical literature as Post-Acute Coronavirus Disease Syndrome (PACS) or Post-Acute Sequelae of SARS-CoV-2 (PASC), long COVID may affect between 10 and 30% of people who had COVID, or possibly more. But what is long COVID, and what do clinicians need to know about long COVID when considering the needs of their migrant, immigrant, asylum-seeking, and agricultural worker patients? Amid the rapidly accumulating and changing data, several key findings are relevant for these special populations.

Long COVID symptoms vary
Long COVID can be defined as either the experience of symptoms after an acute COVID-19 infection has resolved, or the symptoms that develop a month or more after infection. They may also be symptoms that a patient experienced during acute infection that never fully resolved. Long COVID affects individuals in dramatically different ways, likely because COVID can affect all organ systems and consequently has multiorgan effects, including on the functioning of the heart, lungs, kidneys, skin, and brain. While over 200 different symptoms have been identified, the Centers for Disease Control and Prevention (CDC) have outlined some of the more commonly reported symptoms:

- Difficulty breathing or shortness of breath
- Tiredness or fatigue
- Symptoms that get worse after physical or mental activities (also known as post-exertional malaise)
- Difficulty thinking or concentrating (sometimes referred to as “brain fog”)
- Cough
- Chest or stomach pain
- Headache
- Fast-beating or pounding heart (also known as heart palpitations)
- Joint or muscle pain
- Pins-and-needles feeling
- Diarrhea
- Sleep problems
- Fever
- Dizziness on standing (lightheadedness)
- Rash
- Mood changes
- Change in smell or taste
- Changes in menstrual period cycles

Many factors appear to influence what symptoms of long COVID one may experience, including severity of acute infection, age, sex, comorbidities, length of time since infection, and even the variant that the patient contracted.

Patients who were hospitalized with COVID are most likely to experience long COVID, but those who contracted a very mild case of COVID may still suffer with symptoms, months later. Even those who were asymptomatic during their COVID infection may experience long COVID. Symptoms may appear directly after infection or may be delayed; one large study found that 39.9% of long COVID sufferers stated that their symptom or symptoms
Long COVID and health inequities

People of color in the US have experienced higher rates of hospitalization and death from acute COVID-19, compared to white populations. The CDC notes that “both historical and current experiences of racism and discrimination contribute to mistrust of the health care system among racial and ethnic minority groups.”

Many studies describe the numerous health disparities that non-white people have faced during the COVID-19 pandemic. These disparities existed before COVID, were exacerbated during the pandemic, have continued, and may result in inequities in long COVID, as well. Disparities include poverty, lack of health insurance, living in rural and medically underserved areas, and also structural inequalities like discrimination, racism, and a lack of occupational protection. Agricultural workers, migrants, and immigrants face significant structural racism and these health inequities, both of which prevent them from successfully accessing quality health care, including for issues around long COVID.

Long COVID affects the heart

Researchers in a recent study published in [Nature Medicine](https://www.nature.com/articles/s41591-022-01426-6) found that the risk of cardiovascular events after even a mild case of COVID is substantial. More data are needed to understand the mechanisms by which COVID affects the heart; early theories include entrance via ACE2 receptors and damage to arteries. Regardless of how, the evidence is strong that it can substantially damage the heart. Their research, using national health care databases from the US Department of Veteran Affairs, demonstrates that, beyond the first 30 days after COVID infection, individuals have a higher risk of diverse heart concerns including stroke, heart attack, and myocarditis. The risk is related to the severity of the acute infection; for example, the risk for stroke among non-hospitalized patients after COVID infection was 23% higher, compared to 425% higher among hospitalized patients.

For patients who encounter numerous barriers to health care including migration, rural locations, transportation issues, lack of health insurance, linguistic barriers, and more, it is critical to share the increased risk and the signs and symptoms of cardiovascular disease, as well as information on when to seek care. Younger and otherwise healthy patients who have recovered from COVID may not seem at risk for cardiovascular disease; these patients, too, should be informed of their increased risk and what to look for.

Reference

10. Ibid.
Long COVID may affect people with certain comorbidities more than others.

Diabetes and asthma have both been linked to long COVID. Diabetes and acute COVID have already been strongly linked, including a study that found that people who tested positive to COVID-19 have a higher likelihood of a diabetes diagnosis in the following months than those who tested negative. More recently, a study found that those who contract COVID-19 and have a diagnosis of diabetes are more likely to suffer from long COVID. Diabetes rates among agricultural workers are higher than the general population, leading to increased risk of long COVID.

Asthma may also increase a person’s risk of long COVID. Occupational exposure to pesticides and agricultural dust may increase agricultural workers’ risk of asthma, although diagnoses among US agricultural workers remain low. One study found that 56% of COVID patients with asthma reported suffering from long COVID, including breathing difficulties.

Vaccination may prevent long COVID

A vaccinated person has a much lower risk of contracting COVID, and a very low risk of severe disease or death from COVID. As stated above, those who are hospitalized or have a more severe form of acute COVID have a higher risk of long COVID. Consequently, vaccination is a critical component to reduce one’s risk of long COVID.

Treatment guidance is starting to become available

The American Academy of Physical Medicine and Rehabilitation has developed several guidance statements to assist clinicians in assessing and treating patients with long COVID with symptoms of fatigue, breathing difficulties, and cognitive symptoms. They also have a dashboard on long COVID and a comprehensive resource list: https://www.aapmr.org/members-publications/covid-19/physiatrist-resource-center/long-covid-pasc-resources

The CAMFiC Long COVID-19 Study Group has proposed primary care clinical guidelines, suggesting three primary care visits over the course of 14 weeks. Their guidance includes diagnostic approaches to each of the most common symptoms of long COVID. “Long Covid-19: Proposed Primary Care Clinical Guidelines for Diagnosis and Disease Management”: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8073248/

Read the full article on cardiovascular events and risks from Nature Medicine: https://go.nature.com/3jakPaW
A woman who worked in the tomato fields had been frequently harassed by her supervisor, and so she turned to Alianza Nacional de Campesinas (Alianza), a national nonprofit seeking to unify the struggle and promote leadership of campesinas in a national movement to create major visibility and advocate for changes that ensure human rights. Alianza has long worked on issues of sexual violence. Elvira Carvajal, Lead Organizer with Alianza, went with the woman to the police station. 

There, no police officers could speak Spanish, so Carvajal used her limited English. She was shocked when the officer asked the farmworker woman, “Did you go to work dressed that way?”

“Instead of listening, the female officer was interrogating her, insinuating that she was being harassed because of the way she dressed. I said, ‘just because she’s dressed like that doesn’t give anybody the right to be disrespectful.’ And, ‘we need someone who speaks Spanish,’” Carvajal recalled. The police officer brought a man from security over to act as an informal interpreter. The agricultural worker who had experienced abuse was told to tell her story again, to a man who didn’t work with the police, to then be interpreted for the police officer who had already shamed her. “The girl no longer wanted to speak. She was ashamed. She didn’t want to continue with the case, and she didn’t file a report,” Carvajal said. “There are many cases like this. Out of fear, or shame, they don’t report.”

For staff at Alianza, stories like these are not new. Alianza members, many of whom are agricultural workers, former agricultural workers, or from farmworker families, often hear stories like these — of a years-long situation where a woman was raped regularly by her agricultural worker supervisor, of attempted rape by a man whom an agricultural worker had met on Facebook, who it was then discovered was raping multiple women in the community. Through their work in agricultural worker communities, Alianza has uncovered the prevalence of sexual abuse in the community, the fear and shame that victims of the abuse have, and the significant and shocking barriers that the victims encountered for those who sought justice.

“The situation for farmworker women is difficult and complex,” noted Hormis Bedolla at Alianza. “In many states, everyone has the right to organize — except people in agriculture. Everyone has the right to time and a half, and to minimum wage — but not farmworkers.” In addition to and because of a lack of worker’s rights, farmworkers frequently endure exploitation in the workplace, where fear of exposure of immigration status, extreme poverty, unstable work options and migration, and language and cultural barriers keep farmworkers from reporting mistreatment and abuse. In an industry already rife with exploitation, women may experience even higher rates of sexual abuse, at home and in the workplace, both arenas in which power imbalances can be played out. “The mere fact of being a woman is a disadvantage,” Bedolla said.

Further, many women hide the abuses because of their position as the anchor for the family, which could be disrupted if a mother reports abuse by a father, or if a mother loses her work in retaliation from reporting abuse at work, say Alianza advocates. “We consider ourselves the center of the family, but that shouldn’t be a barrier [to reporting] — it should be a value, to hold the family together,” noted Mily Treviño-Sauceda, Executive Director of Alianza.

continued on next page
For women who manage to successfully report an incident, many programs built to support victims of sexual abuse are not geared toward agricultural worker communities, said Treviño-Sauceda. Most are in English, and “you can’t just translate it, and think that, just through language, you’ll get the message across in the same way,” she emphasized. Staff at health centers, domestic violence agencies, and other agencies with the mission to serve abused women, she said, need to partner with the agricultural worker women themselves to develop tools that are appropriate, relatable, and useful. “These places know about the topic [of sexual violence] – but we have the experience. We are the experts in what happens in our community, and to our people.”

Exiting the profession in search of safer employment is not an option for many – nor is it an appropriate response to violence. “I love working in the fields. I love working with the soil. But we don’t want to just survive – we want to live our lives,” expressed Carvajal.

Social Determinants

Agricultural worker communities face significant social determinants of health that impact their ability to address issues of violence both interpersonally and within the community. According to Nina Kanakarajavelu, MPH, Project Director for Health Promotion at Farmworker Justice, the significant and overlapping social determinants of health that many agricultural workers face can in turn negatively impact their health and their access to health care.

Grouped in six different domains – economic stability, neighborhood and physical environment, education, food, community and social context, and health systems – these social determinants of health “can be key drivers in some of the differences we see in health outcomes across different groups,” Kanakarajavelu emphasized. And they are interconnected, she said: “A change in one domain can cause a chain reaction in other domains.” For example, losing a job may impact where one can live, access to health care, ability to afford healthy food, and more. “There’s a lot of variability in between all these domains but one thing we see across the board is that those with lower socioeconomic status – lower access to resources – tend to experience worse health outcomes.”

Related to these determinants, agricultural workers are less likely to utilize health services. According to data from the 2017-2018 National Agricultural Workers Survey (NAWS), 29% of agricultural workers did not use US health services at all in the last two years, compared to just 17% of the general population. Distrust, affordability, transporta-

CUES Intervention

Futures Without Violence’s CUES Intervention is summarized here. Visit https://ipvhealthpartners.org/adopt/ for more information on the approach.

C: Confidentiality

Know your state’s reporting requirements and share any limits of confidentiality with your patients.

Always see patients alone for part of every visit so that you can bring up relationship violence safely.

UE: Universal Education + Empowerment

Give each patient two safety cards to start the conversation about relationships and how they affect health.

Open the card and encourage them to take a look. Make sure patients know that you’re a safe person for them to talk to.

S: Support

Though disclosure of violence is not the goal, it will happen — know how to support someone who discloses.

Make a warm referral to your local domestic/sexual violence partner agency or national hotlines (on the back of all safety cards).

Offer health promotion strategies and a care plan that takes surviving abuse into consideration.

Reference:

At St. Clare Health Mission’s clinic in rural La Crosse, Wisconsin, Krishi Korrapati was struggling to find sufficient diabetes materials for the patients who are newly diagnosed with diabetes at the clinic. Entirely staffed by volunteers and supported by two local hospitals, the clinic provides basic health care treatment for those without health insurance and who are ineligible for Medicaid through weekly drop-in evening clinics. Diabetes is one of several chronic concerns that are routinely diagnosed.

If a patient’s A1c is greater than 8, “we sign them up for a chronic clinic day, the first Wednesday of every month,” Korrapati noted. “They’ll sit down with the specialist doctor and learn about the lifestyle changes that need to be made.” They may also be referred for further specialty care to the two hospitals that fund the clinic.

For those whose diabetes is not as severe, the clinic had limited materials on what it means to have diabetes and how to live with it. One of the specialists, Korrapati recalled, had seen Migrant Clinicians Network’s diabetes comic book, “Mi salud es mi tesoro,” and requested that the clinic offer it in English – and so, after St. Clare Health Mission’s workers got to work translating, My Health is My Treasure was born.

“The comic book was really simple, so it could inform patients who are newly diagnosed,” Korrapati said. “It was a little counterintuitive to take this resource and translate it, as it’s meant for a Spanish-speaking population, but the information was nicely distilled so we worked with a translator to get it into English.”

The comic book, intended initially for a Spanish-speaking farmworker community, is now being used among English-speaking patients who work in furniture or at local restaurants, far outside of the farmworker sphere, and yet such patients still need the same basic information. St. Clare Health Mission has augmented the comic book with booklets from the American Diabetes Association along with some Spanish-language materials.

MCN now hosts the English translation of the comic book on our comic book page as well, ensuring that St. Clare Health Mission’s work can be useful to other clinics across the country: https://bit.ly/3NJkKsW. MCN is also preparing to print copies of the comic book in English and Spanish. The comic book will soon be offered in a Caribbean Spanish version as well, which features adjusted menus to fit Caribbean cultures. Watch MCN’s active blog for updates to reserve your copies; due to limited funding, copies run out quickly: https://www.migrantclinician.org/community/blog.html

MCN has worked for decades to improve access to information and resources on diabetes, and continues to work on diabetes considering emerging concerns. MCN works with partner organizations to build community-based emergency management plans for patients with diabetes, a critical concern as the climate crisis progresses, and weather-related emergencies occur with more frequency and severity, and in areas unused to such disturbances. MCN is also watching long COVID, which may be more common in patients who have been diagnosed with diabetes.

Learn more about how diabetes affects migrant and immigrant populations on our diabetes page: https://www.migrantclinician.org/issues/diabetes


Learn more about St. Clare Health Mission: http://stclarehealthmission.org/

Watch our Upcoming Webinars page for new learning opportunities on diabetes and other health concerns for migrants and immigrants: https://www.migrantclinician.org/trainings.html
Health Network: Guiding Asylum Seekers to Prenatal Care
Claire Hutkins Seda, Senior Writer & Editor, Migrant Clinicians Network

After crossing the Rio Grande, 21-year-old Maria Garcia,* finally on US soil after a long journey, immediately asked for asylum. Garcia was fleeing from danger in her home country in Central America. US Customs and Border Patrol brought her into custody to begin processing her asylum claim. When she complained of abdominal pain, Garcia was brought to a clinic, where she discovered she was pregnant. Her asylum case pending, Garcia was released to a nearby immigration shelter, where she was welcomed with warm food, a place to stay while she contacted family members in another part of Texas, and an initial exam to make sure her pregnancy was going well. MCN partners with the immigration center to ensure that newly arrived migrants and asylum seekers with ongoing health conditions are provided with case management so they can get the much-needed and often urgent care they need when they arrive in their receiving community.

“This was the quickest case I’ve ever had,” recounted Alma Colmenero, Prenatal Coordinator for Health Network, Migrant Clinicians Network’s virtual case management, who picked up Garcia’s case when she arrived at the immigration shelter. Colmenero, who has worked with Health Network since 2015, rarely has cases that run so smoothly. After a Health Network Associate at the immigration shelter enrolled Garcia into Health Network, Colmenero called Garcia’s anchor contact – a relative or good friend who keeps contact with the patient, who is not migrating – to verify information. Then, she determined where Garcia planned to go next: a large metropolitan area in another part of Texas, where some of Garcia’s close relatives live. She quickly found a community health center near Garcia’s family. Colmenero managed to schedule a prenatal appointment and forward Garcia’s medical records to the health center within 24 hours of enrollment, while Garcia was traveling to her new city. The following day, Garcia had her first prenatal appointment at her new health center, where she would continue care through birth.

Garcia’s new health center “provides many services – WIC, vaccines, dental, women’s health, pediatric – so everything is set for her and her baby,” Colmenero noted. As part of Garcia’s care, Colmenero will regularly check up on Garcia until her baby is born, after which Colmenero will close Garcia’s case.

MCN has partnered with community health centers, immigration shelters, health departments, and other points of care across the country to offer Health Network to anyone who is moving with an ongoing health condition, a service that is free for the enrolling health care provider, the migrant, and the receiving health care provider. At times, this may mean an agricultural worker with diabetes who is moving regularly with the seasons; at other times, the patient is a college student with active tuberculosis who is moving back to his home country. In recent years, MCN has helped thousands of pregnant asylum seekers as they struggle to find basic prenatal care when they arrive in the US. Learn more about Health Network, the services available, the new initiatives that grow our work to serve asylum-seeking children and families, and how to enroll patients at: https://www.migrantclinician.org/services/network.html.
likely to be cut off from care; to review emergency protocols around medicine, envisioning multi-week cut-off from supplies and electricity and prepare accordingly.

Patients must also work to be prepared. Before an emergency, patients should have documentation of their diabetes and how they are monitoring and controlling it. A written list of medications is essential in case their medication is damaged during the disaster.

In Puerto Rico, emergency plans were tested during several recent disasters. Puerto Rico had several days’ head start before Hurricane Maria approached. At Hospital General Catarán, clinicians went into the community to get additional medication into the hands of those most at risk. Unfortunately, a lot of medicine was damaged during the hurricane. When the power went out, many people threw away their insulin, fearing that it had gotten warm, and headed back to the hospital for a new prescription, but their health plans would not cover the insulin as they had just refilled their prescription – a concern that health centers should prepare for. In this emergency, the hospital advised patients to keep their insulin vials in cool clean water to maintain a low temperature, and to keep it out of direct sunlight, when refrigeration was unavailable. Dr. Rodriguez noted that the hospital was without regular electricity for six months. When infrastructure is destroyed, the disruption becomes a long-term concern, and medication and storage of medication should be considered when patients develop their personal plan.

Home monitoring and clinical concerns
Patients may need to practice self-management of their diabetes for extended periods, and consequently should be well informed of their health concerns and how to monitor their diabetes. Patients should also be aware of the signs and symptoms when their diabetes requires immediate clinical attention. Stress, illnesses, exercise, and other medications can all affect control of diabetes.

Of course, going into an emergency with uncontrolled diabetes is much safer than with uncontrolled, and patients should be encouraged to take diabetes care seriously and urgently. After a disaster, with no electricity, patients need to have written instructions to refer to on how to monitor their diabetes, Dr. Rodriguez recommended, and power supplies to keep their home monitoring systems working properly. He emphasized the importance of FDA-approved monitors, and working with patients to troubleshoot potential issues to make sure readings are correct. Many newer home monitoring devices monitor blood sugar throughout the day, and allow patients to send blood sugar graphs to their clinicians for review. Understanding blood sugar dips and spikes throughout the day, what causes them, and how to adjust medication and lifestyle to prevent unhealthy ones, is important for patients with diabetes to understand before a disaster strikes.

Patients must understand the signs and symptoms of hypo- and hyperglycemia, in the case that home monitoring systems fail. For hypoglycemia, when blood sugar is too low, symptoms include sweating, disorientation, confusion, irritability, tremors, faster or irregular heartbeat, dizziness, imbalance, convulsions. Hypoglycemia can lead to a coma if not treated. Hyperglycemia, when blood sugar is too high, has some overlapping symptoms, including dizziness, irregular heartbeat, sweating, confusion, and a general feeling of being unwell. However, hyperglycemia frequently presents with thirst and frequent urination, hunger, and blurred vision. In the case of an emergency, where equipment is unavailable and emergency services are hard to reach, a patient can test with food. If food improves your low blood sugar within 15 to 30 minutes, then the patient was experiencing an episode of hypoglycemia. If it does not improve, emergency services are warranted.

Mental health and wellness
Mental health is an oft-overlooked concern that people with diabetes must prepare for in the case of a disaster. Any disaster can affect an individual’s mental health.

“Stress is a physiological response to an external event,” Wessel said. “This can start a cycle of stress, that whenever there are external circumstances beyond your control, you can begin to feel stress. For diabetes, all this stress can increase blood sugar.” Stress causes the release of adrenaline and cortisol, hormones that disrupt the body’s usage of insulin, which is itself a type of hormone.

Wessel emphasized teaching strategies to reduce stress as part of the health plan for people with diabetes, and for others in communities that are at risk of a disaster – which, with climate change, are all communities. Primary strategies include recognition and separation of what one can control after a disaster from that which is out of one’s control. After a disaster, there are many unknowns, as communication is cut off and situations remain unstable. Releasing control of the situation and focusing instead on what is controllable – how to spend time, how to help others in ways that are safe, how to take care of one’s body with food and care – will reduce stress.

Anxiety is a combination of stress and worry that can have a serious impact on physical well-being. “I say that anxiety is like the biggest stress, stress that can’t be calmed down,” Wessel said. “It’s a stress that’s so strong that it causes anxiety. But the solution to anxiety is similar.” Uncertainty during a disaster can be addressed similarly, as individuals, with care to one’s health and well-being; or as a community, coming together to release negative reactions through a shared mass, a community art or singing project, or other community-level outlets. Health care workers, for their part, must be prepared for how they are going to maintain communication with the community to provide clear messages over the clinic’s activities and limitations in

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the wake of a disaster.

Stress eating and drinking are two more concerns that people with diabetes must take care to avoid, as well as other personal responses to stress that can cause diabetes to get out of control. “It’s important that we remind people that it’s better to have limited sugar, alcohol, and caffeine. All of these... can calm someone down in the short term, but symptoms of stress and anxiety will return and often will be worse.” She recommended teaching patients simple awareness exercises that are backed by research to help prepare people to respond when they are experiencing stress and anxiety, including breathing exercises or focusing attention on one body part like wiggling toes to recenter and reground into the body. A doctor in Colorado, for example, provided very simple “tapping” techniques to his community during wildfires. This technique, drawing from acupressure, has the patient tap lightly on key points across the body, which brings attention back to the body, and can help relieve stress and anxiety. The doctor, upon following up with patients after the fires, found that the patients continued to use the technique in stressful situations including when waiting for COVID test results.

Wessel also noted that exercise can have a positive long-term effect on mental health, as well as diabetes. “If you go out even just to walk or jog, you’ll feel better,” Wessel noted. “Exercise touches all parts of the body – but it’s particularly helpful for people with diabetes.” Beyond mental health, engaging in a daily exercise plan can help the pancreas function better, releasing more insulin naturally and allowing for better usage of insulin, for those with type 2 diabetes. It may help reduce blood sugar, hemoglobin A1c, blood pressure, and cholesterol. Exercise does not have to be push-ups at the gym or running on a track; dancing, movement, play, and games like soccer with friends can all move the body in positive and healthy ways.

Exercise can also have short-term effects that can buffer the mental health stress of disasters. “After a traumatic event, it’s important to remember there are ways to exercise, even if you’re in a refugee camp or in the outskirts of a village,” that can improve health, Wessel emphasized. In refugee camps in Iraq, researchers discovered that children who continued to actively play managed their health better than those who did not. Wessel encourages children – and adults – to continue to play in safe ways after a disaster.

Finally, having a safe place to speak about disaster experiences can help survivors begin to heal from the experience. While many wish to avoid talking about it, “not talking about it is going to cost in the long run,” in terms of their mental health, Wessel said.

In Puerto Rico, patients were just beginning to recover from Hurricane Maria when frequent earthquakes shook the island. Shortly thereafter, COVID began to circulate. Compounding emergencies made mental health even more important to address in an ongoing manner. “Many people don’t accept that they have a behavioral health concern,” Dr. Rodriguez admitted. “People come with complaints that are difficult to explain – constant headaches on one side of the head, a pain in the left side — and the patient doesn’t believe they are connected, but he doesn’t realize that [those pains] are from stress.”

Even in a stable and supported environment, managing diabetes can be challenging. After a disaster, a patient with diabetes needs extra support. Here are some additional resources to aid clinicians in helping patients with diabetes prepare:

- Migrant Clinicians Network offers several diabetes-specific resources in English and Spanish that can be adapted for use in preparation for a disaster on the MCN Diabetes page: https://www.migrantclinician.org/issues/diabetes
- MCN is committed to helping communities to prepare for disasters as the climate crisis continues. Sign up for our active blog, Clinician to Clinician, to hear more about our initiatives and access new resources: www.migrantclinician.org/blog
- MCN’s Witness to Witness offers extensive resources on managing stress and anxiety: http://migrantclinician.org/w2w.

References

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Virtual Conference
May 17-18, 2022
https://www.farmworkerjustice.org/blog-post/environmental-justice-symposium/

North American Refugee Health Conference
Society of Refugee Healthcare Providers
Cleveland, OH
June 23-25, 2022
https://refugeesociety.org/narhc-conference/

Revolutionizing the Health of Undocumented Communities
Pre-Health Dreamers
Virtual Conference
June 25, 2022
https://www.phdreamers.org/annualconference

National School-Based Health Care Conference
School-Based Health Alliance
Virtual Conference
June 27-28, 2022
https://www.sbh4all.org/national-conference-registration/

Community Health Institute (CHI) & Expo
National Association of Community Health Centers
Orlando, FL
August 22-24, 2022
https://www.nachc.org/events/community-health-institute-chi-expo/