



# Building Healthcare Resiliency through Employee Personal Preparedness

By Lindsay Hammer  
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# Abstract

Hospital Emergency Departments are at the forefront of disaster response. It is increasingly important to provide health care workers with the resources and support to achieve emergency personal preparedness at home, so they can respond to emergencies while ensuring continuity of care and patient safety. The purpose of this study is to determine the baseline of personal preparedness and test the efficacy of a personal preparedness informational intervention using a pretest-posttest research model. EM staff sought a better understanding of the interventional impact of this information. They also looked to determine whether to augment their approach or information to drive better outcomes. This study uses a pretest-posttest research design with a sample of clinical and non-clinical employees. Results demonstrate that targeted interventions can make a measurable difference in the personal preparedness of both clinical and non-clinical hospital staff. By providing staff with personal preparedness information and resources, we build a more resilient Health System for times of major emergencies and disasters.

# Suggested Citation

Lindsay Hammer, and Meghan McPherson. "Building Healthcare Resilience through Employee Personal Preparedness." *Homeland Security Affairs: Pracademic Affairs* 1, Article 2 (May 2021). [www.hsaj.org/articles17130](http://www.hsaj.org/articles17130)

# Introduction

New York City is prone to both natural and man-made disasters and emergencies. Hospital Emergency Management Departments are at the forefront of disaster response. It is increasingly important to provide health care workers with the resources and support to achieve emergency personal preparedness at home, so they can respond to emergencies while ensuring continuity of care and patient safety. The purpose of this study is to determine the baseline of personal preparedness and test the efficacy of a personal preparedness informational intervention using a pretest-posttest research model.

# Methods

The Mount Sinai Health System (MSHS) Emergency Management Department developed a staff outreach project to provide emergency personal preparedness materials to hospital staff. This pilot project began during 2018 National Preparedness Month through tabling sessions at various MSHS hospitals, with emergency preparedness materials in English and Spanish. Following early successes, MSHS Emergency Management expanded the outreach project for the 2019 National Preparedness Month to measure the possible increase in the hospital staff's preparedness. EM staff sought a better understanding of the interventional impact of this information. They also looked to determine whether to augment their approach or information

to drive better outcomes. This study uses a pretest-posttest research design with a sample of clinical and non-clinical employees. Emergency Managers recruited study participants through two tabling sessions at each of the Health System's hospitals: The Mount Sinai Hospital, Mount Sinai Queens, Mount Sinai Beth Israel, New York Eye and Ear Infirmary of Mount Sinai, Mount Sinai Brooklyn, Mount Sinai West, Mount Sinai Morningside (formerly known as Mount Sinai St. Luke's), and the MSHS corporate office (150 E. 42 St.).

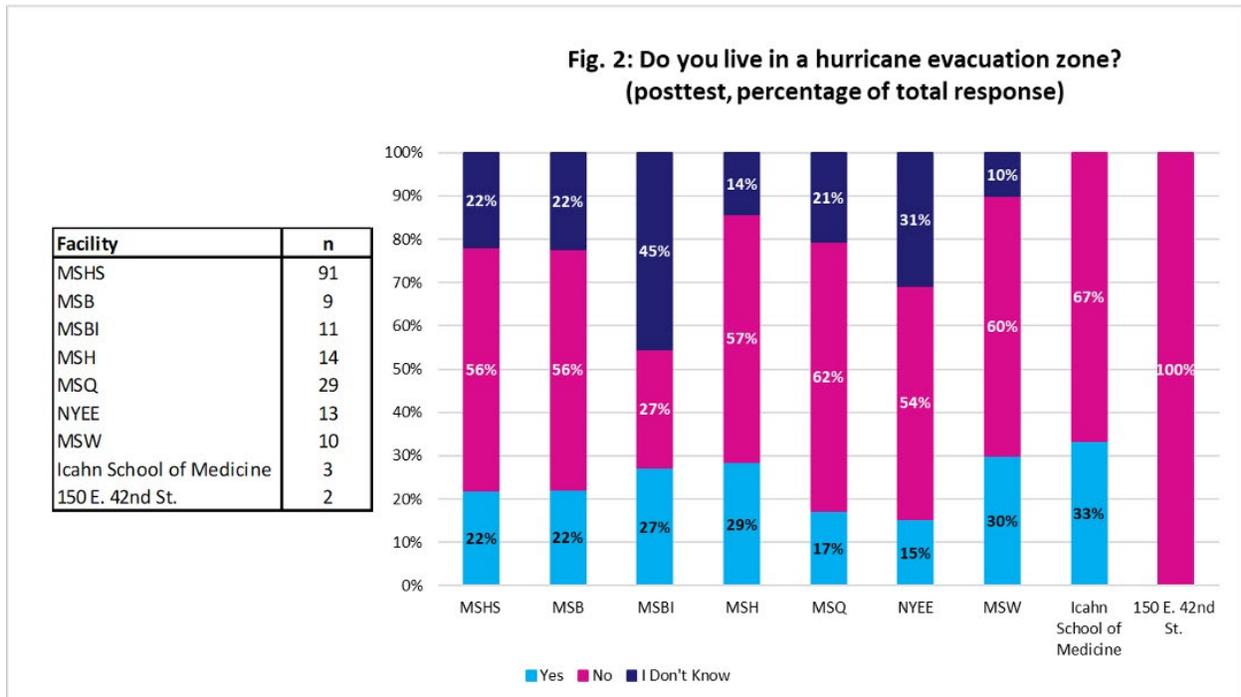
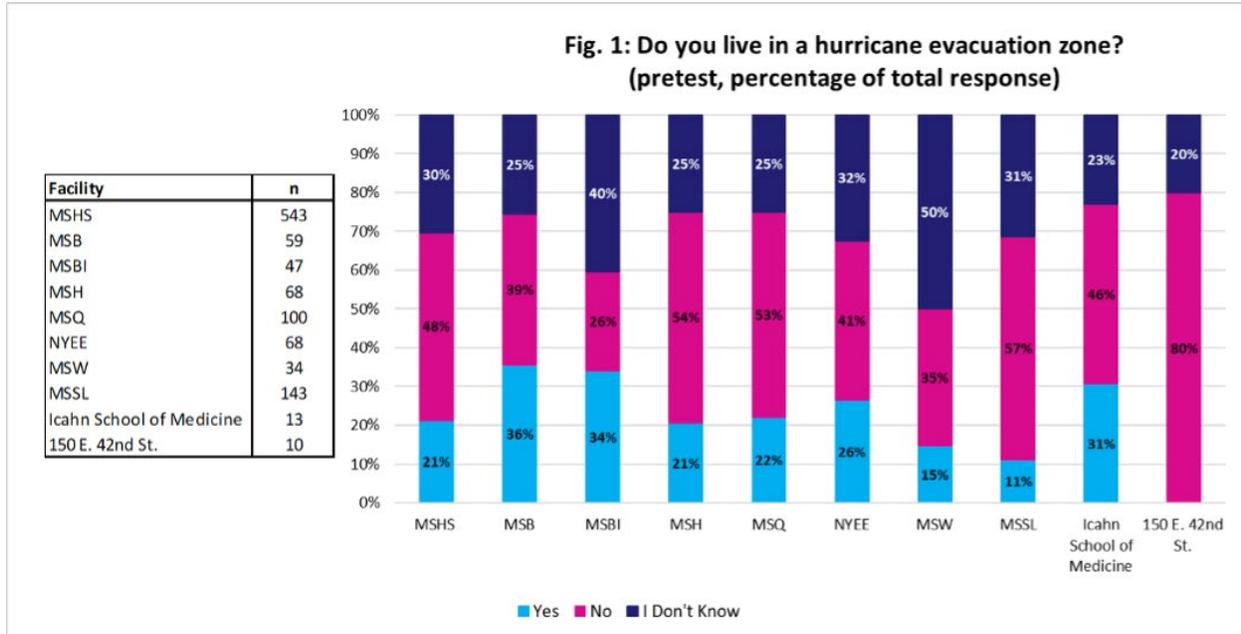
Each hospital site completed two tabling sessions consisting of two hours each. During these tabling sessions, participants completed an anonymous 10-question survey before receiving any informational materials. Once the participants completed the pretest, emergency preparedness materials in English or Spanish were provided. The materials included brochures created by New York City Emergency Management (NYCEM) and a list of emergency go-bag essentials created by the EM department. As a means of recruiting participants, EM staff offered emergency preparedness items in a raffle, including prizes of one weather radio, two flashlight lanterns, and one emergency kit at each site. Broadcast communications via email advertised the personal preparedness tabling sessions.

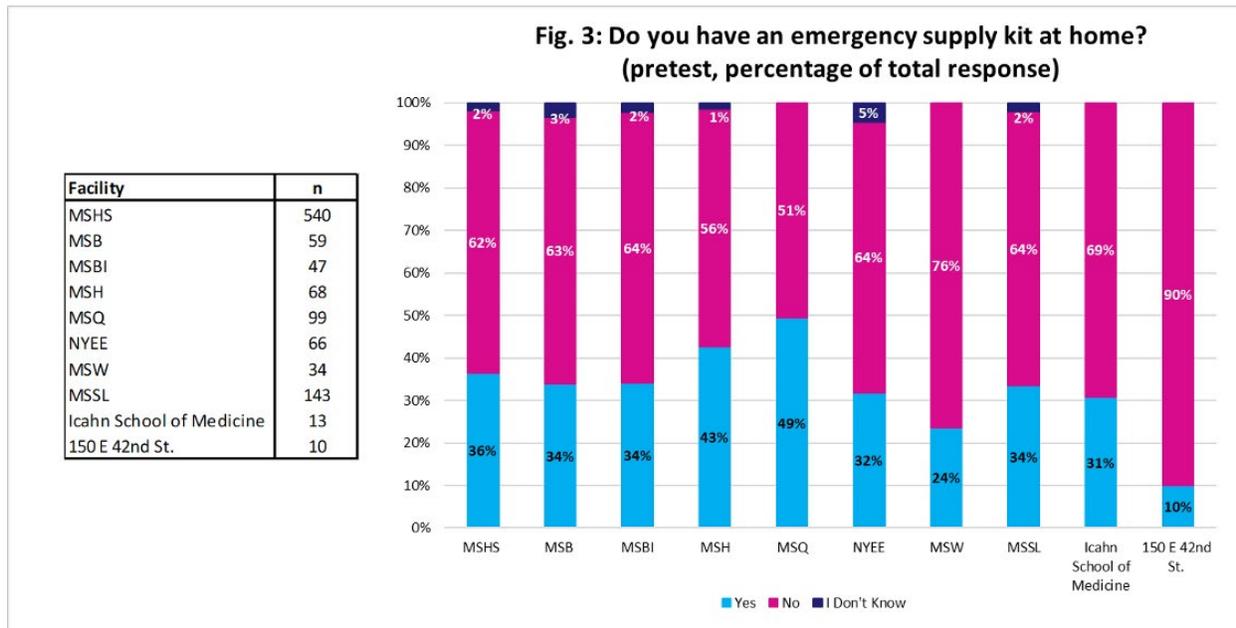
Participants voluntarily completed the printed survey during the tabling session before receiving emergency preparedness materials or information. The pretest survey was anonymous and consisted of questions about the participants' personal preparedness—each question on the pretest and posttest linked directly to the informational materials provided at the event. EM staff collected participant email addresses during the tabling sessions on a separate sign-in sheet. Participants who completed the pretest survey at the tabling sessions received an anonymous posttest survey, using Survey Monkey, two months after completing the pretest survey and receiving the informational intervention.

The pretest and posttest survey results were compared to determine the efficacy of the informational intervention. Staff used Excel to analyze the pretest and posttest data, with results displayed in stacked bar graphs as percentages of the total response by facility.

## Results

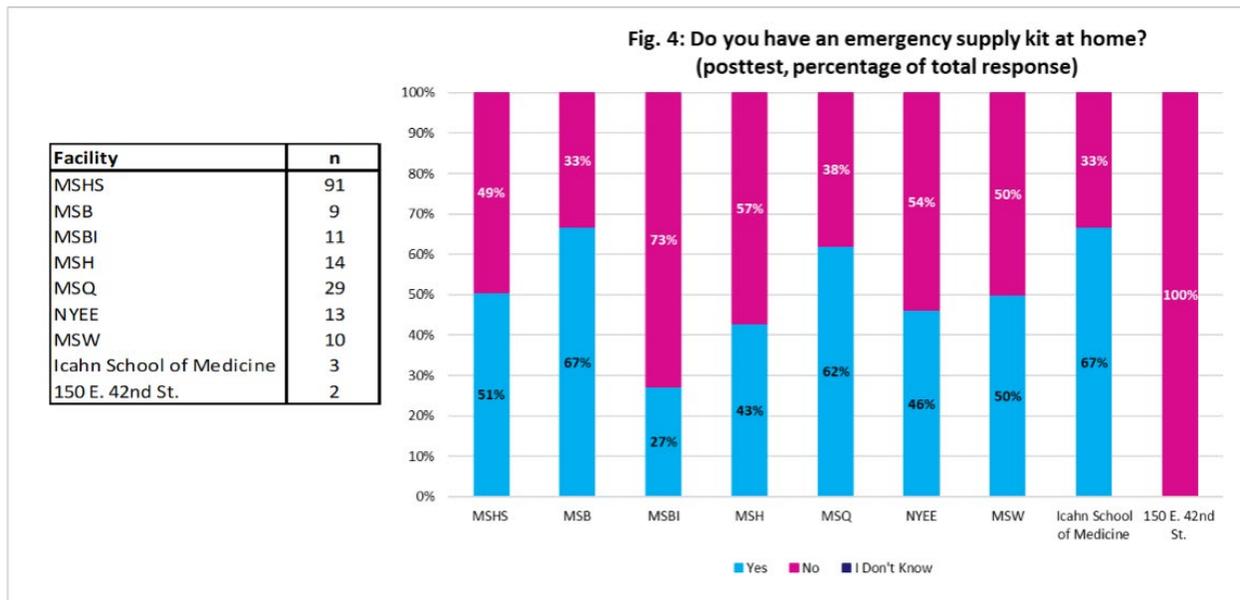
The pretest survey results show that 30% (N=543) of participants across the Health System reported that they did not know whether they lived in a hurricane evacuation zone (Fig. 1). After receiving personal preparedness information, which included a New York City hurricane evacuation zone map created by NYCEM, 22% (N=91) of participants across the Health System reported in the posttest survey that they did not know whether they lived in a hurricane evacuation zone (Fig. 2). The percentage of participants who responded that they do not know whether they lived in a hurricane evacuation zone decreased from the pretest to posttest results.





Pretest survey results demonstrated that 38% (N=541) of participants responded “yes” when asked whether they had a family emergency preparedness plan. At the posttest, 55% (N=91) reported that they did have a family emergency preparedness plan. The percentage of participants who responded “yes” when asked whether they had a family emergency preparedness plan increased from pretest to posttest. During the tabling session, EM staff provided information about how to develop a family emergency preparedness plan.

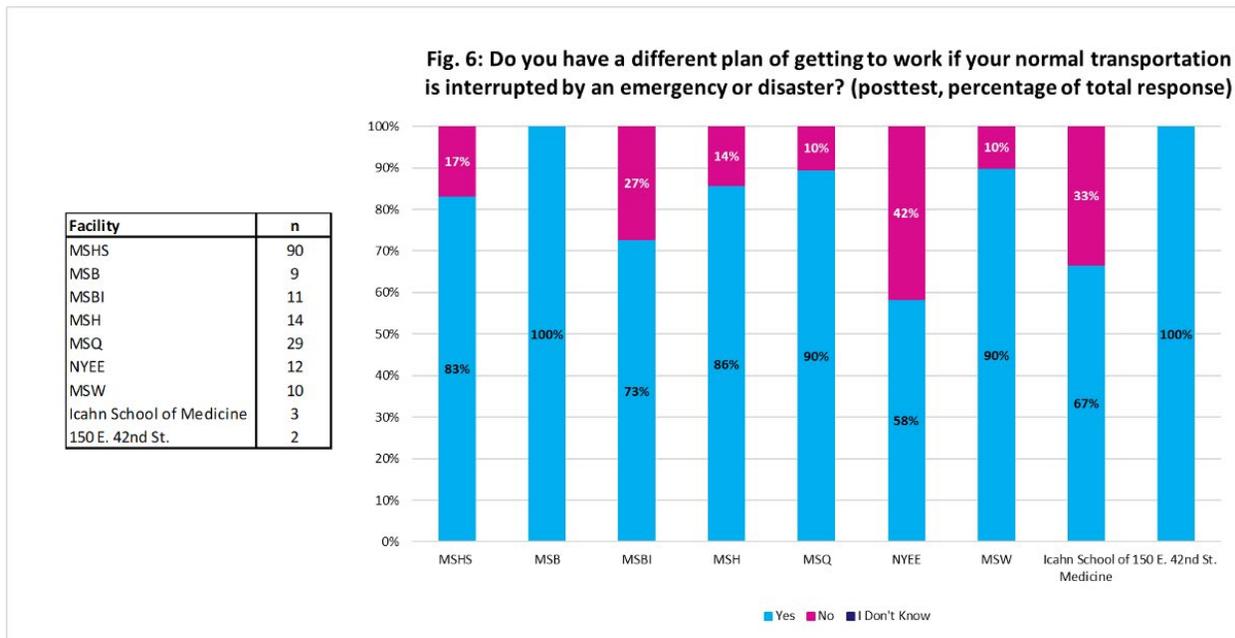
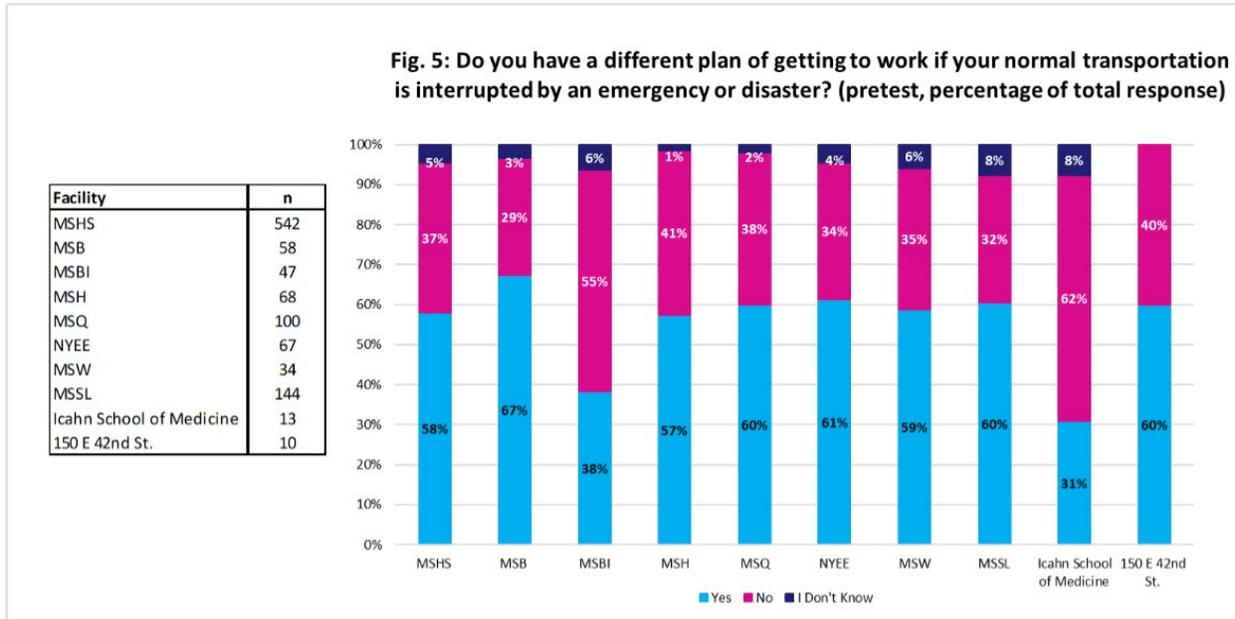
At the pretest, 36% (N=540) of MSHS participants reported that they had an emergency supply kit at home (Fig. 3). The posttest results indicate that 51% (N=91) of MSHS participants reported that they had an emergency supply kit at home (Fig. 4). The percentage of participants that responded “yes” when asked whether they had an emergency supply kit at home increased from pretest to posttest. During the tabling sessions, EM staff provided NYCEM brochures with information about the importance of owning an emergency supply kit at home, along with recommendations for the items to include in an emergency supply kit.



The pretest survey results show that 17% (N=543) of MSHS participants responded “yes” when asked whether they had an emergency go-bag for each member of their family. Posttest results show that 29% (N=90) of MSHS participants responded that they did have an emergency go-bag for each family member. The percentage of MSHS participants who reported that they did have an emergency go-bag for each family member increased from pretest to posttest survey results. During the tabling sessions, EM staff provided NYCEM informational brochures and an MSHS Emergency Management Department “Emergency Go-Bag Essentials” document.

When asked whether they had a family meeting place outside of the home for emergencies, 32% (N=542) responded “yes” at the pretest, and 37% (N=92) responded “yes” at the posttest. The percentage of MSHS participants who responded that they did have a family meeting place for emergencies increased from pretest to posttest. During the tabling session, EM staff provided information about why a family meeting place is essential.

At the pretest, 58% (N=542) of participants responded that they did have a different plan for getting to work if regular transportation was interrupted by an emergency or disaster (Fig. 5). After the intervention, 83% (N=90) of participants responded that they did have a different plan for getting to work if regular transportation was interrupted by an emergency or disaster (Fig. 6). The percentage of participants who responded that they did have a different plan of getting to work if regular transportation were interrupted by an emergency or disaster increased from pretest to posttest results. During the tabling sessions, EM staff provided information about the importance of contingency plans for transportation to work.



At the pretest, 43% of respondents indicated they had a clinical role, and 57% indicated they have a non-clinical role. At the posttest, 30% of respondents indicated they have a clinical role, and 70% of respondents indicated they have a non-clinical role (N=91).

## Limitations

A limitation in the execution of this pretest-posttest model must be noted. Mount Sinai Morningside misplaced sign-in sheets between the pretest and posttest. Thus, their data are included in the pretest overall N, but not in the posttest overall N, and their data cannot be included in the site-level comparison statistics.

Also, due to the nature of this study, there is the potential for response bias. Employees may have provided survey answers they believed would be the favorable answer but not necessarily accurate.

## Discussion

The results of this study demonstrate that targeted interventions can make a measurable difference in the personal preparedness of both clinical and non-clinical hospital staff. By providing staff with personal preparedness information and resources, we build a more resilient Health System for times of emergencies and disasters. They will use this study's results to tailor personal preparedness information for MSHS staff and expand upon the MSHS National Preparedness Month activities. These findings help MSHS determine the current gaps in personal preparedness among clinical and non-clinical staff and better understand how the Health System can support these efforts to build resiliency. Further, if staff are better prepared at home for both themselves and their families, they are much more likely to come to work at the medical facility. Therefore, staff personal preparedness builds overall institutional resiliency.

## About the Authors

**Lindsay Hammer**, MPH, CHPCP is currently an Emergency Manager for Mount Sinai Health System in New York City, where she has worked for over three years. She is responsible for system-wide Emergency Management projects including crisis communications, exercise planning and evaluation, and staff personal preparedness outreach. Prior to joining the Mount Sinai Health System, Ms. Hammer worked at the Ohio Department of Health in the Bureau of Environmental Health and Radiation Protection. While there, she supported the statewide Ohio Healthy Homes and Lead Poisoning Prevention Program. Additionally, Ms. Hammer worked in Injury Prevention at the Columbus Department of Health, where she developed and conducted health education outreach focusing on childhood injury prevention and car seat safety. Ms. Hammer is a Certified Healthcare Provider Continuity Professional (CHPCP). Ms. Hammer received her B.S. in Environmental Public Health and master's degree in Public Health with a concentration in health behavior and health promotion, both from The Ohio State University. She can be reached at [lindsay.hammer@mountsinai.org](mailto:lindsay.hammer@mountsinai.org)

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