

Original Research

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Emergency Supply Kits and Medical Self-Sufficiency: Lessons from Hurricane Ian

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Abstract

Objectives: Emergency supply kits (ESKs) may support disaster-related self-sufficiency and may be important for people with chronic health conditions (CHCs). However, evidence of ESK's effectiveness in supporting self-sufficiency is lacking. This study examined associations between households possessing ESKs and 1) household members leaving home for medicine and 2) individuals with CHCs seeking medical care.

Methods: Data were collected through a survey distributed to southwest Florida after Hurricane Ian's impact ($n = 1342$). Associations were assessed using logistic regression models.

Results: ESK possession was more common among households with members with CHCs (63%) than households without such members (56%). Overall, regression models revealed no clear association between ESK possession and leaving home for medicine (adjusted Odds Ratio (aOR) = 1.27; CI = 0.81–2.02). Analyses restricted to households with individuals with CHCs revealed no clear associations between ESK possession and leaving the home for medicine (aOR = 1.35; CI = 0.81–2.25) or seeking medical care (aOR = 1.07; CI = 0.68–1.68).

Conclusions: This study did not provide evidence that ESKs promote medical self-sufficiency. However, it did not characterize the medication in households' ESKs or the type, duration, and severity of CHCs, and could have had uncontrolled confounding. Characterization of such factors would be important in future studies of ESKs and self-sufficiency among people with CHCs.

In 2022, eight hurricanes — tropical cyclones with wind speeds ≥ 74 miles per hour (mph) — formed over the North Atlantic. Hurricane Ian, a Category 4 hurricane (wind speed ≥ 150 mph) and billion-dollar disaster, made landfall near Cayo Costa, Florida on 28 September 2022.^{1–3} Disasters such as Hurricane Ian can have immediate and long-term public health impacts including injuries and deaths, exacerbation of chronic diseases, and psychological distress. Therefore, it is important that households are prepared for these disasters.

In the immediate aftermath of a disaster's impact, households often need to depend on themselves (or be self-sufficient) for ≥ 72 hours because of ongoing response efforts, the size of the affected area, loss of communication, impassable roads, and safety measures that necessitate remaining at home. This helps reduce indirect injuries and deaths, preserve resources, ease the burden on health care workers, and keep roads clear for rescue and recovery missions.⁴ Therefore, households are encouraged to have an emergency supply kit (ESK), an easily accessible collection of items they may need during disasters, which should be kept in a portable container such as a duffle bag or a storage bin.⁵ Typical recommendations are that ESKs should include, at a minimum, water (1 gallon/person/day), non-perishable food (≥ 3 -day supply), a flashlight, extra batteries, medication, a first-aid kit, and a battery-powered or hand-crank radio.⁵ A national-level survey in 2020–2021 found that only one-third of U.S. households had an ESK and that disaster preparedness is a public health challenge.⁶ Findings from a separate national-level survey estimated that the percentage of people who possessed emergency supplies increased from 33% in 2022 to 48% in 2023.⁶

Disaster preparedness is particularly important for people with chronic health conditions (CHCs) because they may experience worsening symptoms or have difficulty managing their CHC during disaster response and recovery.^{7,8} This was demonstrated when Hurricane Katrina survivors with CHCs altered their disease management plans following diminished access to standard medical services.^{9–11} In theory, ESKs may equip households to adhere to the disease management plan and manage any exacerbated symptoms of members with CHCs. However, there is no clear evidence that ESK possession reduces the odds of a person with a CHC experiencing worsening symptoms or having to leave the home for medical purposes.

Studies in non-disaster settings reported conflicting findings regarding preparedness among people with CHCs. Uscher-Pines reported that households in southeastern Pennsylvania that did not include someone with special needs were more likely to engage in preparedness behaviors than households that included someone with special needs.¹² Ko reported that individuals who lived in the U.S. and participated in the Behavioral Risk Factor Surveillance System survey during 2006-2010 with asthma, cardiovascular disease (CVD), or diabetes were not more likely to be prepared (e.g., having a 3-day supply of food, water, medication) for a disaster than individuals who did not have asthma, CVD, or diabetes. However, individuals with asthma or diabetes were more likely to have a 3-day supply of medicine than individuals that did not have asthma or diabetes.¹³ Qin reported that residents of Shenzhen, China with CHCs were better prepared for disasters than residents who did not have CHCs.¹⁴ These findings highlight the need to further characterize households with ESKs to identify communities that may be under-prepared and to develop tailored, data-driven recommendations for household-level disaster preparedness.

The Centers for Disease Control and Prevention (CDC) developed a survey to collect information about household preparedness, the health status of household members, and the need for household members to leave the home during and immediately after a

disaster. Surveys were distributed to households in southwest Florida immediately after Hurricane Ian's impact. Survey data were used to examine the association between households including someone with a CHC, and possessing an ESK. Survey data were also used to assess whether having an ESK helped households be self-sufficient by examining the association between having an ESK and 1) needing to leave the house for medicine during the 72 hours after the hurricane (overall and for households that included someone with a CHC), and 2) a member with a CHC seeking medical care during the first 2 weeks after the hurricane.

Methods

CDC distributed the survey via address-based sampling to 5,000 households in DeSoto, Sarasota, Charlotte, Lee, and Manatee counties after Hurricane Ian's impact. Selected households were in evacuation zone B, while households located in mandatory evacuation zone A were excluded to focus on households that sheltered in place (Figure 1).¹ Initial survey packets were mailed on October 20, 2022, approximately 3 weeks after the hurricane occurred on September 28, 2022, with reminder postcards sent on October 27, 2022. A second set of survey packets was mailed to non-

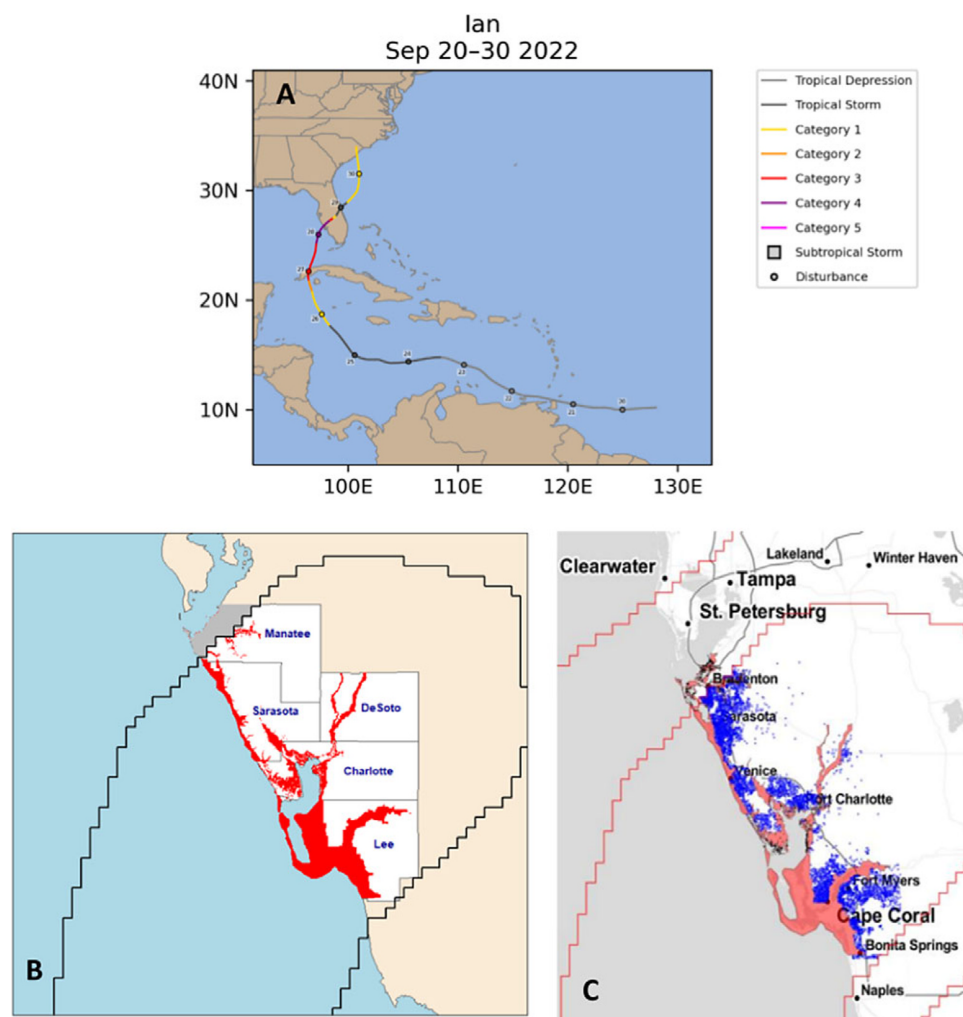


Figure 1. Final sample area for survey distribution: A) The path of Hurricane Ian (developed and previously published by the National Centers for Environmental Information), B) Mandatory evacuation zone A (represented in red) was excluded from the sample area, and C) Surveys were distributed to households in evacuation zone B (represented in blue)¹. Figure 1A was originally published by the National Center for Environmental Health Information's Annual 2022 Tropical Cyclone Report, which can be accessed here: <https://www.ncei.noaa.gov/access/monitoring/monthly-report/tropical-cyclones/202213>

responding households on November 10, 2022, with final reminder postcards sent on November 17, 2022. Survey collection ended in December 2022. Each survey packet included a paper survey, a QR code linked to a web-based survey, and a \$2 incentive to participate. Households that completed a paper survey earned an additional \$10 and households that submitted a web-based survey earned an additional \$20. Eligible participants were adults aged 18 and over, with one respondent per household.

The survey included questions about household demographics, needs after the disaster's impact, household member health, ESK possession, and the presence of over-the-counter (OTC) and/or prescription medication in ESKs. Questions included whether anyone in the household evacuated because of the disaster and whether anyone in the household left the home within the first 72 hours of the disaster to get OTC or prescription medication. It also asked if any household member had been diagnosed before the disaster with allergies to mold or pollen; allergies to food, latex, household pets or other sources; hypertension or high blood pressure; angina or heart disease; cerebrovascular disease or stroke; substance use disorder (alcohol or drug); anxiety; depression; kidney disease; diabetes (excluding gestational); cancer; Alzheimer's or other dementia; lung disease (chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis); asthma; disabilities that affect physical functioning or daily activities; or another condition. For households that included someone with one of these CHCs, the survey asked whether the household member(s) with the CHC sought medical care during the first 2 weeks following the disaster by calling 911, going to a doctor's office, or going to a hospital. Survey questions also included if the household had an ESK at the time of the disaster, followed by asking households that had an ESK whether specific items were in the ESK, including OTC and prescription medicine (asked as individual yes/no questions). The authors considered having an ESK as both a dichotomous variable (yes/no) and as a 3-level variable that considered whether the ESK included medication: 1) the household did not have an ESK, 2) the household had an ESK that did not include medicine, and 3) the household had an ESK that included medicine.

Covariates were selected *a priori* and included the race (white only or non-white including mixed race) and ethnicity (Hispanic or non-Hispanic) of household members, annual household income (less than \$50, 000, \$50, 000–\$99, 999, or at least \$100, 000), highest educational attainment (high school graduate or less, attended/graduated from college, or earned a masters/doctorate) of any household member, and presence of adults aged ≥ 65 years (yes/no).^{12–14} Evacuating the home during Hurricane Ian was considered a potential effect modifier of the association between ESK possession and medical self-sufficiency because evacuation of some household members could have impacted the behavior of those who remained or the overall responses for the household.

Descriptive statistics relating to household demographic characteristics, ESK possession, leaving the home for medication during the first 72 hours after the disaster, having a person with a CHC seek medical care during the first 2 weeks after the disaster, and whether anyone in the household evacuated because of the disaster were calculated for the entire study population and stratified by households that included someone with a CHC and households that did not include someone with a CHC. Descriptive results are presented as frequencies and percentages. The chi-square test was used to identify statistically significant differences in characteristics between households with and without a member with a CHC. The threshold for statistical significance was set at an alpha value of 0.05.

Logistic regression models were used to examine the crude and adjusted associations between having a person in a household with a CHC and having an ESK. The adjusted models controlled for the selected covariates.

The effectiveness of ESKs in enabling households to be self-sufficient was assessed by examining the association between having an ESK and anyone leaving the house to get medicine within the first 72 hours after the disaster. In addition, for the subset of households with at least 1 person with a chronic condition, the study examined the association between having an ESK and anyone leaving the house to get medicine within the first 72 hours after the disaster, and between having an ESK and a person with a CHC seeking medical care within the first 2 weeks after the disaster. These associations were assessed using logistic regression models to estimate crude and adjusted odds ratios (OR) (adjusted for race, ethnicity, income, educational attainment, and presence of adults aged ≥ 65 years). In these models, the authors first considered having an ESK as a dichotomous variable (yes/no) and then assessed the associations using the 3-level variable that considered whether the ESK included medication (with not having an ESK as the reference category). Finally, because the association between having an ESK and being self-sufficient may differ for households in which everyone sheltered in place compared to households that partially or fully evacuated, the authors conducted the same analyses restricted to households for which no household members evacuated because of the disaster. Regression model results are presented as crude and adjusted OR (aOR) with 95% confidence intervals. SAS version 9.4 was used to perform all analyses. This study was approved by Centers for Disease Control and Prevention's Institutional Review Board on 23 September 2021.

Results

Of the 5,000 households that were invited to participate in the survey, 1,342 (29.0%) completed web-based (65%) or paper-based (35%) surveys.¹⁵ Approximately 74.6% of responding households included at least one member with a CHC ($n = 974$ of 1,305 for which this information was available). Most responding households identified as White only (86.1%); this was the case both among households that included someone with a CHC and households that did not. Over 13% of households identified as having someone in the household who is Hispanic; however, Hispanic ethnicity was more common among households that did not include anyone with a CHC than among households that did. Approximately one-third of all households reported annual earnings in each of the three income categories; households that included anyone with a CHC were more likely than those that did not to have income in the middle category (\$50, 000–\$99, 999). More than half of all households reported that their highest level of educational attainment was a college-level education (60.9%). Fewer households reported that their highest level of educational attainment was a master's degree or a doctorate (23.9%), or a high school diploma or less (15.3%). These percentages did not substantially differ between households that included someone with a CHC and households that did not. More than half of all households included an adult aged ≥ 65 years (53.6%); this was more common among households that included someone with a CHC than households that did not (Table 1).

Almost two-thirds of all households had an ESK during Hurricane Ian (61.6%). Having an ESK was more common among

Table 1. Characteristics of households that participated in the Disasters and Emergency Supply Kit Survey, October 2022; overall and by whether the household included at least one person with a chronic condition

Household characteristic	Households with someone with a chronic condition <i>N</i> = 974 <i>n</i> (%)	Households without anyone with a chronic condition <i>N</i> = 331 <i>n</i> (%)	<i>P</i> value	All households <i>N</i> = 1342 <i>n</i> (%)
Household race (missing = 0)				
White (only)	862 (88.5%)	282 (85.2%)	0.11	1156 (86.1%)
Other (includes multi-racial households)	112 (11.5%)	49 (14.8%)		186 (13.9%)
Household ethnicity (missing = 40)				
Any Hispanic household members	117 (12.2%)	55 (17.0%)	0.03	173 (13.3%)
No Hispanic household members	846 (87.9%)	269 (83.0%)		1129 (86.7%)
Household Income (missing = 141)				
Less than \$50,000	300 (33.8%)	109 (35.9%)	0.03	414 (34.5%)
\$50,000-\$99,999	313 (35.3%)	83 (27.3%)		399 (33.2%)
\$100,000 or more	274 (30.9%)	112 (36.8%)		388 (32.3%)
Highest level of educational attainment (missing = 51)				
High school graduate or less	144 (15.0%)	47 (14.8%)	0.51	197 (15.3%)
Attended and/or graduated from college	577 (60.2%)	202 (63.5%)		786 (60.9%)
Earned a master's and/or Doctorate	237 (24.7%)	69 (21.7%)		308 (23.9%)
Household included someone aged ≥65 years (missing = 0)				
Yes	569 (58.4%)	142 (42.9%)	<0.0001	719 (53.6%)
No	405 (41.6%)	189 (57.1%)		623 (46.4%)
Household had an ESK (missing = 27)				
Had an ESK	615 (63.4%)	184 (55.8%)	0.01	810 (61.6%)
Did not have an ESK	355 (36.6%)	146 (44.2%)		505 (38.4%)
Household had an ESK with/without medication (missing = 32)				
ESK included medicine	540 (55.7%)	132 (40.5%)	<0.0001	681 (52.0%)
ESK did not include medicine	74 (7.6%)	48 (14.7%)		124 (9.4%)
Did not have an ESK	355 (36.6%)	146 (44.8%)		505 (38.6%)
Someone left the home for medicine during the first 72 hours after the disaster (missing = 0)				
Yes	86 (8.8%)	15 (4.5%)	0.01	101 (7.5%)
No	888 (91.2%)	316 (95.5%)		1241 (92.5%)
Someone with a chronic condition sought external care during the 2 weeks after the disaster (missing among households with at least 1 member with a chronic condition = 0)				
Yes	103 (10.6%)	Not applicable	Not applicable	Not applicable
No	871 (89.4%)	Not applicable		Not applicable
Household evacuated because of the disaster (missing = 0)				
Yes, all members	206 (21.2%)	72 (21.8%)	0.51	291 (21.7%)
Yes, some members	40 (4.1%)	9 (2.7%)		49 (3.7%)
No	728 (74.7%)	250 (75.5%)		1002 (74.7%)

households that included someone with a CHC (63.4%) than among households that did not (55.8%). In the unadjusted logistic regression model, households that included at least one person with a CHC were somewhat more likely to have an ESK than households that did not include anyone with a CHC (crude OR = 1.38; 95% CI = 1.07, 1.77). However, after adjusting the model for the covariates of interest, this

association was not statistically significant (aOR = 1.30; 95% CI = 0.99, 1.70).

Over half (52%) of all households possessed an ESK that included medication, 9.5% possessed an ESK that did not include medication and 38.6% reported not having an ESK. It was more common for households that included someone with a CHC to

report having an ESK that included medicine (55.7% vs 40.5%). Having an ESK that did not include medicine was more common among households that did not include someone with a CHC (14.7% vs 7.64%).

Over 7% of all households reported that someone left the house to get medicine within 72 hours of Hurricane Ian; this was more common among households that included a person with a CHC (8.8%) than among households that did not (4.5%). One-tenth (10.6%) of households that included someone with a CHC reported that person sought medical care during the 2 weeks following Hurricane Ian. Lastly, most responding households reported that no one evacuated during the disaster (74.7%), which was similar for households that did or did not include someone with a CHC (Table 1).

Compared with households that did not have an ESK, households that had an ESK were somewhat more likely to have someone leave the house for medicine during the first 72 hours after Hurricane Ian, although this was not statistically significant in analyses among all survey respondents (aOR = 1.27; 95% CI = 0.81, 2.02). Households that had an ESK that included medicine were also somewhat more likely than households that did not have an ESK to have someone leave the house for medicine (aOR = 1.41; 95% CI = 0.87, 2.28) (Table 2).

In models restricted to households in which no one evacuated because of the disaster, households that had an ESK were more likely to leave the home for medicine (aOR = 1.84; 95% CI = 1.00,

3.38), and households that had an ESK that included medicine were significantly more likely to leave the home for medicine during Hurricane Ian (aOR = 2.07; 95% CI = 1.10, 3.88) (Table 1S).

Similarly, among households that included someone with a CHC, households that had an ESK were somewhat more likely to leave the house for medicine compared to households that did not have an ESK (aOR = 1.35; 95% CI = 0.81, 2.25); this was also the case when the ESK included medicine (aOR = 1.43; 95% CI = 0.84, 2.41) (Table 3). When the analysis was restricted to households where no one evacuated because of the disaster and at least one person had a CHC, households with an ESK were somewhat more likely to leave home for medicine (aOR = 1.94; 95% CI = 0.98, 3.82). Among these households, those that had an ESK that included medicine were significantly more likely to leave the home for medicine (aOR = 2.14; 95% CI = 1.08–4.26) (Table 2S).

Lastly, among households that included someone with a CHC, there was no clear association between having an ESK and someone with a CHC seeking medical care during the 2 weeks after Hurricane Ian (aOR = 1.07; 95% CI = 0.68, 1.68); this was also the case when comparing households that did not have an ESK and households that had an ESK that included medicine (aOR = 1.15; 95% CI = 0.73, 1.82) (Table 3). When the analysis was restricted to households that included someone with a CHC for which no one evacuated because of the disaster, albeit not statistically significant, households that had an ESK were somewhat more likely to seek medical care during Hurricane Ian (aOR = 1.21; 95% CI = 0.69,

Table 2. Odds ratio for the association between having an emergency supply kit and leaving the home for medication, among all households, Disasters and Emergency Supply Kit Survey, October 2022

Outcome	Exposure	Exposure category	Crude OR (95% CI)	Adjusted* OR (95% CI)
Leaving home to get medication	Having an emergency Supply Kit	No	ref	ref
		Yes	1.21 (0.79–1.86)	1.27 (0.81–2.02)
	Having an emergency supply kit with or without medication	No emergency supply kit	ref	ref
		Emergency supply kit without medication	1.08 (0.51–2.32)	0.88 (0.39–2.01)
		Emergency supply kit with medication	1.24 (0.80–1.93)	1.41 (0.87–2.28)

*The adjusted models control for race, ethnicity, household income, household-level education, and having someone aged ≥65 years in the household.

Table 3. Odds ratio for the association between having an emergency supply kit and leaving the home for medication or seeking external care, among households with at least one person with a chronic condition, Disasters and Emergency Supply Kit Survey, October 2022

Outcome	Exposure	Exposure category	Crude OR (95% CI)	Adjusted* OR (95% CI)
Leaving home to get medication	Having an emergency Supply Kit	No	ref	ref
		Yes	1.32 (0.81–2.13)	1.35 (0.81–2.25)
	Having an emergency supply kit with or without medication	No emergency supply kit	ref	ref
		Emergency supply kit without medication	1.12 (0.44–2.82)	0.94 (0.34–2.60)
		Emergency supply kit with medication	1.35 (0.83–2.20)	1.43 (0.84–2.41)
Seeking external care	Having an emergency Supply Kit	No	ref	ref
		Yes	1.07 (0.69–1.64)	1.07 (0.68–1.68)
	Having an emergency supply kit with or without medication	No emergency supply kit	ref	ref
		Emergency supply kit without medication	0.51 (0.18–1.47)	0.58 (0.20–1.71)
		Emergency supply kit with medication	1.15 (0.74–1.78)	1.15 (0.73–1.82)

*The adjusted models control for race, ethnicity, household income, household-level education, and having someone aged ≥65 years in the household.

2.10), and this was also the case for households that had an ESK that included medicine (aOR=1.27; 95% CI = 0.72, 2.23) (Table 2S).

Limitations

These data have several limitations. The survey did not determine the amount or type of medicine that households included in their ESK. Some households could have stated that they had medicine in their ESK, but this could have been a supply of medicine unrelated to a CHC or not having all the necessary medications for every CHC within the household. Additionally, this survey was distributed to randomly selected households in evacuation zone B in southwest Florida after Hurricane Ian's impact, and results are generally representative of this location and time but may not be generalizable to households in other locations or other time periods. The study was also limited in the ability to identify how many members of a household had one or more CHCs because a respondent could have reported, for example, that someone in the household had asthma and someone had depression, but it could not be determined whether one household member had both conditions or if there were two separate household members with these conditions. Another limitation of this study is that covariates were assessed at the household level, and any household member who was at least 18 years old was eligible to complete the survey, so the accuracy of the data that were captured is dependent on the knowledge of the respondent.

Finally, because of the small sample size of this study, the analysis grouped all households that reported that someone with one of the listed conditions (including "other conditions") lived in the household during Hurricane Ian. Therefore, the study could not examine the differences in the outcomes among households that included persons with different specific conditions (e.g., differences in preparedness among households that included someone with depression versus households that included someone with asthma). In addition, the study did not collect information about the duration and severity of the chronic conditions.

Discussion

This study examined whether the percentage of households that had an ESK differed between households that included at least one person with a CHC and households that did not include any members with a CHC, and whether having an ESK decreased the odds of leaving the house to get medicine or seeking medical care during Hurricane Ian. While there was some evidence that households with at least one member with a CHC were more likely to have an ESK, there was no clear evidence that having an ESK influenced the need to leave the home for medicine or to seek medical care during Hurricane Ian.

There is limited information about the proportion of U.S. households that include someone with a CHC, but in 2018, 51.8% of American adults had been diagnosed with cancer, coronary heart disease, stroke, hypertension, diabetes, asthma, arthritis, hepatitis, weakening/failing kidneys, or COPD (i.e., emphysema, chronic bronchitis).¹⁶ Although household-level and individual-level statistics are not directly comparable, nearly three-fourths of all households in this study population included a member with a CHC. The high prevalence of households that included someone with a CHC may be related to the high prevalence of chronic disease in the southern region of the U.S.¹⁷ Further, older adults have a high prevalence of CHCs and they constitute 21.6% of Florida's population.^{16,18} Therefore, the high prevalence of households that

included someone with a CHC may also be attributed to more than half of these households reporting that an adult aged ≥ 65 years lived in the home.

In 2020, CDC reported that approximately 33% of U.S. households had an ESK, and this increased to approximately 36% in 2021.¹⁹ A separate study conducted by the Federal Emergency Management Agency (FEMA) also suggests that people living in the U.S. may be more prepared for emergencies now than they were in the past because the number of people who assembled or updated their emergency supplies increased from 33% in 2022 to 48% in 2023. Compared with these national estimates, our findings suggest that having an ESK was more common among surveyed households in southwest Florida during Hurricane Ian (61.6%). Households in southwest Florida may have been more likely to demonstrate preparedness during Hurricane Ian because Florida is a disaster-prone state, with 38 major disaster declarations made between 2000 and 2023, 19 of which were for hurricanes.²⁰ However, the proportion of prepared households identified in this study may not be representative of the proportion of households in southwest Florida that would be prepared for a disaster that occurred without warning.

All households are encouraged to practice disaster preparedness by having an ESK, but this may be especially important for households that include someone with a CHC. There are inconsistencies in the literature regarding whether having an ESK is more common among households that include a member with a CHC compared with households that do not. In our study population, it was more common for households that included at least one person with a CHC to have an ESK, and it was more common for their ESK to include medicine compared with households that did not include anyone with a CHC. Our findings are consistent with the findings of a study conducted in China that found that participants with one or more CHC were better prepared for a disaster than participants who did not have a CHC.¹⁴ However, the findings of that study are not directly comparable to our findings because their study was conducted in a non-disaster setting, it examined disaster-preparedness on the individual-level, and they used a different definition for CHCs (i.e., hypertension, diabetes, COPD, hepatitis, heart disease, asthma, stroke, cancer, migraine). Our findings differ from a study conducted in Pennsylvania which found that households that did not include a special needs member were more likely to engage in preparedness behaviors than households that included a special needs member.¹² However, our study is also not directly comparable to that study because they defined special needs households as those that included a member with a medical condition for which they would require transportation assistance to evacuate the home in an emergency and it was conducted in a non-disaster setting.

Although having an ESK was more common among households that included at least one person with a CHC, it did not appear to protect these households, or households overall, from leaving the house for medical purposes during FEMA's recommended self-sufficiency period (72 hours at minimum and 14 days at maximum). Contrary to our expectation, we observed increased odds of leaving the home to get medication or seeking medical care among households that had an ESK. It is possible that households with members who had more severe CHCs may have been both more likely to have an ESK and more likely to need to leave the home to get medicine or seek medical care, confounding the association between having an ESK and our outcomes. The study did not collect information to allow control for the severity of medical conditions. In addition, the lack of information about the amount or type of medication included in ESKs complicates interpretation of these findings because these factors would likely impact the degree to

which the ESK would be expected to prevent the need to leave home for medication or medical care.

Our findings highlight a gap in knowledge regarding the supply of medicine that households include in their ESKs. Having more detailed information about the medications in an ESK, and the medications routinely needed by household members, could help determine whether the association between having an ESK that includes medicine and leaving the house for medical care or medicine is influenced by the type and amount of medicine available and routinely needed. Collecting such information could also help clarify potential barriers to disaster preparedness among people with CHCs (e.g., insurance, medication costs, access to medication, prescription length). This information could also aid in the creation of general guidelines about the types and amounts of medicine that should be included in ESKs.

Conclusion

Many surveyed households in southwest Florida had an ESK during Hurricane Ian. Households that included someone with a CHC were somewhat more likely to have an ESK and their ESK more often included medicine compared to households that did not include someone with a CHC. Among all households, those that had an ESK that included medicine were somewhat more likely to leave the house for medicine in the first 72 hours after Hurricane Ian's impact. Further, there was no clear evidence that having an ESK prevented someone with a CHC from seeking external care in the 2 weeks following Hurricane Ian. These findings highlight the need to determine the type and amount of medication that households include in their ESK and to collect detailed information about CHCs and their severity to allow control for medical factors that might influence both the likelihood of having an ESK and the ability to be self-sufficient.

Supplementary material. The supplementary material for this article can be found at <http://doi.org/10.1017/dmp.2025.10096>.

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