

# Weathering Adversity: Heat- and Cold-Weather-Related Illness Response Training for Outreach Teams Serving Rochesterians Experiencing Homelessness

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## INTRODUCTION

Extreme weather, particularly extreme cold and heat, has significant health impacts on people experiencing homelessness.

Hypothermia, frostbite, and other cold-related injuries are common among people without shelter during colder months. There is clear evidence suggesting they are disproportionately affected by hypothermia with CDC data demonstrating that one out of three hypothermia deaths are attributed to people lacking stable housing.

In warmer months, risks of dehydration, heat exhaustion, and heatstroke are increased. Unhoused individuals often lack access to spaces with AC, placing them at high risk during extreme heat events. Evidence shows they are more than twice as likely to suffer from heat-related illnesses compared to stably housed persons.

Weather-related exposure and illness is a significant cause emergency department utilization, morbidity, and mortality in persons experiencing homelessness.

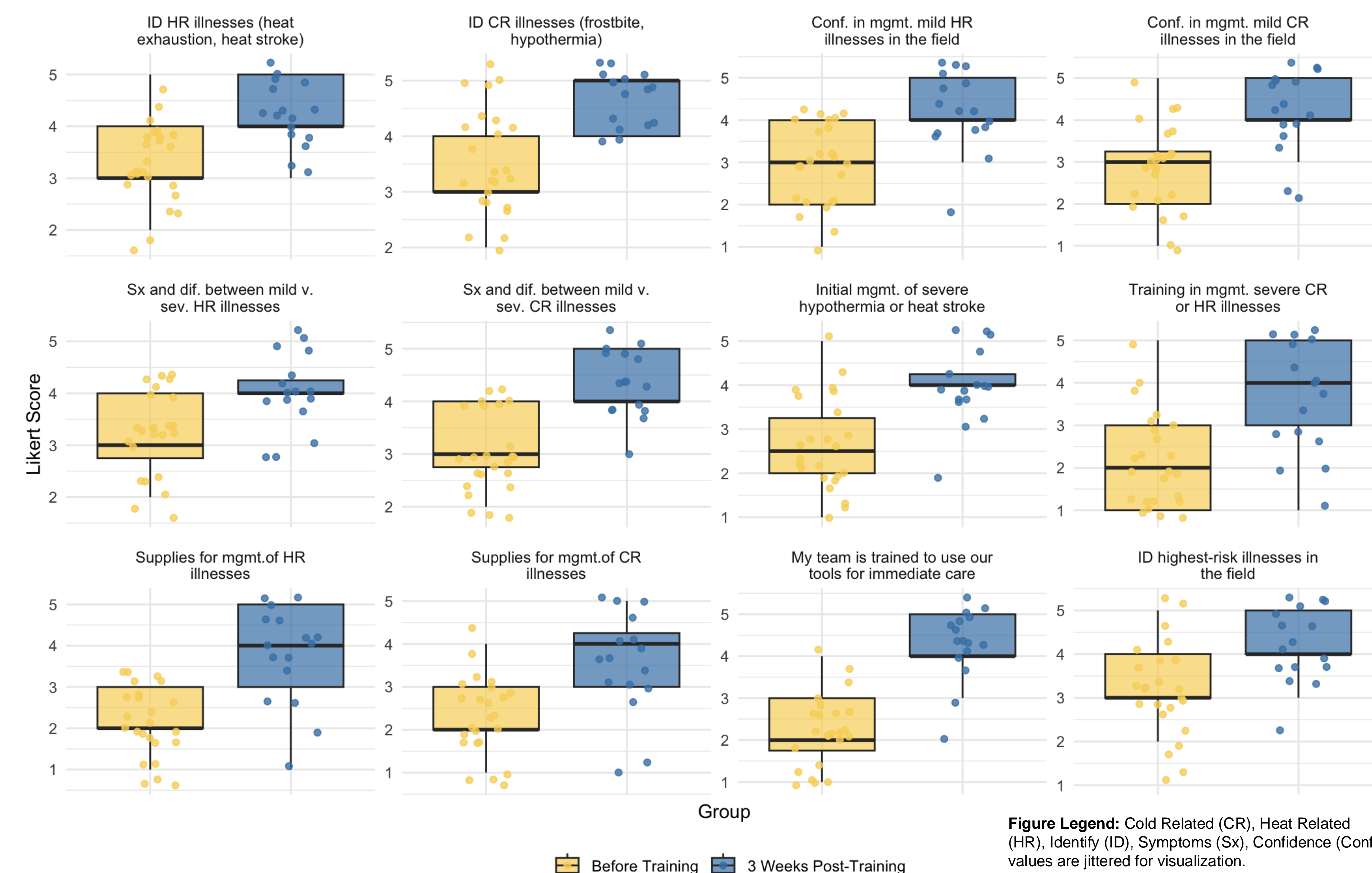
## AIM

To improve the population health of Rochesterians experiencing homelessness by developing resources and training for medical students and community outreach volunteers to identify signs of, and triage, heat/cold weather-related illnesses during outreach sessions.

## RESULTS



Figure 1. Comparing Outreach Volunteer Likert Scores Before and After Weather-related Illness Training



## METHODS

Collaborated with outreach and street medicine experts to develop level-appropriate and durable training materials including chalk talks, presentation slides, and laminated, two-sided index cards with illness management algorithms.

Collected data assessing outreach volunteers' knowledge, confidence in identification and management, and resource access using a pre-training and 3-week post-training REDCap survey.

Statistical analysis of survey data performed using RStudio and Microsoft Excel,  $p < 0.05$  are considered significant.

## SUMMARY OF RESULTS

**24** participants completed pre-training surveys and completed the training through varying modalities (walk-and-talk, chalk talk, index cards) consisting of **9** community outreach volunteers and **16** medical students.

Free text responses prior to training frequently cited a "need for instruction," "training," and "a consolidated list of scenarios and how to manage them".

**16** participants completed post-training surveys (**4** community volunteers and **12** medical students). Wilcoxon Rank Sum Test analysis of non-parametric, ordinal Likert scores showed a **significant increase** in scores all 12 response questions. Qualitative responses corroborated these findings but emphasized a continued **shortage of supplies to manage weather-related illnesses**.

## CONCLUSIONS

The training resulted in substantial improvements in participants' confidence, knowledge, and preparedness to handle weather-related emergencies, as evidenced by a 25.64% to 92.45% increase in mean scores and significant improvements noted across competencies.

Participants appreciated the multi-modal approach with hands-on cards provided, which will aid future illness identification, triaging, or supply readiness.

This flexible response training can serve as a education model for distilling complex clinical information in an approachable resource for persons with limited clinical expertise interacting with populations experiencing homelessness.

## NEXT STEPS

Increased frequency of HR and CR illness training sessions (quarterly or seasonally) and/or in tandem with other outreach training.

Digitalization of the notecard, expansion of illness library, burn/trauma pre-hospital recommendations.

## SUSTAINABILITY

Organize meeting between student outreach leaders who expressed interested in continuing project and community partners. Store project materials in SO Box.

Strengthen street outreach training materials and re-establish education coordinator position.