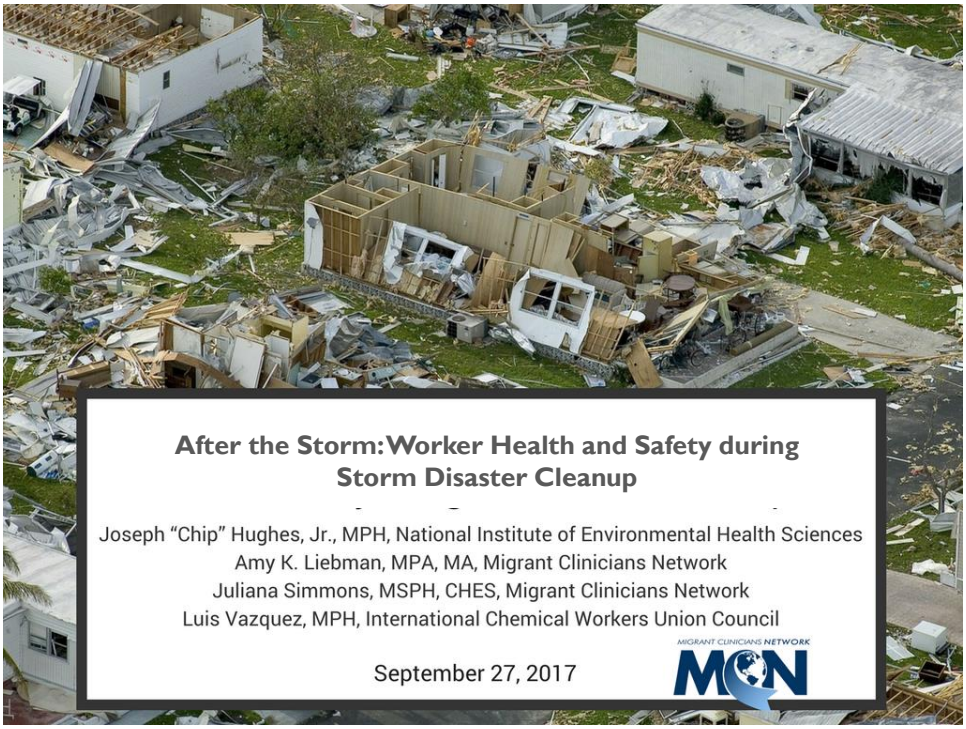


Housekeeping

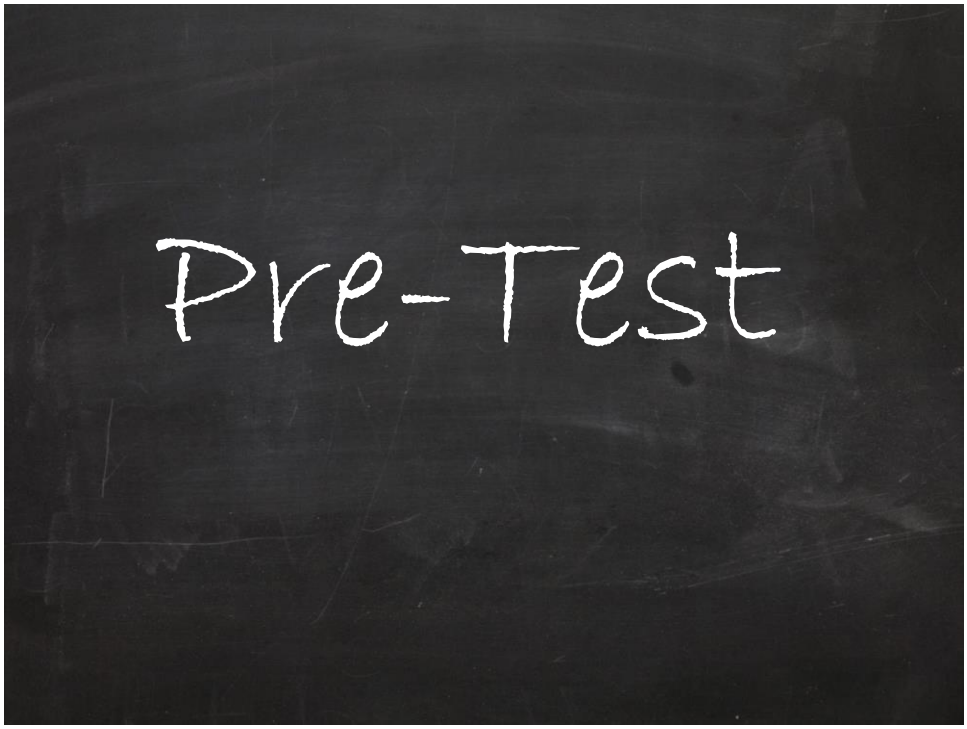
- If you experience technical difficulties, please call **(530) 487-0727** for assistance.
- Please participate in all polls and the evaluation.
- For any questions, please utilize the question box.

Learning Objectives

Participants will be able to…

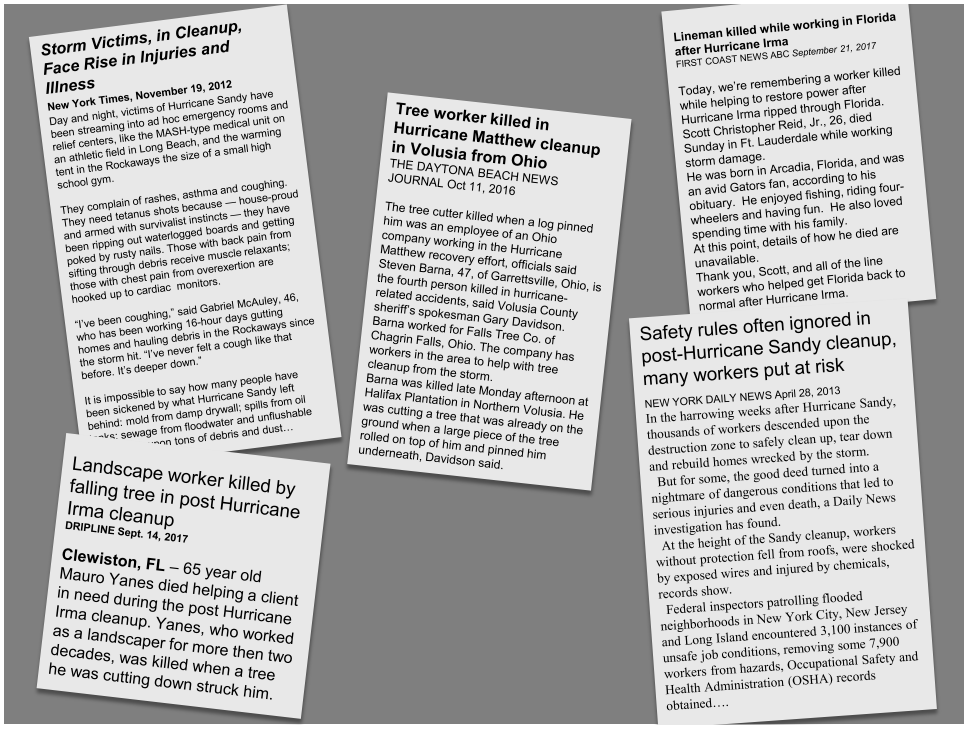
1. Identify the most critical and common hazards encountered by workers and residents engaged in post-disaster demolition and reconstruction.
2. Articulate the best strategies to educate workers and others about how to prevent injuries and illness during the clean-up following hurricanes and superstorms.
3. List at least three resources they can use to guide workers and residents during post-disaster demolition and reconstruction.

Community health workers and clinicians promote worker health and safety



Stages of disaster response

Preparedness	The Event	First Response	Intermediate and long-term recovery and rebuilding



Storm Victims, in Cleanup, Face Rise in Injuries and Illness

New York Times, November 19, 2012

Day and night, victims of Hurricane Sandy have been streaming into ad hoc emergency rooms and relief centers, like the MASH-type medical unit on an athletic field in Long Beach, and the warming tent in the Rockaways the size of a small high school gym.

They complain of rashes, asthma and coughing. They need tetanus shots because — house-proud and armed with survivalist instincts — they have been ripping out waterlogged boards and getting poked by rusty nails. Those with back pain from sifting through debris receive muscle relaxants; those with chest pain from overexertion are hooked up to cardiac monitors.

"I've been coughing," said Gabriel McAuley, 46, who has been working 16-hour days gutting homes and hauling debris in the Rockaways since the storm hit. "I've never felt a cough like that before. It's deeper down."

It is impossible to say how many people have been sickened by what Hurricane Sandy left behind: mold from damp drywall; spills from oil [illegible]; sewage from floodwater and unflushable [illegible] tons of debris and dust…

Tree worker killed in Hurricane Matthew cleanup in Volusia from Ohio

THE DAYTONA BEACH NEWS JOURNAL Oct 11, 2016

The tree cutter killed when a log pinned him was an employee of an Ohio company working in the Hurricane Matthew recovery effort, officials said Steven Barna, 47, of Garrettsville, Ohio, is the fourth person killed in hurricane-related accidents, said Volusia County sheriff's spokesman Gary Davidson. Barna worked for Falls Tree Co. of Chagrin Falls, Ohio. The company has workers in the area to help with tree cleanup from the storm.

Barna was killed late Monday afternoon at Halifax Plantation in Northern Volusia. He was cutting a tree that was already on the ground when a large piece of the tree rolled on top of him and pinned him underneath, Davidson said.

Lineman killed while working in Florida after Hurricane Irma

FIRST COAST NEWS ABC September 21, 2017

Today, we're remembering a worker killed while helping to restore power after Hurricane Irma ripped through Florida. Scott Christopher Reid, Jr., 26, died Sunday in Ft. Lauderdale while working storm damage.

He was born in Arcadia, Florida, and was an avid Gators fan, according to his obituary. He enjoyed fishing, riding four-wheelers and having fun. He also loved spending time with his family.

At this point, details of how he died are unavailable.

Thank you, Scott, and all of the line workers who helped get Florida back to normal after Hurricane Irma.

Safety rules often ignored in post-Hurricane Sandy cleanup, many workers put at risk

NEW YORK DAILY NEWS April 28, 2013

In the harrowing weeks after Hurricane Sandy, thousands of workers descended upon the destruction zone to safely clean up, tear down and rebuild homes wrecked by the storm.

But for some, the good deed turned into a nightmare of dangerous conditions that led to serious injuries and even death, a Daily News investigation has found.

At the height of the Sandy cleanup, workers without protection fell from roofs, were shocked by exposed wires and injured by chemicals, records show.

Federal inspectors patrolling flooded neighborhoods in New York City, New Jersey and Long Island encountered 3,100 instances of unsafe job conditions, removing some 7,900 workers from hazards, Occupational Safety and Health Administration (OSHA) records obtained….

Landscape worker killed by falling tree in post Hurricane Irma cleanup

DRIPLINE Sept. 14, 2017

Clewiston, FL – 65 year old Mauro Yanes died helping a client in need during the post Hurricane Irma cleanup. Yanes, who worked as a landscaper for more then two decades, was killed when a tree he was cutting down struck him.

What are employers' responsibilities?

The Occupational Safety and Health Act requires employers to provide a safe and healthful workplace free of recognized hazards and to follow OSHA standards. Employers' responsibilities also include providing training, medical examinations and recordkeeping.

For more information about OSHA, go to http://www.osha.gov or call 1-800-321-OSHA (6742)

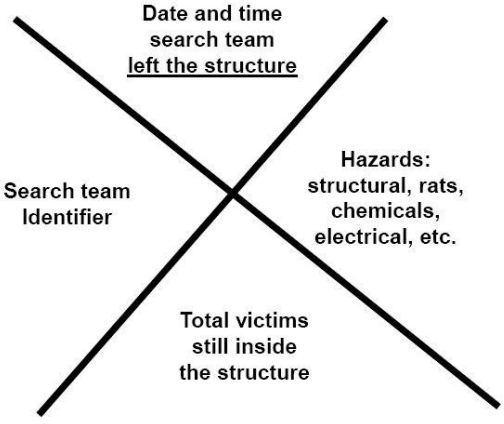
What are workers' responsibilities?

- ✓Follow the employer's safety and health rules and wear or use all required gear and equipment
- ✓Follow safe work practices for your job, as directed by your employer
- ✓Report hazardous conditions to a supervisor.
- ✓Report hazardous conditions to OSHA, if employers do not fix them


Case
Study

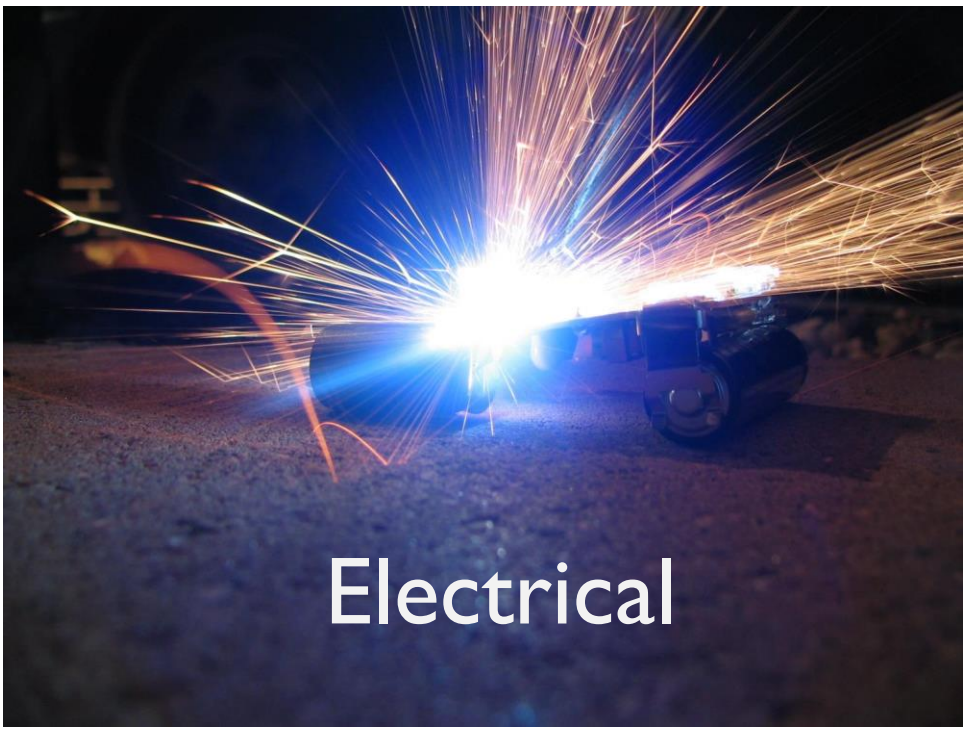

HAZARD
HAZARD
HAZARD
HAZA

FEMA search marking system can warn you of danger



If you do not see a FEMA search marking or other FEMA postings your building has not been evaluated


Debris Piles and
Unstable Work Surfaces


Electrical


Mold


Water and Sanitation


Chemicals and Air Contaminants (lead, asbestos, silica)


DANGER
CARBON MONOXIDE


Industrial Contamination


Snakes, other vermin, mosquitos, and animal remains

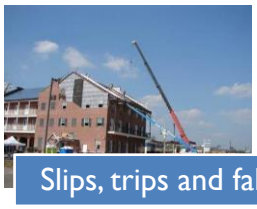
Working conditions


Heat


Cold


Wet (Trench Foot)


Noise


Slips, trips and falls

How can you help workers?

Know the "big picture"

- Risks
- Short and long term health effects
  - ✓ Infectious Disease
  - ✓ Chemical Exposures
  - ✓ Traumatic Stress
- Vaccinations (Tetanus and Hep B)

Knowledge of workers' rights

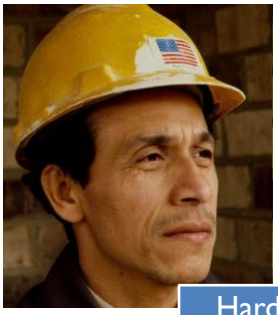
Familiarity with health and safety resources

- ✓ Where can workers get trained?
- ✓ What are the available educational materials?


Know how to communicate the risk and tailor the message for each patient
CAUTION
©www.earldotter.com


What do workers need to protect themselves?
Training
PPE
Knowledge of rights
Community resources

Personal Protective Equipment



Hard Hat

Gloves

Respiratory protection

Safety glasses with side shields

Steel-toed boots

Safety Data Sheet (SDS)

©Earl Dotter- NFMC

SAFETY DATA SHEET

Section 1. Identification

Product Name:	**Ammonia, Anhydrous**
Synonyms:	Ammonia
CAS REGISTRY NO:	7664-41-7
Supplier:	Tanner Industries, Inc. 735 Davisville Road, Third Floor Southampton, PA 18966
Website:	www.tannerind.com
Telephone (General):	215-322-1238
Corporate Emergency Telephone Number:	**800-643-6226**
Emergency Telephone Number:	**Chemtrec: 800-424-9300**
Recommended Use:	Various Industrial / Agricultural

Section 2. Hazard(s) Identification

Hazard: Acute Toxicity, Corrosive, Gases Under Pressure, Flammable Gas, Acute Aquatic Toxicity

Classification: Acute Toxicity, Inhalation (Category 4)
Skin Corrosion / Irritation (Category 1B)
Serious Eye Damage / Irritation (Category 1)
Gases Under Pressure (Liquefied gas)
Flammable Gases (Category 2)
Acute Aquatic Toxicity (Category 1)

Note: (1 - Most Severe / 4 - Least Severe)

Pictogram:

Signal word: **Danger**

Hazard statements:
Harmful if inhaled.
Causes severe skin burns and serious eye damage.
Flammable gas.
Contains gas under pressure; may explode if heated.
Very toxic to aquatic life.

Precautionary statements: Avoid breathing gas/vapors.
Use only outdoors or in well-ventilated area.
Wear protective gloves, protective clothing, [illegible] protection, face protection.
Keep away from heat, sparks, open flames and other ignition sources. No smoking.

applicable. See section 13 (Disposal Considerations).

NFPA Rating:

HMIS Classification:

ANHYDROUS AMMONIA	
HEALTH	3
FLAMMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	H

NFPA Numbering System:
0 = Least Hazardous / 4 = Most Hazardous

HMIS Hazard Index:
0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe

Section 3. Composition / Information on Ingredients

CHEMICAL NAME: Ammonia, Anhydrous
CAS REGISTRY NO: 7664-41-7
SYNONYMS: Ammonia
CHEMICAL FA[illegible] [illegible]ganic nitrogen compounds
COMPOS[illegible]: 99+% Ammonia

Section 4. First Aid Measures

IF INHALED: Immediately remove person to fresh air and keep comfortable for breathing. In case of severe exposure or if irritation persists, breathing difficulties or respiratory symptoms arise, seek medical attention. If not breathing, administer artificial respiration. If trained to do so, administer supplemental oxygen, if required.
IF ON SKIN: Immediately rinse skin and contaminated clothing with plenty of water before removing clothes. Clothing that has been contacted by liquid ammonia may freeze to the skin. Thaw frozen clothing from skin before removing. Flush skin with copious amounts of tepid water for a minimum of 20 minutes. Do not rub or apply topical, occlusive compounds, such as ointments, certain creams, etc., on affected area. For liquid ammonia contact, seek immediate medical attention. For severe vapor contact or if irritation persists, seek medical attention.
IF IN EYES: Immediately rinse continuously with copious amounts of tepid water for a minimum of 20 minutes. Eyelids should be held apart and away from eyeball for thorough rinsing. Do not rub or apply topical, occlusive compounds, such as ointments, certain creams, etc., on affected area. Seek medical attention.
IF SWALLOWED: Rinse mouth. Do not induce vomiting. If conscious, give large amounts of water to drink. May drink [illegible]ge juice, citrus juice or diluted vinegar (1:4) to counteract ammonia. If unconscious, do not give anything by mouth. Seek [illegible]al attention.

NOTE TO PHYSICIAN: Respiratory injury may appear as a delayed phenomenon. Pulmonary [illegible] follow chemical bronchitis. [illegible]nt with necessary ventilation actions, including oxygen [illegible]ant consideration.

Section 8. Exposure Controls / Personal Protection

EXPOSURE LIMITS FOR AMMONIA: (Vapor)

OSHA	50 ppm,	35 mg / m^3 PEL	8 hour TWA
NIOSH	35 ppm,	27 mg / m^3 STEL	15 minutes
	25 ppm,	18 mg / m^3 REL	10 hour TWA
	300 ppm,	IDLH	
ACGIH	25 ppm,	18 mg / m^3 TLV	8 hour TWA
	35 ppm,	27 mg / m^3 STEL	15 minutes

PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION: Chemical splash goggles should be worn when handling anhydrous ammonia. A face shield can be worn over chemical splash goggles as additional protection. Do not wear contact lenses when handling anhydrous ammonia. Refer to 29 CFR 1910.133 for OSHA eye protection requirements.

SKIN PROTECTION: Ammonia impervious gloves and clothing (such as neoprene, butyl and Teflon) should be worn to prevent contact during normal operations, such as loading/unloading and transfers.
Chemical boots can be worn as additional protection.

RESPIRATORY PROTECTION: Respiratory protection approved by NIOSH for ammonia must be used when applicable safety and health exposure limits are exceeded. For escape in emergencies, NIOSH approved respiratory protection should be used, such as a full-face gas mask and canisters/cartridges approved for ammonia or SCBA. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm (IDLH).
Refer to 29 CFR 1910.134 and ANSI Z88.2 for OSHA respiratory protection requirements.
Also refer to 29 CFR 1910.111 for respiratory protection requirements at bulk installations.

VENTILATION: Local exhaust should be sufficient to keep ammonia vapor below applicable exposure standards.

FOR A HAZARDOUS MATERIAL RELEASE RESPONSE: Level A and/or Level B ensemble including positive-pressure SCBA should be used. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm (IDLH).

gases o vapores inflamables. Deben usarse detectores de gas cuando existe la posibilidad de que se produzcan escapes de gases tóxicos. En los sitios próximos a cualquier posible exposición debe haber regaderas y estaciones de emergencia para lavarse los ojos. Use equipo a prueba de explosiones. Asegúrese de cumplir con todos los reglamentos nacionales y locales.

Equipo de protección personal: Anteojos de protección. Guantes. Ropa de protección. Ventilación insuficiente: use protección para respirar. Careta de plástico para protección del rostro.

Framework for helping workers stay safe on the job

Assess the environment	Acknowledge potential risk	Prepare for the risks: Training and PPE • Physical • Knowledge • Emotional	Where to look for more resources • Health • Safety

Going back to the original case study, how would you apply what you've learned to help the worker in question?

Resources

National Orgs

- Migrant Clinicians Network (MCN)
- National Council for Occupational Safety and Health (COSH)
- AgriSafe Network — Protecting the People Who Feed the World

Local

- FE Y JUSTICIA Worker Center
- Interfaith Worker Justice

Your local Community Health Center

Federal

- CDC — Centers for Disease Control and Prevention
- FEMA
- OSHA — Occupational Safety and Health Administration
- NIH NIEHS

Local Resources

- Regional OSHA
- FEMA Disaster Recovery Center
- Utility companies
- Health Department / Animal Control
- Local health center
- Poison control center
- Worker Center
- 911 (it's important for workers to know the address where they are working)

Additional Training Required

This webinar serves as to serve as an introduction and we hope it will help you help workers and residents.

Regardless of work scope, many topics covered corresponding OSHA standards – such standards must be met in order to safely and legally perform associated job duties.

Cleanup workers should always keep in mind that when in doubt about the safety of an activity, stop what you are doing and ask questions. Be sure you are safe before continuing.

Contact the National Clearinghouse for Worker Safety and Health Training (202-331-7733) and review the website *https://tools.niehs.nih.gov/wetp/index.cfm* for additional information on hurricane and flood response and cleanup.

You may also contact us regarding training for hurricane response and cleanup activities.

National Institute of Environmental Health Sciences
Your Environment. Your Health.

WTP: 30 Years of Preparing Workers for Hazardous Materials and Emergency Response

Increasing **worker safety and health** across the country.

Overall: Trained approximately **3 million workers** since 1987

Helps businesses and municipalities meet worker training needs and keep worksites and communities safer.

Increasing the country's capacity for **disaster preparedness and emergency response**.

Trained thousands of workers in response to **many of the worst U.S. natural and man-made disasters,** including:

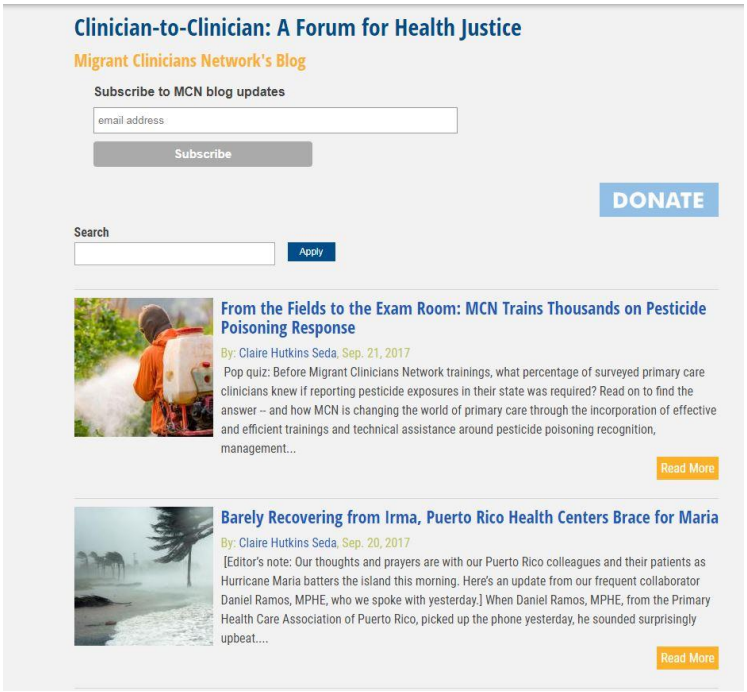
- World Trade Centers
- Hurricane Katrina
- Hurricane Sandy
- Deepwater Horizon Gulf Oil Spill
- Ebola/Biosafety Response

Providing **job and life skills training program** to unemployed and underemployed individuals.

Reached over 10,800 individuals in 30 communities across the U.S., with an **average job placement rate of 71%.**

Annual federal investment of **$3.5 million generates a $100 million return**

National Institutes of Health
U.S. Department of Health and Human Services



http://www.migrantclinician.org/community/blog.html

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Please take the Participant Evaluation

Thank You!

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