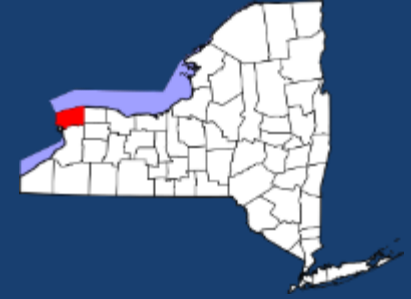


# Climate Change and Health Adaptation Project:

Niagara County  
Department of Health



# About Niagara County



- Located in Western NY; situated between Lake Ontario (north), Niagara River (west), and Tonawanda Creek (south)
- Total Population: 212,666
  - 100,156 housing units
  - Average life expectancy of residents: 77.3 years
- Composition: 70% urban (3 city centers) and 30% rural
  - Niagara Falls has the highest poverty level at 23.5% (1.5x that of New York State)
  - The Tuscarora Nation, which is a federally recognized tribe, is also located within the county

# Population Health

- Niagara County is ranked # 51 out of 62 counties in New York State (County Health Rankings)
- 15.2% of residents have at least 1 disability
  - Of which, 42.9% are 65 years or older
- 2.9% of residents do not have insurance
  - Higher for specific demographic groups: 11.6% for Black/African Americans; 4.3% for Hispanics; and 8.7% for those with incomes below the poverty threshold
- Ratio of residents to primary care physicians is 2,610: 1

# Climate Change & Emergency Preparedness

- Flooding is Niagara County's top natural hazard concern due to surrounding bodies of water and major flooding in the past
  - Lake Ontario Shoreline Flood in 2017
  - Flash flooding in Lockport/Niagara Falls in July 2021



→ Flooding poses risk of fatalities and serious injuries if people do not evacuate areas that have flooded, enter floodwaters, or when people are not careful in the environment after the flood has passed.

→ Other risks: utility outages, disrupted transportation routes, pollution of drinking water; home damage; skin conditions and GI illness from exposure to floodwater



# Climate Change & Emergency Preparedness

- Snowstorms and Blizzards often caused by “Lake Effect Snow”

## Average Annual Snowfall

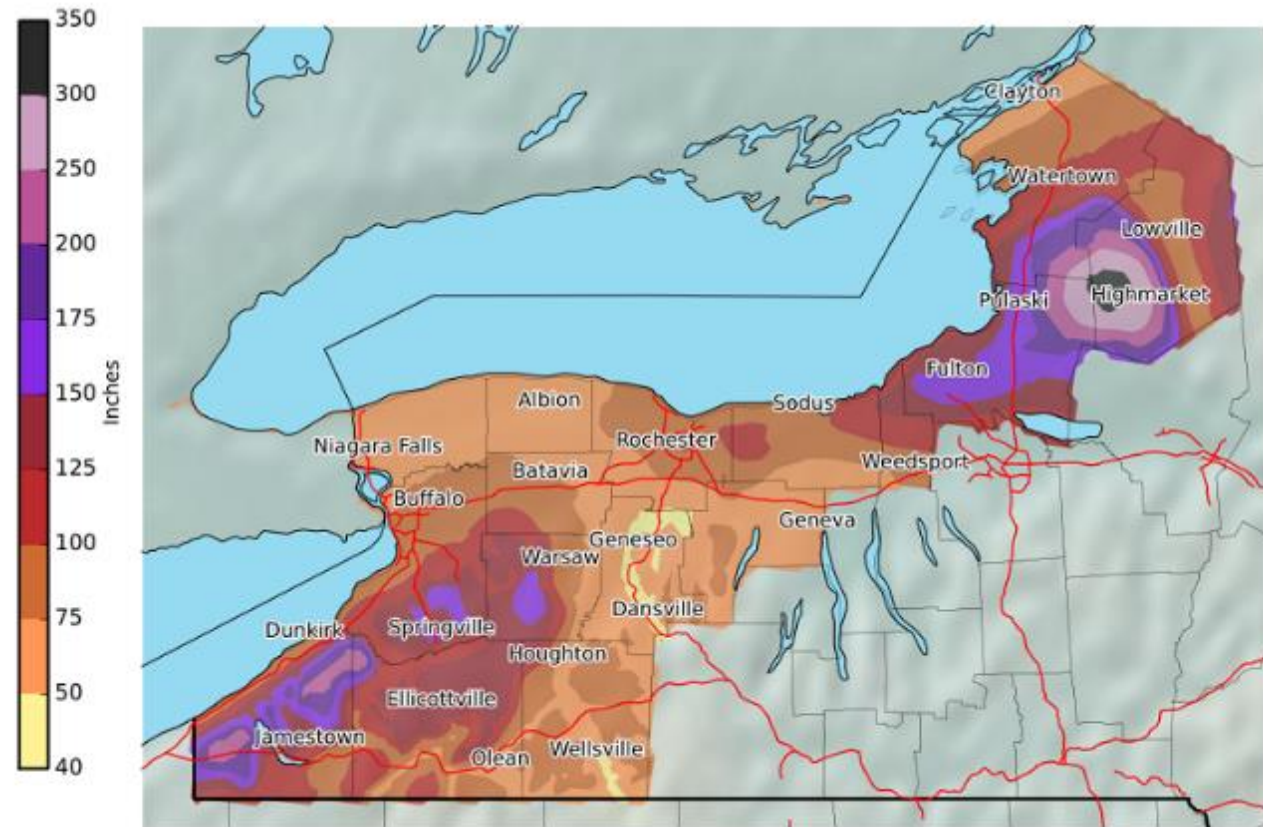
(National Weather Service)



## City of Niagara Falls

Days of Snow: 52.8

Avg Snowfall”: 76.1”





# Climate Change & Emergency Preparedness

- Winter Storm Elliott (December 2022) was the most challenging blizzard in the last century
  - 5 days of heavy snow
  - NOAA Storm Events Database: 32 deaths
    - Erie County documented numbers as high as 47 deaths (7 from delayed EMS response; 18 were found outside in the snow; 4 were found in vehicles; 4 died in snow shoveling/blowing incidents; 12 from no power/heat; 1 other)

→ Incident also rapidly increased water levels in Lake Erie and Lake Ontario



# Emergency Preparedness of Residents

- From June – September 2023, the Niagara County Department of Health conducted a community engagement survey targeting Niagara County residents. *Survey had 1,150 respondents.*
- Question asking what steps participants have taken to prepare for an emergency:
  - Have taken special trainings (First Aid, CPR, etc.) → 50.6% of respondents
  - Signed up for emergency information and alert systems → 44.9% of respondents
  - Assembled a disaster supply kit → 27.1% of respondents
  - Prepared and discussed a personal/family emergency plan → 43.0% of respondents

# Project Goals & Scope

- Goal: increase emergency preparedness knowledge and readiness of Niagara County residents
- Scope: utilize NYSACHO grant to create a “Safety-in-a-Bag” Project
  - Focus on educational resources
  - Signing up for local and state alert systems/downloading mobile preparedness app
  - Simultaneously build a basic kit
- Conduct 10 outreach/educational events by end of 2024



# Project Goals and Scope Continued

- Engage approximately 300 people
- Targeted populations:
  - Rural areas
  - Zip codes with lower levels of preparedness identified in 2023 survey
  - People living in flood-prone areas
- Partners:
  - School Districts
  - Senior Centers/Senior Housing
  - Medical Reserve Corps
  - Emergency Services



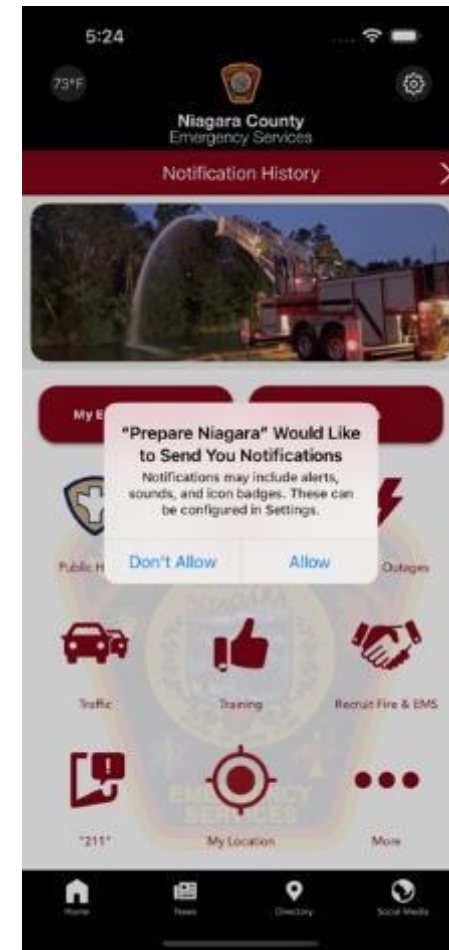
# “Safety-in-a-Bag”

- Contents:
  - Small first aid kit
  - Whistle
  - Drinking water pouches
  - Mylar thermal blanket
  - High calorie energy bar
  - Rain poncho
  - Hand squeeze flashlight
  - Surgical face masks
  - Emergency contact card
  - Educational materials



# “Safety-in-a-Bag”

- Educational materials included:
  - QR code to sign up for NY Alert (as well as additional directions in English)
  - Information on Prepare Niagara (local mobile app)
  - Emergency Kit (list of essential items along with additional items to consider)
- Brochures for:
  - Snow storm preparedness
  - Preparedness in populations with disabilities, access and functional needs
  - Preparedness for pets





## Sheltering-In-Place with Your Pets

**Select a safe room to stay.**  
Choose an interior room with no (or few) windows. You may also consider keeping your dog(s) on leash, and cat(s) in a carrier.

**Remove dangerous items.**  
This include tools, toxic products, or anything that can be potential hazards that have been stored/placed in the area.

**Close off small unsafe areas.**  
This includes vents or beneath heavy furniture where frightened cats may try to hide in.

**Offer your attention.**  
Your pet(s) may experience stress and disorientation during emergency situations. Your presence can often signal comfort and safety.



## Guide for Emergency Bag Essentials

### ♥ Individuals with a Mobility Disability

- Backup wheelchair (manual)
- Mobility device (cane, walker)
- Portable air pump



### ♥ Individuals with an Intellectual Disability

- Noise-canceling headphones
- Comfort items (sensory toys, snacks)
- Communication cards



### ♥ Individuals Who Are Deaf

- Pen and notebook for communication
- Weather alert radio (with display)
- Extra hearing aid batteries or chargers



### ♥ Individuals Who Are Blind

- Tactile Markers
- Emergency supplies with Braille labels



### ♥ Individuals Who Rely on Medication

- 7 days supply of prescribed medicines
- List of your prescription medicines, diagnosis, medical supply needs, and allergies
- Chemical ice packs for medicines that require refrigeration



## Trapped in a Car During a Snowstorm?

- ✓ Stay inside the car to avoid hypothermia and frostbite.
- ✓ Run the engine for about 10 minutes per hour for heat. Doing so, make sure to clear snow from the exhaust pipe to avoid gas poisoning.
- ✓ Wrap your body with extra clothing, blanket, or thermal blanket if you have one.
- ✓ Prepare to signal the rescuer.
  - Turn on the dome light at night when running the engine.
  - Tie a bright colored cloth, to your antenna.
  - Raise the hood of your car if it's not snowing.



## Emergency Kit

~List of Essential Items~



### ADDITIONAL ITEMS CHECK LIST:

<input type="checkbox"/> Disinfecting Wipes	<input type="checkbox"/> Feminine Supplies	<input type="checkbox"/> Prescription Medications
<input type="checkbox"/> Extra Pair of Glasses	<input type="checkbox"/> Infant Supplies	<input type="checkbox"/> Cash/Traveler's Checks
<input type="checkbox"/> Important Documents	<input type="checkbox"/> Local Maps	<input type="checkbox"/> Supplies for Pet
<input type="checkbox"/> Can Opener	<input type="checkbox"/> Books and Games	<input type="checkbox"/> Matches (Waterproof)



N C D O H



Sign-up for  
**NY Alert**

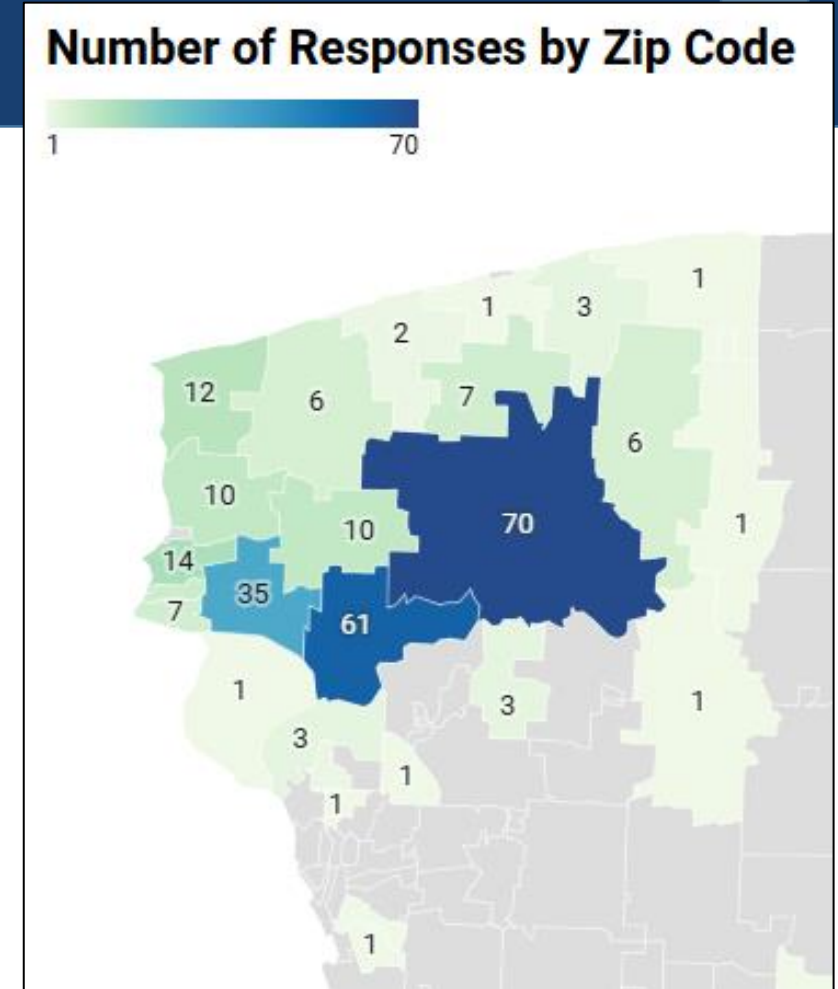
# Project Implementation Steps

1. Engage with community members at existing outreach events & schedule training sessions at local organizations/senior centers/apartment complexes
2. Participants will complete a pre-survey
3. NCDOH staff will walk participant through each item as they put it in their bag explaining its function and benefit
4. Answer any questions & talk with participant about additional steps they may choose to take to increase their personal preparedness
5. Conclude with a post-survey & participants get to take their bag home!



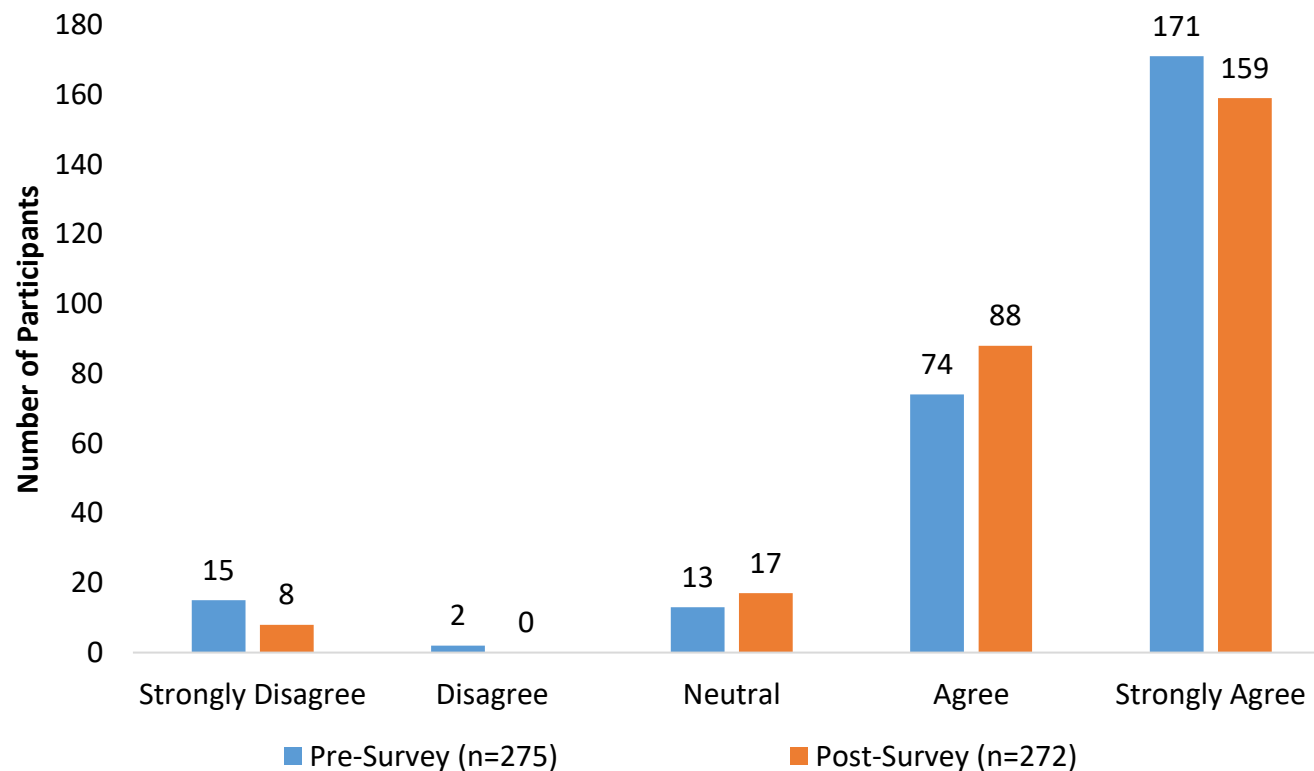
# Results

- 275 bags have been made
- About the residents reached:
  - Household size: Average of 2.6 people (min: 1; max: 8)
  - Average age: 56.7 years old (min: 18; max: 95)
  - 34% rent rather than own their property
  - 26% note that they have, or someone within their household has, a disability, access or functional need (D.A.F.N.)



# Survey Responses: Pre- & Post Comparison

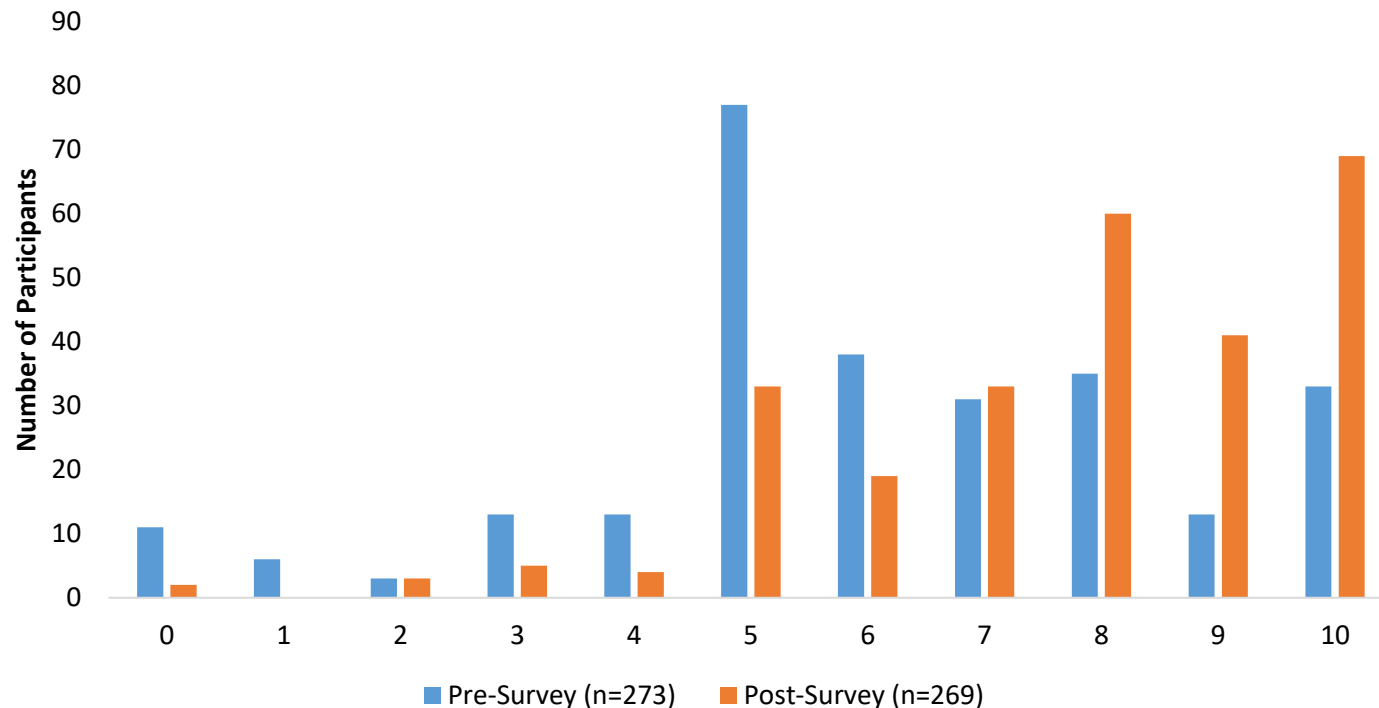
- Do you believe taking steps to prepare will help you and your family get through a disaster?



- Among those who answered this question in both the pre- and post- surveys (n=272):
  - 46 people (16.9%) increased their level of agreement
    - Interestingly, 52 people (19.1%) decreased their level of agreement
- In general, participants agreed that preparation for a disaster will help!

# Survey Responses: Pre- & Post Comparison

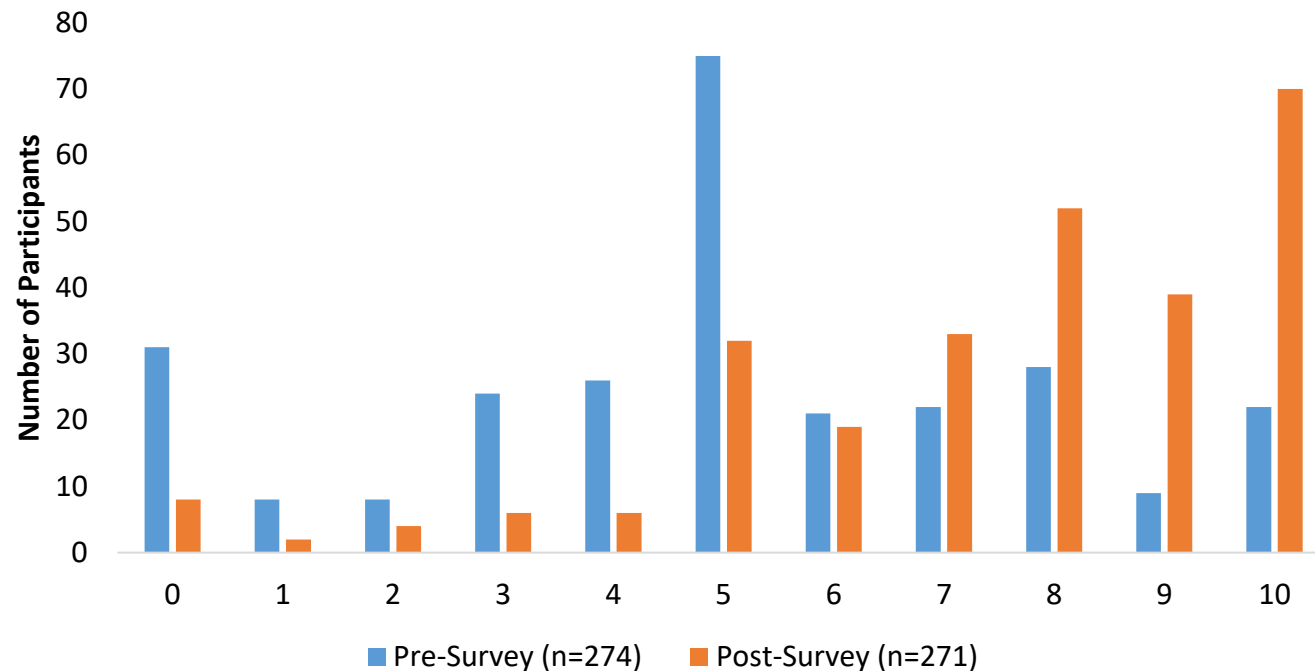
- On a scale from 0 to 10, what is your level of knowledge on emergency preparedness for pets/livestock and the resources that are available? 0 = No knowledge ↔ 10= Strong knowledge



- Among those who answered this question in both the pre- and post-surveys (n=266):
  - 167 people (62.8%) increased their knowledge
    - 90 people ranked their knowledge gain at least 3 points higher on the scale
  - 68 people (25.6%) had no knowledge change
  - 31 people (11.7%) decreased their knowledge

# Survey Responses: Pre- & Post Comparison

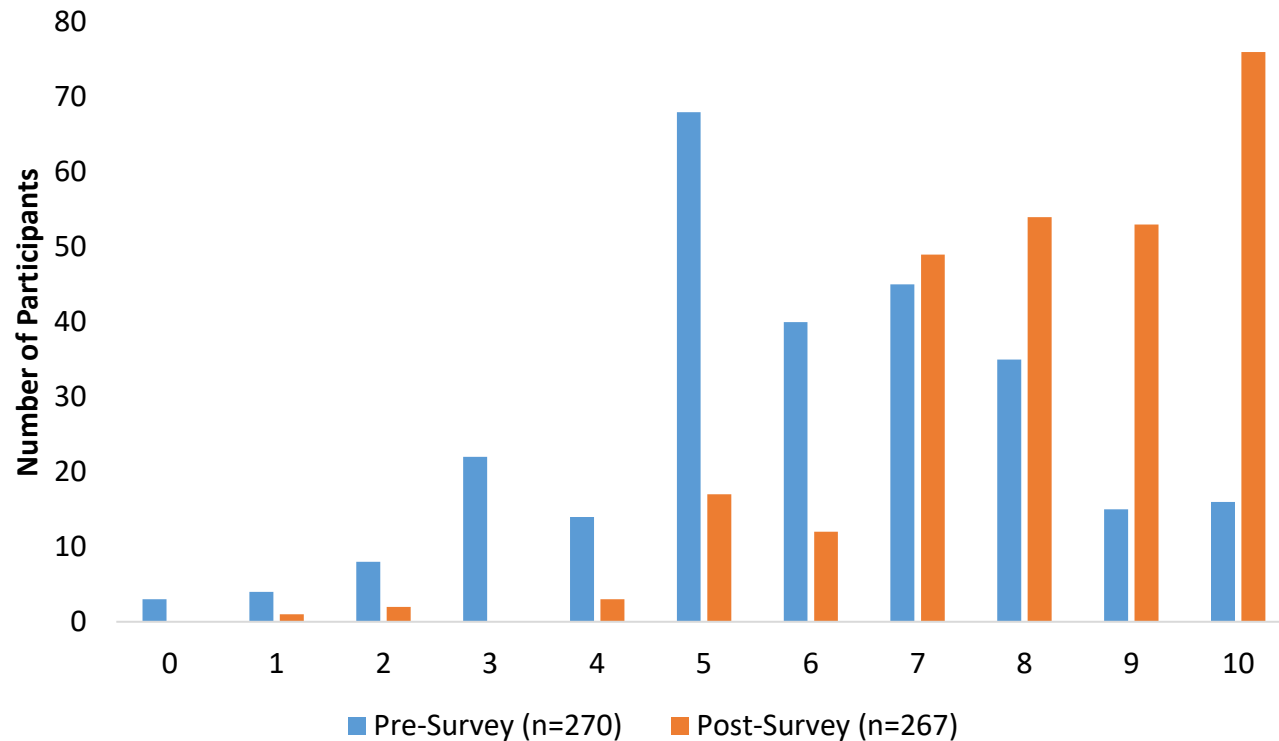
- On a scale from 0 to 10, what is your level of knowledge on emergency preparedness for individuals with a D.A.F.N, and the resources that are available? 0 = No knowledge ↔ 10= Strong knowledge



- Among those who answered this question in both the pre- and post- surveys (n=270):
  - 190 people (70.4%) increased their knowledge
    - 116 people ranked their knowledge gain at least 3 points higher on the scale
  - 62 people (23.0%) had no knowledge change
  - 18 people (6.7%) decreased their knowledge

# Survey Responses: Pre- & Post Comparison

- On a scale from 0 to 10, how prepared do you feel you are for potential disasters or emergencies? 0 = Not at all prepared ↔ 10= Well prepared



- Among those who answered this question in both the pre- and post- surveys (n=264):
  - 202 people (76.5%) increased their feeling of preparedness
    - 101 people ranked their feeling of preparedness gain at least 3 points higher on the scale
  - 48 people (18.2%) had no changes in how prepared they felt
  - 14 people (5.3%) decreased their feeling of preparedness



# Lessons Learned - Positives



- MRC volunteers and NYSPHC Fellows are well-suited to this project
- A mix of tabling at community events and targeted group presentations helped with diverse participants
- Pre-packing the bags and demonstrating/educating from a display reduced chaos and uncontrolled grabbing

# Lessons Learned – Areas for Improvement

- Pre-packing bags would have saved time and minimized uncontrolled grabbing
- Targeted group presentations provided more time to explain program, review contents, and resources than tabling
- Lead time to order/receive all of supplies was substantial and took longer than expected



# Lessons Learned – Areas for Improvement

- Survey was long and some people had difficulty completing it while visiting table
- Most people preferred completing the paper survey and not the electronic version available with QR code
- Issue with respondents indicating they felt less prepared after presentation/demo – will have to carefully compare pre and post-surveys
- Much of program content assumed participant was comfortable using mobile communication devices

# Recommendations

- Plan for longer lead time when ordering supplies and developing printed resources
- Engage with more community groups for targeted presentations
- Continue to pre-pack kit and use a demo for education
- Plan to include alternate resources and tools for groups that are not comfortable on mobile devices
- Redesign survey to be more concise and understandable

The background is a solid blue color with a repeating pattern of white icons. The icons include: a location pin, a stethoscope, a person lifting a barbell, a bandage, a house with a heart inside, a speech bubble with three horizontal lines, an apple, a heart, an ear, and a house with a heart inside. The text "Thank you!" is centered in a white, sans-serif font.

Thank you!