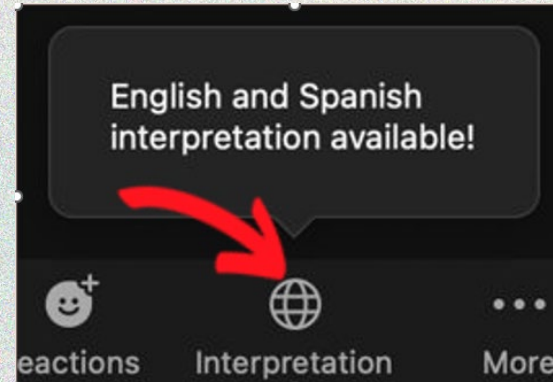
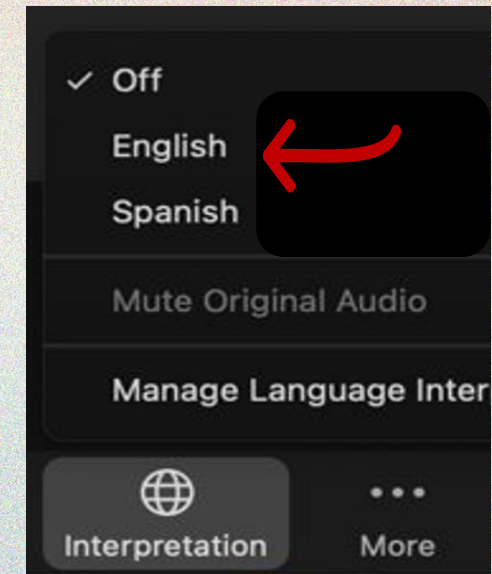


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# Emergency Management

Protecting Migratory and Seasonal Agricultural Workers  
During the Hurricane Season

**Thursday, September 11, 2025**

**10 am PT/ 12 pm CT/ 1 pm ET & AT**



# Continuing Education



**Migrant Clinicians Network is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation.**



**The AAFP has reviewed Emergency Management: Protecting Migratory and Seasonal Agricultural Workers During the Hurricane Season and deemed it acceptable for up to 1.00 Live AAFP Prescribed credit(s). Term of Approval is from 09/11/2025 to 09/11/2025. Physicians should claim only the credit commensurate with the extent of their participation in the activity.**

**Participants completing this educational activity (80% time in session) and completion of the post session evaluation will be awarded 1.0 contact hour.**



# Disclosure of Relevant Financial Relationships

**We have no relevant financial relationships that relate to this presentation, nor do we have any relevant financial relationships with ineligible companies whose primary business is producing, marketing, selling, reselling, or distributing healthcare products used by or on patients.**





# Today's Speaker

- Marysel Pagán-Santana, DrPH, MS
- Director of Environmental and Occupational Health
- Senior Manager for Puerto Rico
- Migrant Clinicians Network





# Objectives

- Understand the health-related factors for weather-related emergencies and disasters in the US.
- Describe the impact of hurricanes on MSAWs and employers.
- Explore and adapt prevention and mitigation actions for MSAWs and employers during emergencies.



# Assessment of weather emergencies and their impact

## Weather Emergencies

- **Extreme Heat**
- **Floods**
- **Droughts**
- **Hurricanes/Storms**
- **Air Quality**
- **Snowfall**

## Systems, Public Policy and Regulations

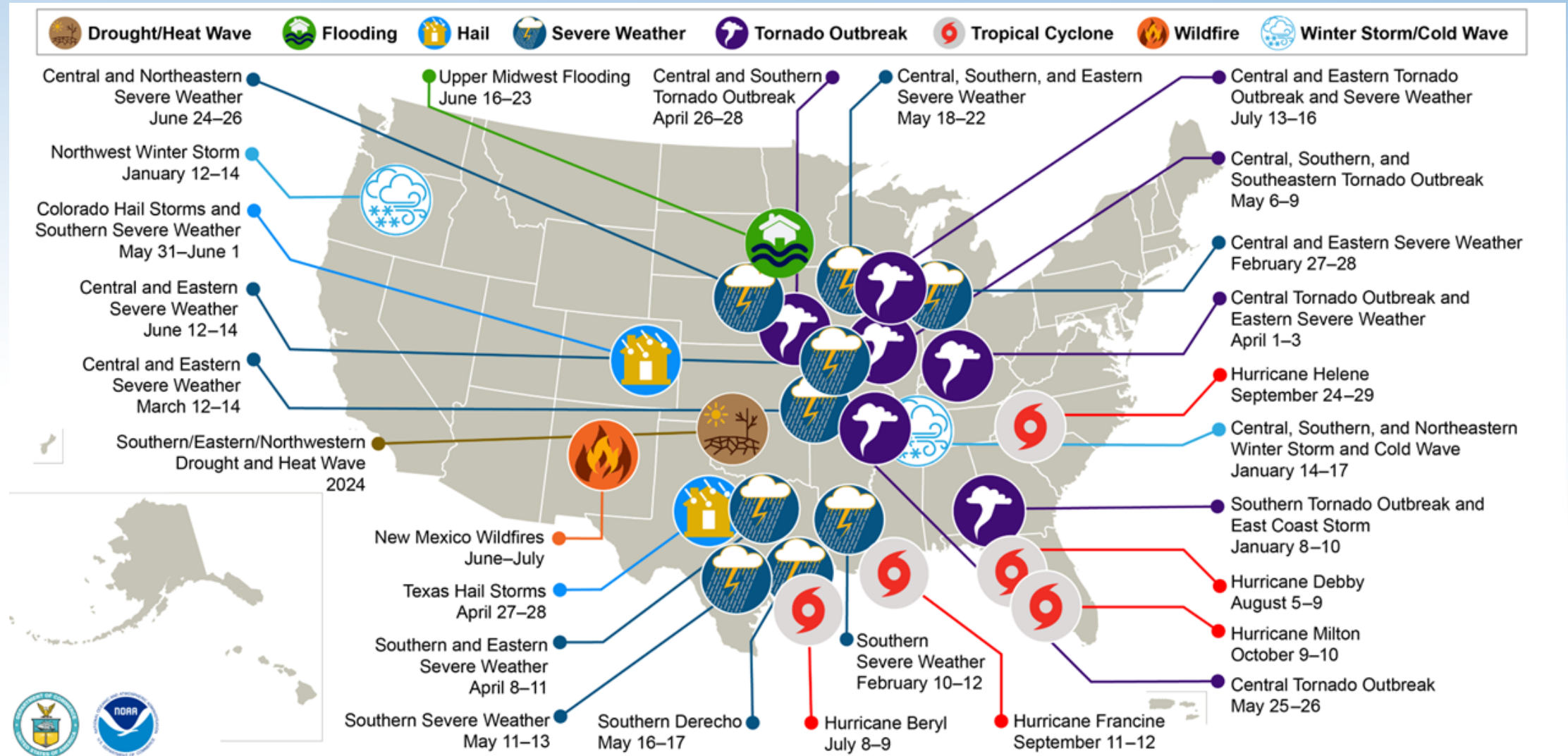
- **Laws and regulations (health & safety at work, energy, resource management)**
- **Comprehensive emergency management**
- **Access to health care**
- **Sustainability and endurance of infrastructure**

## Outcomes

- **Displacement/Movement**
- **Impact on Mental Health**
- **Illnesses and Injuries**
- **Deaths**



# Figure 1. U.S. 2024 Billion-Dollar Weather Disasters



*This map denotes the approximate location for each of the 27 separate billion-dollar weather and climate disasters that impacted the United States in 2024.*

Source: NOAA



# Challenges to Agricultural Industry

**Crop damage**

**Supply chain interruption**

**Soil displacement**

**Workforce**

**Infrastructure**

**Crop calendar/  
Production process**





## Recent Events in the US and Territories

### Hurricanes Irma/Maria

- 80% crop loss in Puerto Rico
- 69% of farmers experienced at least one month of food insecurity in the aftermath

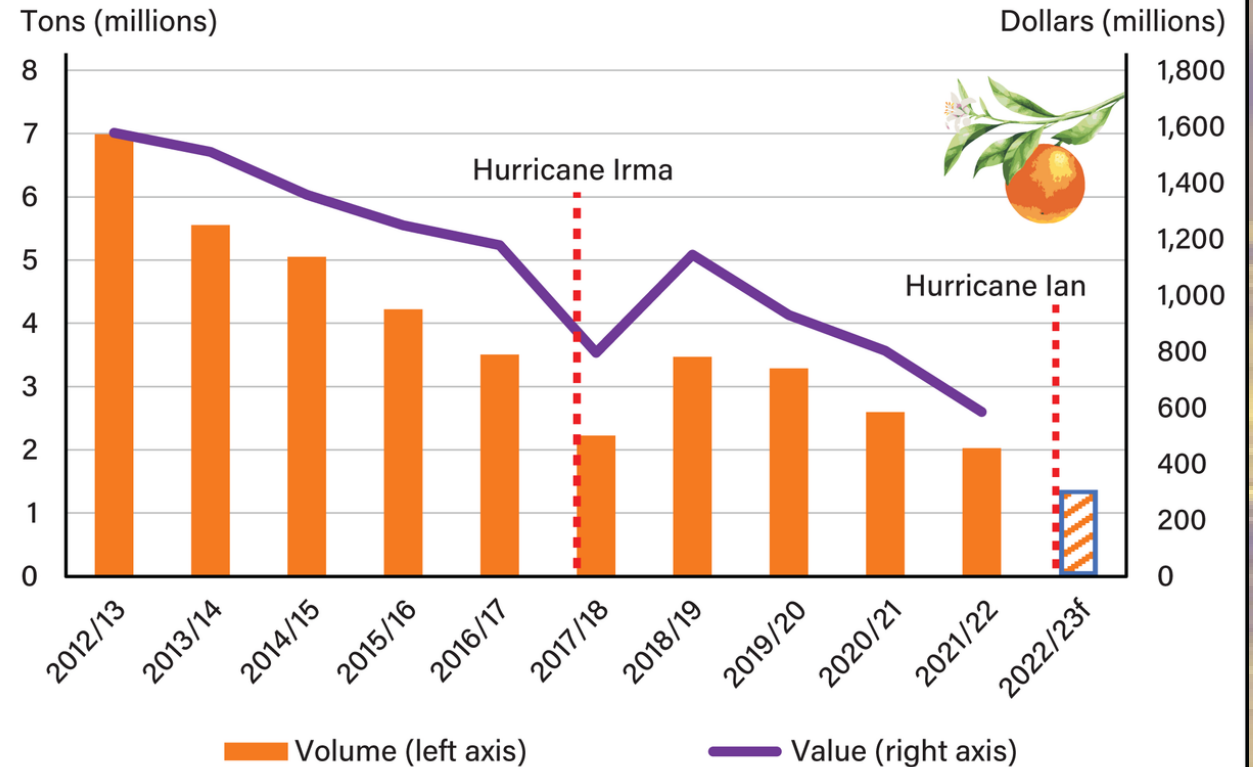


# Recent Events in the US and Territories

## Hurricane Ian

Florida citrus production, volumes and values, 2012/13-2022/23f

USDA Economic Research Service  
U.S. DEPARTMENT OF AGRICULTURE



Notes: f = forecast. The forecast for 2022/23 does not take into consideration any losses caused by Hurricane Ian. Losses will be included in a forecast that will be released at a later date.

Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service, Citrus Summary Reports, 2013-22.





## Recent Events in the US and Territories

Hurricane Helene's significant damage to pecan farms in Georgia.

- Experts estimate the cost to farmers, timber growers and other agribusinesses from Florida to Virginia will reach more than \$10 billion.





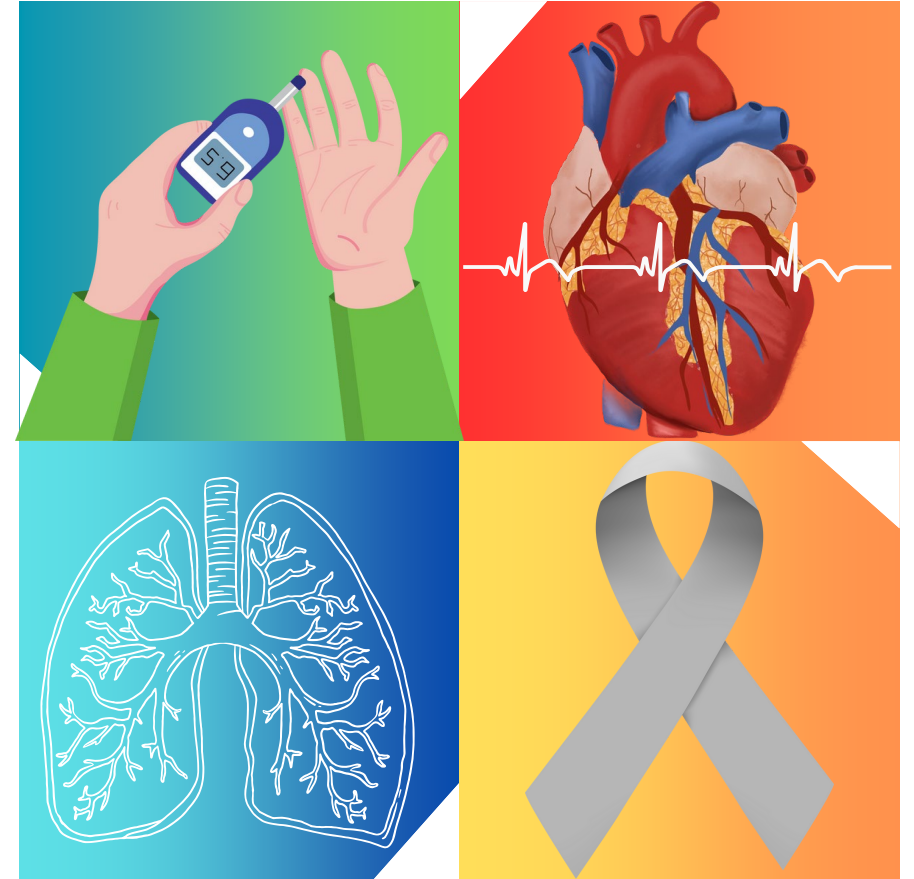
## ***Who can be impacted?***

*Individuals:*

- *Who work outside*
- *Have low income*
- *Have a chronic illness*
- *Are Pregnant*
- *Are Elderly*
- *Are Children*
- *Are Mobile*

## Health conditions that can be affected:

- Diabetes
- Heart disease
- Dementia
- Chronic obstructive pulmonary disease
- Asthma
- Mental health disorders
- Others





# What about the health of MSAWs?

- MSAWs may face more challenges related to the impacts of weather emergencies, including flooding
- Often working in areas in danger
- Physical labor
- Working outdoors
- May have other health-related factors that make them more susceptible to:
  - Heat
  - Pesticide exposure
  - Dehydration
  - Underlying lung problems
  - Exposure to other air pollution



MSAW dig an irrigation canal around a field of strawberries as the Salinas River begins to overflow its banks on January 13, 2023 in Salinas, California. Several atmospheric river events continue to pound California with record rainfall and high winds. (Photo by Justin Sullivan/Getty Images)

# Additional Challenges

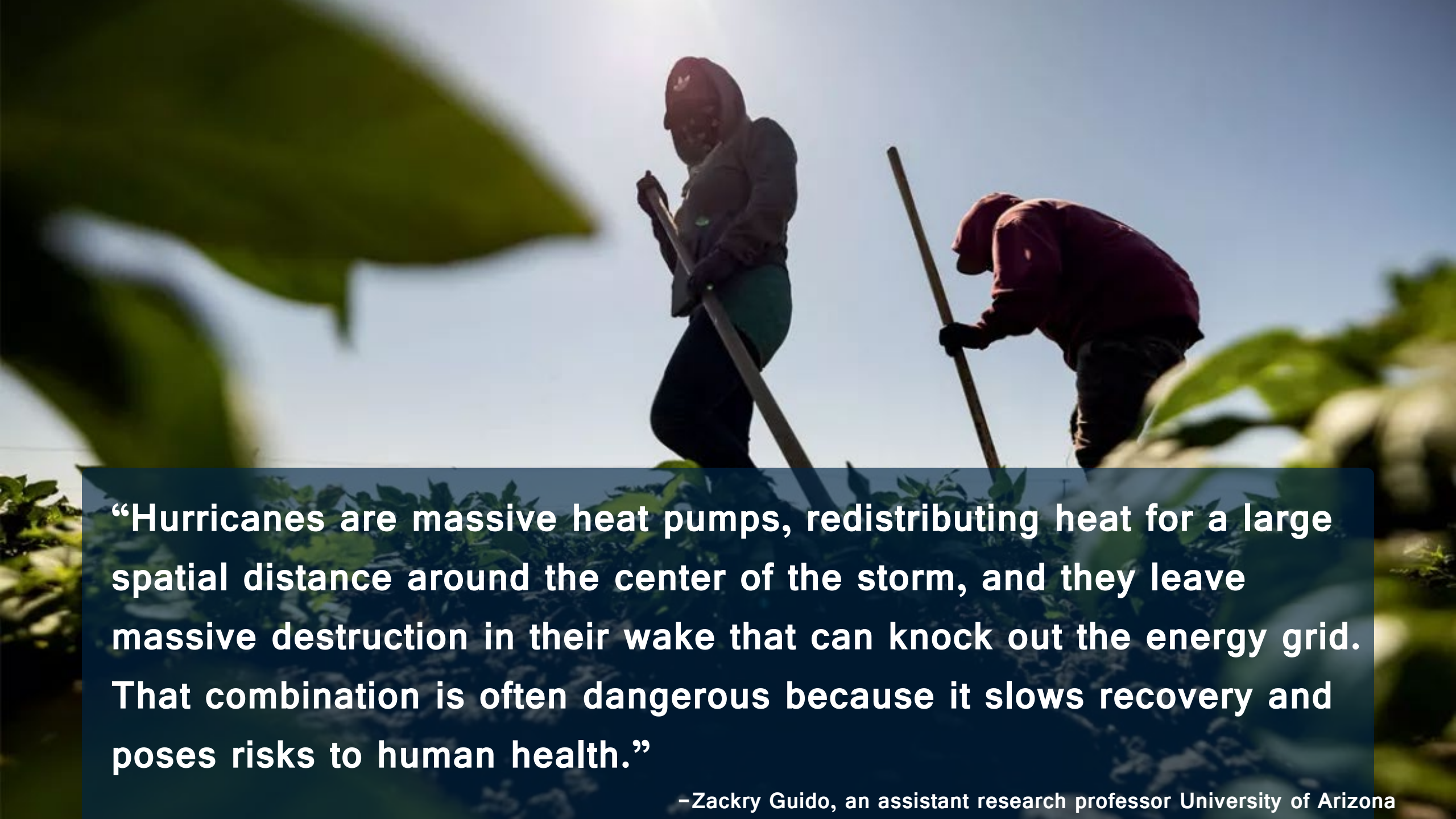
- Differences in their language, customs and traditions
- Wage
- Inherent dangers and health impacts of their work
- Mobility/displacement
- Limited access to health care or financial resources





# How do flooding events impact the MSAW workforce?

- Chemical exposure due to spills
- Injuries/Illness
- Heat after the disaster
- Falls/injuries during hazard mitigation events
- Mental health and wellbeing
- Viral/bacterial infections
- Chronic diseases management and care interrupted



**“Hurricanes are massive heat pumps, redistributing heat for a large spatial distance around the center of the storm, and they leave massive destruction in their wake that can knock out the energy grid. That combination is often dangerous because it slows recovery and poses risks to human health.”**

**–Zackry Guido, an assistant research professor University of Arizona**



# LIKELIHOOD OF DEATH FROM HEAT-RELATED ILLNESS

Risk to  
Average  
Worker



Construction  
Workers

13x

MSAWs

35x

According to OSHA 2024, nearly 3 out of 4 workers who die from heat-related causes die within their first week on the job.





# Biological Agents

- Mosquitoes
- Mold and mildew
- Bacteria in contaminated water





# Impact on Community Health Centers

Operational

Clinical

Programmatic

Staff



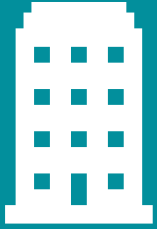
What can we do?

**Strategies to Protect the Health  
of Communities That are Being  
Impacted by Extreme Weather Events**



# Community Health Centers and Change in Weather

1



## Infrastructure

- Energy and water systems and back-ups (solar)

2



## Relationships with the community and partnerships

- Health Center integration with community resources
- Community mobilization

3



## Clinical training and support

- Patient care
- Community-relevant resources
- Appropriate language and support for Limited English Proficiency (LEP) speakers.

4



## Mental health, well-being, and support for health center staff

- Psychosocial support for staff impacted by disasters while caring for patients who are also impacted

# Why do we need to engage communities in Emergency Management?

## History

- Recent experiences with natural disasters and appropriate responses.

## National Emergency Management Framework

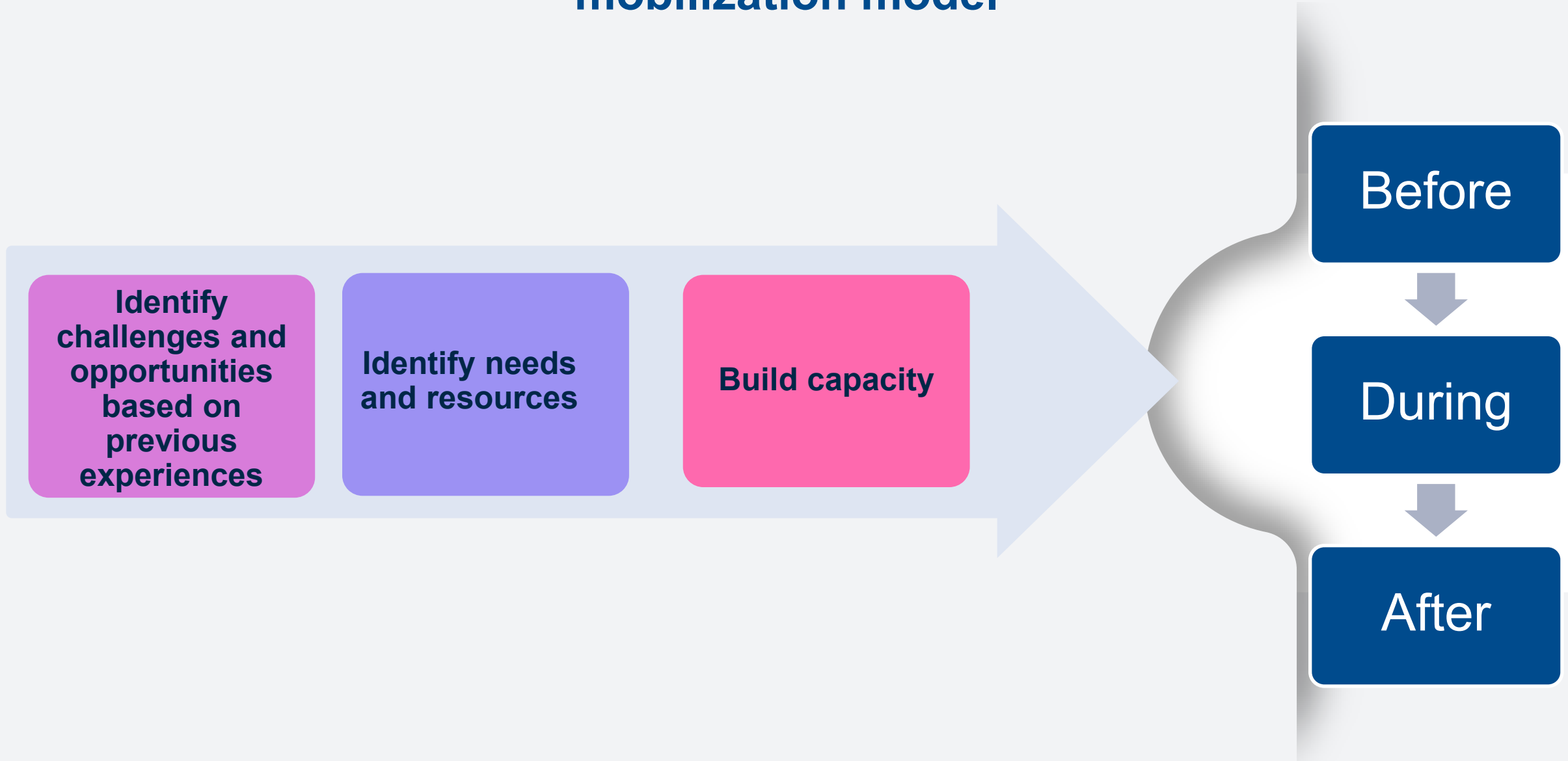
- Limitations and challenges
- “Bottom Up” Approach

## Compliance and Management

- Health Center mission
- Direct and indirect benefits for the health centers



# Working with communities using the community mobilization model







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# Community Mobilization



# Impact on Communities

Community  
strengthening

Capacity building

Self-efficacy



# ***Role of Clinicians***



**Seen as trusted messengers**



**Understand healthcare options and connection to care**

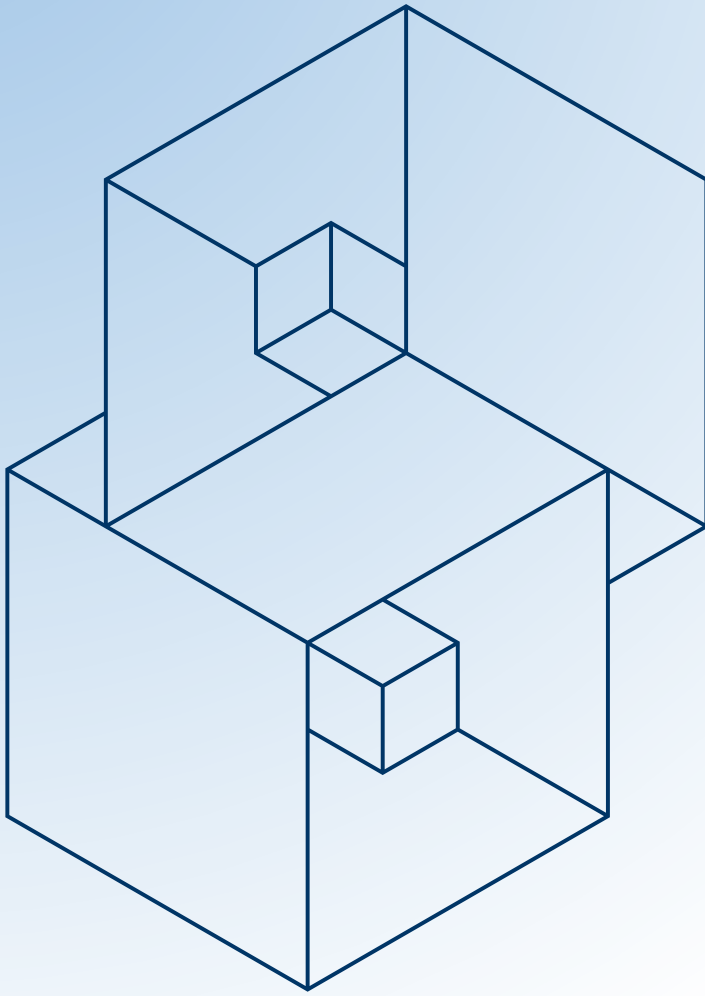


**Support preventive practices**



**Adapt information to the needs of the MSAW community**





Talk to your patients and community about...

- Proper chemical storage
  - Secure cabinets
  - Chemical inventory
  - Personal Protective Equipment (PPE)
- Preventing risks at work
- Emergency Plans
  - Care management
  - Mental health

# Heat-Related Illness

- Heat-related Illness and MSAWs - Training Curriculum and Facilitator Guide (SPA/ENG - <http://bit.ly/3EcHayH>)
- Heat-Related Illness Clinician's Guide - June 2021 (SPA/ENG - <http://bit.ly/3EzHjhc>)







## Respiratory Health

Nadie sabe que respira...  
¡hasta que le falta el aire!  
[Clear the Air! Protect Your  
Health from Bad Air]

# Speaker Contact Information



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**Senior Manager for Puerto Rico, MCN**



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# Questions & Evaluation

